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THE
SUNKEN
FOREST

of
Fire Island Beach, N. Y.

by
Oakleigh Thorne, II.

* * * * *

Presented as a thesis for degree
of Master of Science, along with
a 400 ft. Kodachrome Sound movie.

YALE CONSERVATION PROGRAM
New Haven, Conn..
May 1, 1953.



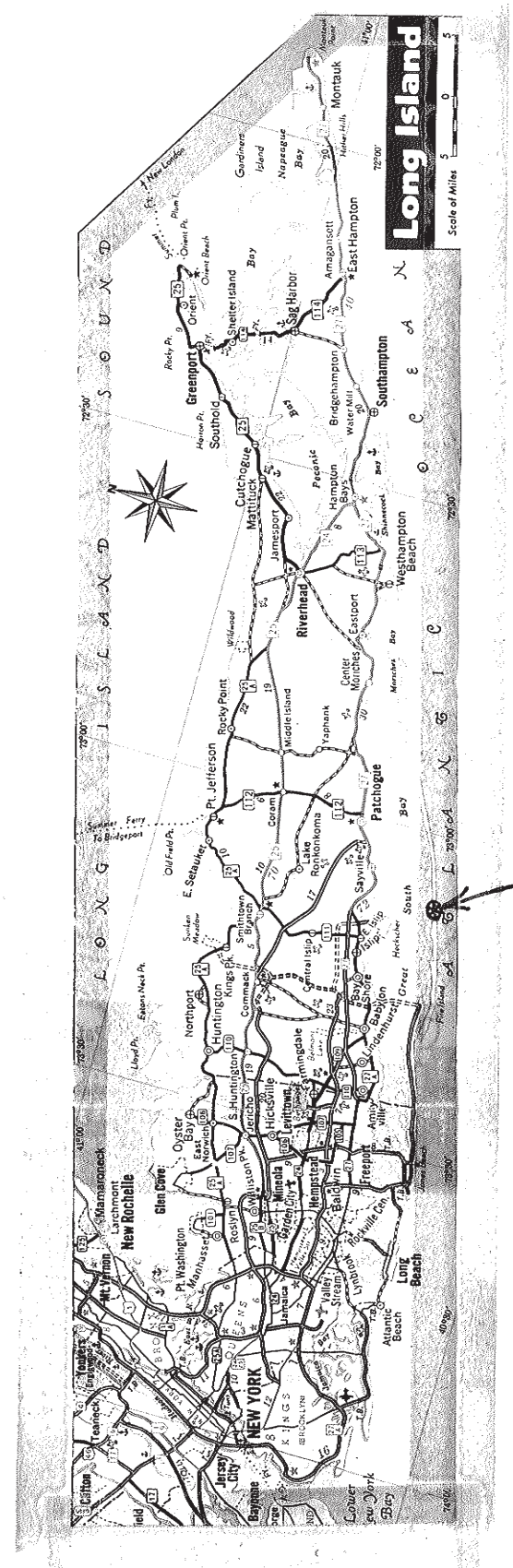
THE SUNKEN FOREST of
Fire Island Beach,
New York

The Sunken Forest lies just to the east of Point O' Woods, a summer settlement, on Fire Island Beach, New York; (sometimes called Great South Beach). (see map of Long Island, page 3). Fire Island separates the Great South Bay, to the North, from the Atlantic Ocean, to the South. That is, it is a long and narrow barrier beach, sometimes only 500 ft. wide, and about 30 miles long. (The average width of the island is about 1000 ft.) "Sunken forests" is a local name for the several holly forests that once were to be found on Fire Island. Because they were hidden behind high sand dunes, and since there was a sharp drop from the dune down into the forest, the adjective "sunken" was applied to these areas. The largest of these holly groves has become known as THE Sunken Forest. Now, indeed, it is; for the other comparable area on the barrier beach has recently been destroyed by Man and his bulldozers. This development is now known as "Fire Island Pines" and is located east of Cherry Grove, another summer settlement. (see map on page 4). There are a few other minor holly groves further east.

There are practically no legends attached to the Sunken Forest, which seems unusual, since it is such a unique spot. I have heard from a couple of people that the pirates used to hide their loot in the Forest. I suppose this sort of legend is inevitable!



Road map of Long Island, showing relative position of the
Sunken Forest. to towns, roads, etc.



The
SUNKEN
FOREST

Note: Fire Island State Park
shown in green

G R E A T

S O U T H

B A Y



FIRE ISLAND INLET



Fire I. Light House

Point Beach

Fire I. State Park

Point Beach

Fire I. State Park

Point Beach

Fire I. State Park

SALTARE BEACH

PARADE

OCEAN BEACH

POINT G W

A T L A N T I C

O C E A N



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REAT SOUTH BAY

ATLANTIC OCEAN



Previous hilly forest
(Now destroyed & leveled)

The
SUNKEN FOREST

THE SUNKEN FOREST

POINT OF WOODS

OCEAN BEACH

FAIRWATER

SANTAIRE

ISLAND BEACH

July 1949

Scale



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Fire Island was well named. In the old days before the lighthouse was built there, beacon fires were often set on this barrier island to aid ships at sea getting their bearings (in and out of New York Harbor). It has also been reported that whenever a whale ran aground (or was driven aground) on the flats off Fire Island, signal fires were set to inform the whalers* living on the Long Island mainland to come across the Bay. The U. S. Coast and Geodetic Survey's name of "Great South Beach" for Fire Island has never been accepted by the natives of the area. As a result, the U. S. Post Office, the Ferry service across the Bay, Road maps, the Telephone Company, and most others still refer to it as "Fire Island." The residents of Point O' Woods seem to be the only ones that use the other name. Common usage always seems to win in the end, however. In my campaign, I have compromised and usually refer to it as "Fire Island Beach." This keeps everybody happy.

The Fire Island barrier is, of course, post glacial. Long Island is a terminal moraine, the flat central and southern part being entirely glacial outwash. Before the wave and tide action built the barrier beach, the south shore of Long Island was the original coastline of the Atlantic Ocean. The Ocean rollers, slowed down by the friction of shallow water off the Long Island coast, unable to carry their sand load any further, gradually built up a chain of

*One section of Fire Island Beach is still referred to as "Whalepath," and is near the site of the new development mentioned before; the one that destroyed one holly grove.

sand bars. The great action of the tides probably joined these together into a barrier beach. The general tide movement, what one might call a current movement, is in a westerly direction along the beach. The amount of sand that can be moved into place on the barrier by this force is sometimes amazing. This rate of deposition of sand is not constant. In the past century, however, a rapid building to the west of the westerly end of Fire Island Beach has taken place. The Fire Island Lighthouse, which was originally built on the point of the beach, now ^(see maps, page 8) lies about 5 miles from the present point! Obviously this rate of building could not have applied to the rest of Fire Island, for if it did, the Sunken Forest (now in climax state for the most part) would not exist. The part of Fire Island on which the Forest is located must be at least several thousand years old.

There have certainly been many inlets from the Ocean to the Great South Bay, although it is difficult to determine just where more than a few were located. The typical hook-back that develops in the beach on the south-east side of inlets in this area is a good clue. Most distinctive of these is "Clam Pond" which lies between the settlements of Saltaire and Fair Harbor. (See map on page 4). This was definitely the site of a previous inlet. The present point of the barrier (Point Democrat) does not have this form because of interference by Man. The Army Engineers, about 15 years ago, decided they could stop the movement (to the

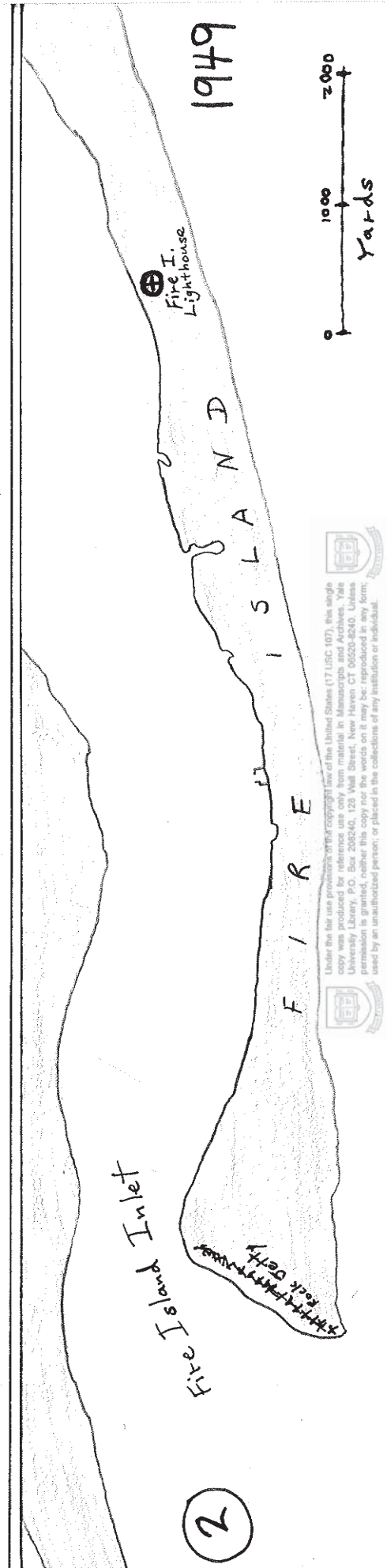
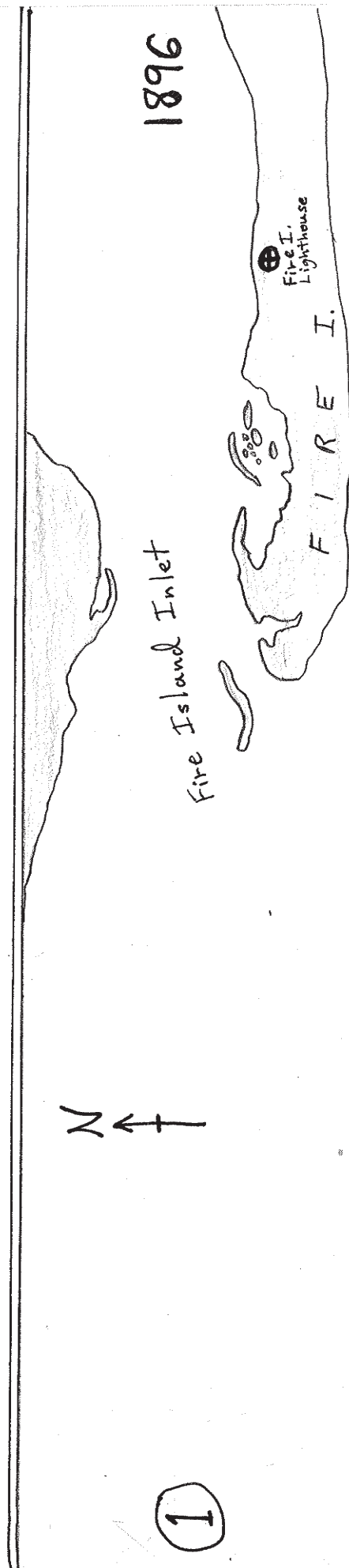
West) of the Point. They constructed, at great expense, a rock jetty about a mile long, extending from the Point out into the Ocean. This stopped the westerly movement of the beach for the geologically immense period of 10 years! The sand piled up in back of the jetty in huge quantities, until it had filled all the way out to the end, then continued its building action to the West, (leaving the jetty high and dry). The jetty, therefore, succeeded only in building a very wide point on the beach. It was an ideal area for Terns and Black Skimmers to nest, and in the Summer of 1949, there were about 2000 Common Terns nesting there. The following year, however, extensive surveying of the old jetty and surrounding area, at the time the birds were setting up their territories, drove the entire colony elsewhere. They have not yet returned.

The present Fire Island Inlet, due to the above mentioned westward movement of the beach, is becoming extremely shoal. The commercial fishing boats are finding it more and more difficult to get in and out of the Bay. The water turn-over on each tide is becoming less and less, in the Bay proper. This has effected entire industries drastically. The famous Blue Point Oyster is gone; the clams are becoming affected. The beaches are mostly unfit for swimming. A new inlet is badly needed. The whole problem is extremely complex and one that demands a great deal of further study.



WESTWARD GROWTH of FIRE I.

- 89 -



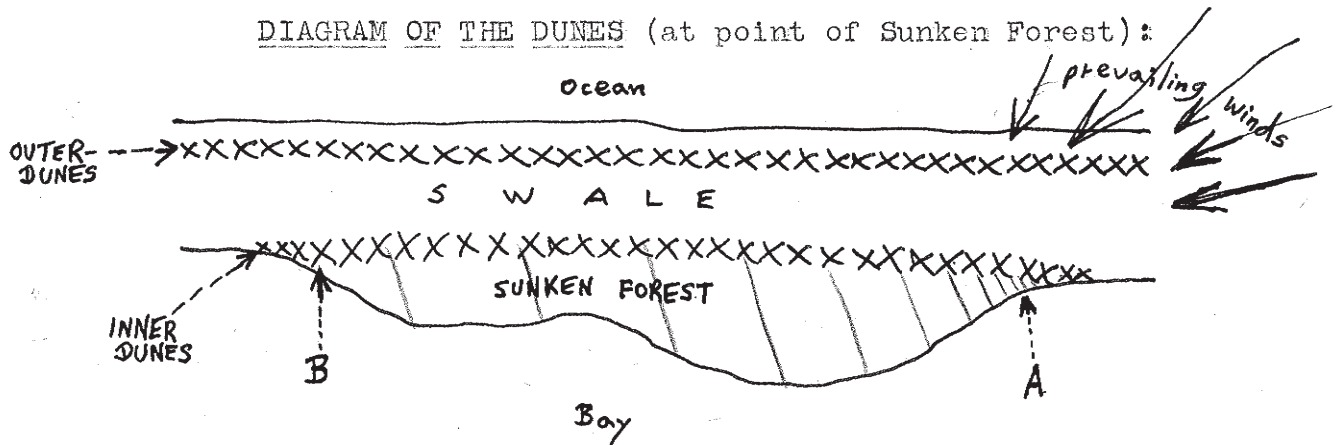
When the Fire Island Lighthouse was built, (on what was then the point of the barrier beach), the small amount of land around the Lighthouse, and extending to the point, was set aside as U. S. Government land, and then transferred to the Long Island State Park Commission. As the beach built to the west, the Park became larger and larger--and is now about 5 miles long. This area has remained, on the whole, fairly undisturbed. It contains one very extensive tide pool and salt marsh. This spot in particular is interesting during the shorebird migrations of the Spring and Fall. On the more recently deposited sandy area, one can see the various stages of early plant succession. The chances are that this part of Fire Island will remain in a natural state, under the jurisdiction of the Park Commission. At present, there is a ferry from the Long Island mainland during the Summer months to this Fire Island State Park. There is a dock, restaurant, and limited bathhouse facilities for those that want to swim in the ocean. This man-disturbance is very localized, however, and hasn't much effect on the land around it, (if any at all). (The Park is marked on the map--page 4--with diagonal lines.)

All of the barrier beach to the east of the Park is pretty well man-developed, until one reaches the Sunken Forest. Looking at the aerial photo on page 1, the Forest is in the center of the picture, located

on the Bayward side of the island. Because of the angle at which it is photographed, the Forest looks compressed, and the Bay-edge contours are therefore exaggerated. This view looks west down the island. The point that protrudes into the Bay, beyond (west of) the Forest is Ocean Beach. This is a boomtown in Summer, with several thousand residents. In Winter, there are about 200 permanent residents, (mostly painters and carpenters). Most of the other settlements, swarming in Summer, are closed completely during Winter.

The reason that the Sunken Forest has developed where it has, is due to the location of sand dunes. In this region of the beach, there are two rows of them. This is not the case in other parts of Fire Island, (except where other holly groves have occurred). It is the second, or inner, dune row that is apparently responsible for the difference. Directly in back of the outer dune and in the swale, the trees are only of the wind-stunted form. (See Picture #20, page 20; and picture on page 21).

DIAGRAM OF THE DUNES (at point of Sunken Forest):



SUNKEN FOREST



1.

1. Edge of the Bay: showing Phragmites and eroded character of their root masses. Water near bank is from 8-20" deep, according to the tide. Brown is masses of dead eel grass (Zostera). Long Island shore 4-5 mi. across in background).
(July 1952)



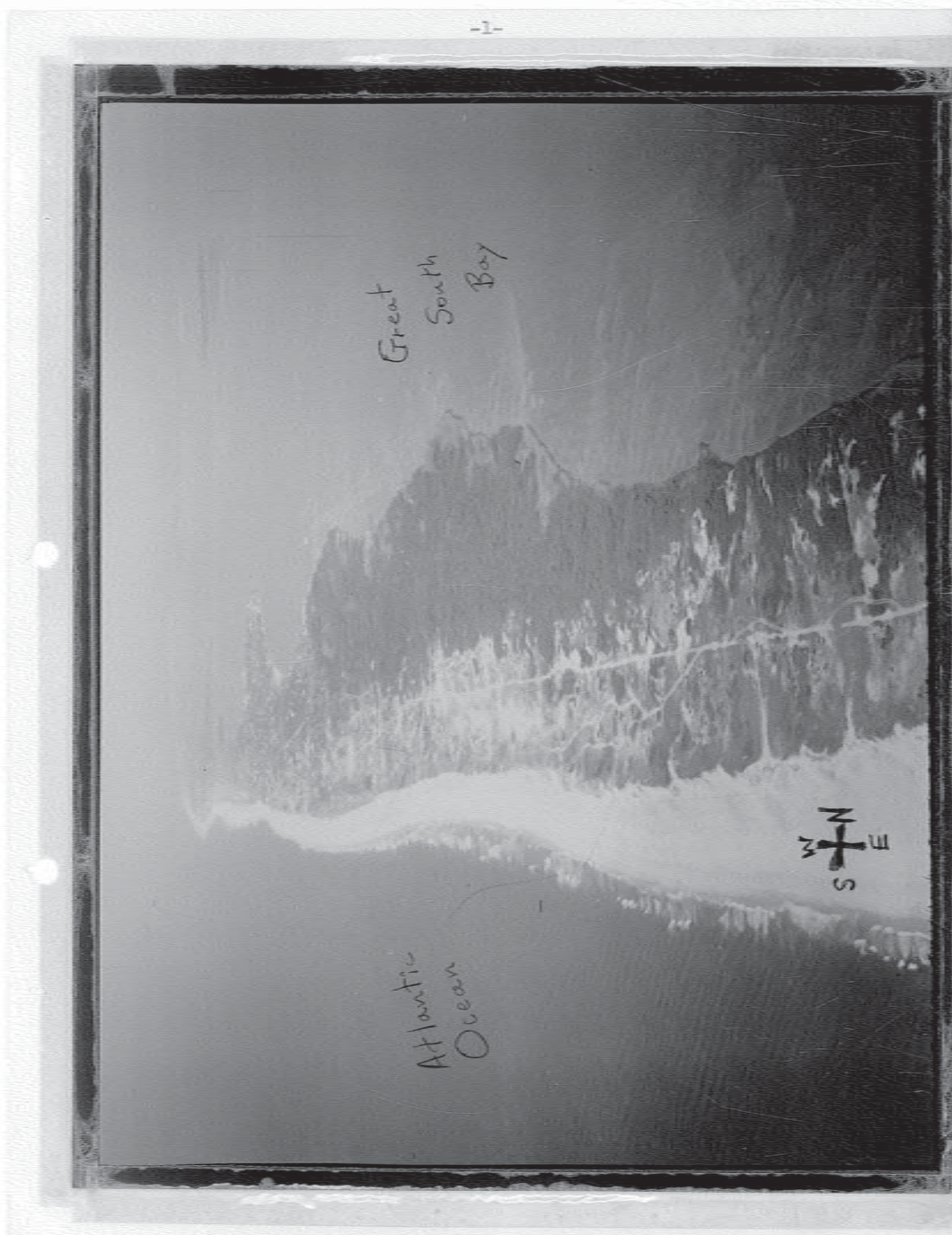
2.

2. Edge of the Bay (looking in opposite direction from picture #1. Drowned stumps (indicate some erosion). Dead Pitch Pine; American Holly and Shadblow, also High Bush Blueberry, in background.



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Sunken Forest



3. Pepperidge (red autumn foliage). Amer. Holly growing up underneath, (upper right), and understory of Catbriar (Smilax) in the foreground.
(Sept. 1952)



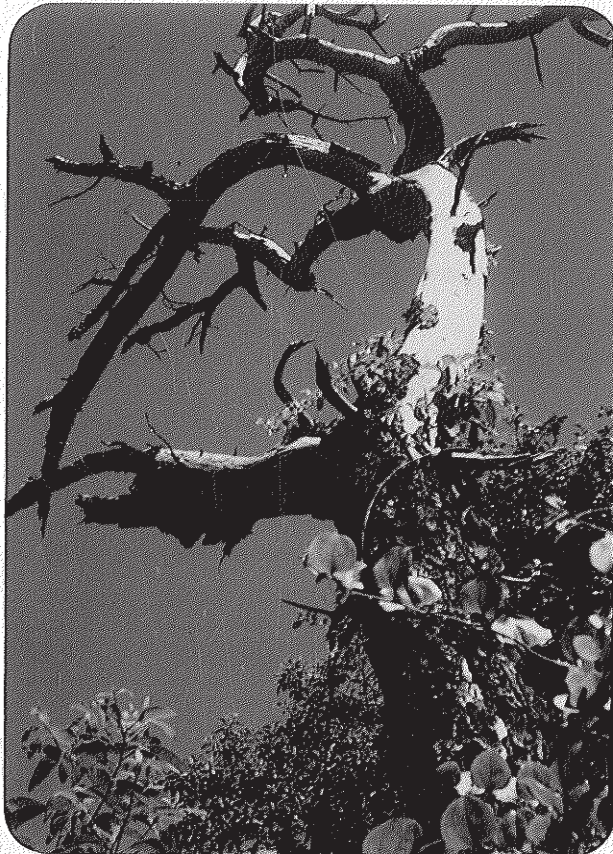
4. Amer. Holly growing up under Pepperidge (near edge of salt marsh). The Bay can just be made out through the trees, beyond the salt marsh. There are two dead Pitch Pines in the left side of the picture.
(Nov. 30, 1952)

SUNKEN FOREST



5.

5. American Holly (Ilex opaca) growing up under, and around, twin Red Oaks (Quercus borealis). (Nov. 30, 1952)



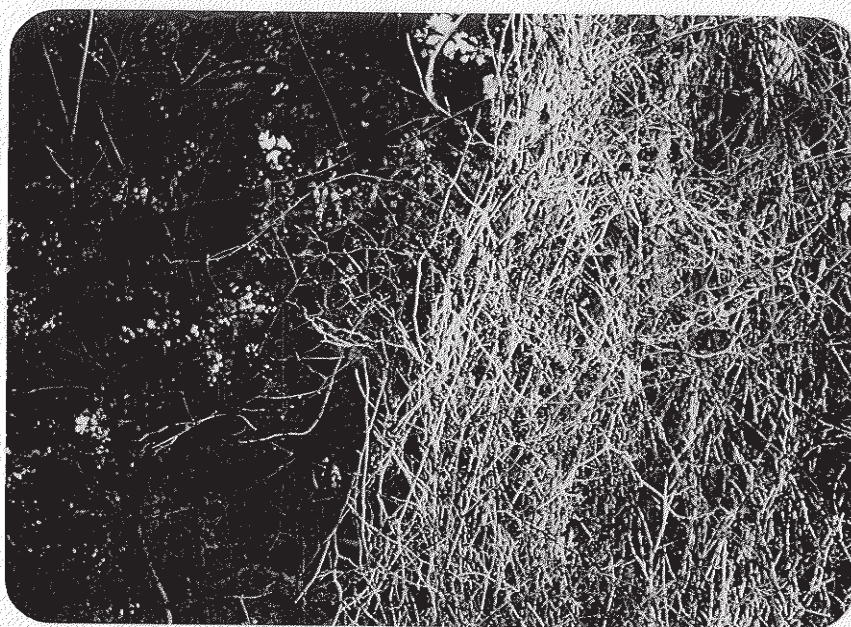
6. Dead Pitch Pine (Pinus rigida) with vines of Virginia Creeper and Catbriar growing up its trunk. Pepperidge and Amer. Holly are growing around it (in background). (July 1952)



SUNKEN FOREST



7. Jungle-like tangle
of Catbriar hanging
on Amer. Hollies.
(July 1952)



8.

8. Close-up view of thick, impenetrable tangle
of Catbriar (*Smilax*). This forms excellent
cover, used especially in nesting season by
Catbirds (*Dumetella carolinensis*).



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Nov 20 1952

SUNKEN FOREST



9. Dead Pitch Pine,
choked by vines
and Holly.

(July 1952)



10.

10. Summer ground cover of Sarsaparilla, very
common in the Forest.

(July 1952)



SUNKEN FOREST



11. Holly reproduction:
A young Amer. Holly
growing up under
older Hollies.

(Nov. 30, 1952)



12. Holly reproduction:
Close-up of young
tree.

(July 1952)

SUNKEN FOREST



13. Cluster of four
medium-aged Amer.
Hollies growing
from a common base.
Ground cover of
Sarsaparilla present.

(July 1952)

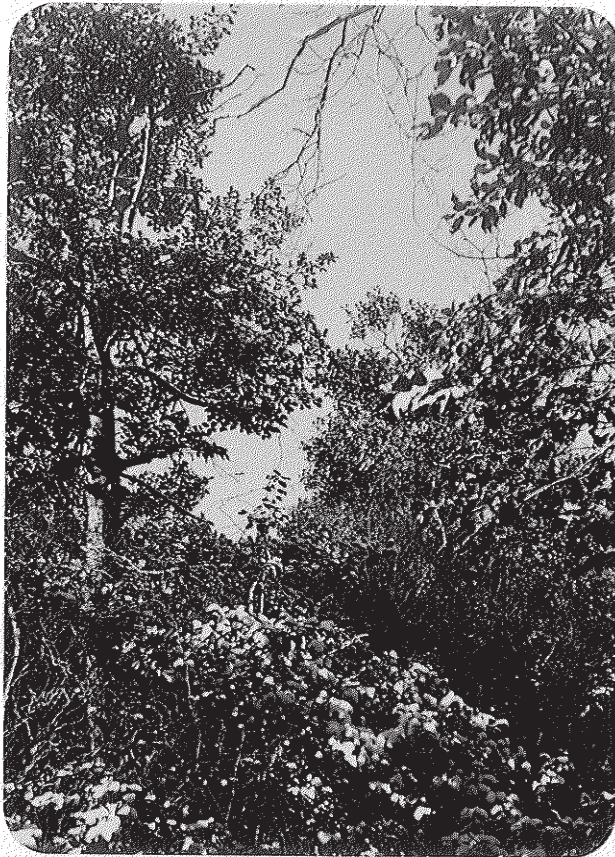


14.

14. Almost pure stand of American Holly
showing the dense, dark character
typical of much of the Sunken Forest,
even in Winter.



SUNKEN FOREST



15. Ridge-top (old dune)
within the Forest,
showing more open
character here. All
trees in this picture
are female (with
red berries).
Understory of Catbriar.

(Nov. 30, 1952)



16.

16. Wind-flattened top of Holly growing on ridge top in Forest, near Inner Dune (outer edge of Forest).

(Nov. 30, 1952)

SUNKEN FOREST



17.

17. Top of the Forest, showing wind-flattened character of the trees. Amer. Holly on the left, Red Cedar on the right. In the left foreground is Bayberry (Myrica pennsylvanicum).

(Nov. 30, 1952)



18.

18. Top of the Inner Dune, showing the "ramparts" of the Forest—(wind-planed Holly, Cedar, Post Oak, and Pitch Pine).

(Nov. 30, 1952)



SUNKEN FOREST



19.

19. Stunted (wind-grown) Pitch Pine on the top of the Inner Dune. Note that its uppermost branches have been weather-killed and sand blasted. Bayberry is mid-background, and shrub-like Holly in far background (right).

(Nov. 30, 1952)



20.

20. Looking across the swale from the top of the Inner Dune toward the Outer Dunes and the Atlantic Ocean beyond. The houses of Point O' Woods are in the right background; note dwarfed Pitch Pines in swale.



SUNKEN FOREST:

View looking from inner dune, across swale, toward outer dune & Ocean.



Beach Plum (foreground); Red Cedar (middle); Poison Ivy.

①

②

③



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Sunken Forest



Old Amer. Holly (*Ilex opaca*)
and catbriar (*Smilax*)



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Sunken Forest



Poison Ivy vine
(cut off by axe)

Old knotty Amer. Holly (*Ilex opaca*)
and catbriar (*Smitax*)



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Sunken Forest



Poison Ivy vine
(cut off by axe)

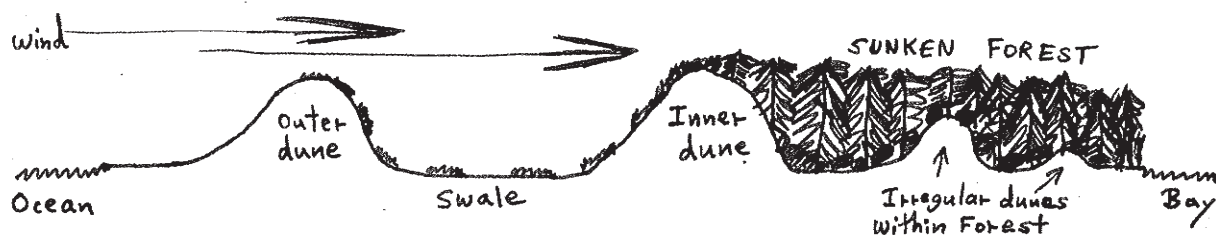
Old Knotty Amer. Holly (*Ilex opaca*)
and catbriar (*Smitax*)



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This condition persists to the top of the inner dune. (See Pictures #18 and 19 on pages 19 and 20). As the dune drops off, rather sharply, into the Forest, the trees assume their more normal form; (except for their tops which are wind-flattened as soon as they grow above the level of the protecting dune.) A cross section through the whole beach in this area would look like this:



At first one is puzzled by the fact that there is a Forest behind the inner dune, and none behind the outer. Since the prevailing winds are from the southwest (diagonally off the Ocean), both sets of dunes should give enough protection to the swales in back of them. Yet in the swale behind the outer dune, the trees remain wind-stunted (as on the top of a mountain). This situation stumped me for quite awhile. Now, however, I believe the answer is this: The prevailing winds frequently come from a more westerly direction (even though the average is southwest). As soon as the wind becomes more to the west of southwest, it tends to draw straight down the middle of the swale, since there are no dunes running across the swale to deflect it. This is sufficient to keep the vegetation here wind-pruned.

As the diagram on page 10 shows, The inner dune runs to the Bay and ends there (at both ends). Besides this, there are irregular dunes running in most every direction throughout the Sunken Forest. This type of dune topography is due to various blow-outs that must have occurred before the dunes were stabilized by any vegetation. At any rate, there was apparently enough protection from the more westerly winds (due to these irregular dunes), so that Forest vegetation could eventually get started at a later successional stage. From point "A" (chart-page 10), the Forest could have spread to the east--each tree protecting the other from the wind. Since there were other westerly-protected spots, this same progression could have developed in many other places. Eventually, a solid Forest was formed. It is difficult, today, to study the westerly end of the Sunken Forest, since it has been broken up by the summer settlement of Point O' Woods. The very name of this place confesses ^{it} that ^{it} took over the end of the Forest. If one looks carefully at the aerial photograph on page 1, one can barely make out about where the Forest once ended to the west. The east end (in the foreground of the same picture), is still clearly defined. One can see how the inner dune actually curves inward towards the Bay in its last two hundred yards or so.



SOIL AND WATER SAMPLES FROM
THE SUNKEN FOREST

- #1. Soil sample: topsoil taken from under pure stand of Pepperidge (Nissa sylvatica) on top of ridge (old dune) on the Bayward side of the Sunken Forest. Understory of Catbriar. This soil is dark reddish brown, fine, with a few scattered grains of white quartz sand intermixed ~~with~~. Contained fine organic matter (esp. rootlets). Date taken: 4/6/53.

<u>pH</u>	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potassium</u>
4.10 (acid)	2% (very low)	28% (high)	2% (very low)

- #2. Water sample: taken from muskeg* at center of Forest. This is mostly rainwater that has leached from the dunes (in the Forest) into the low hollows (muskegs). Color: pale orange-yellow. Date taken: 4/1/53.

<u>pH</u>	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potassium</u>
4.22 (acid)	4% (low)	16% (medium)	<2% (very low)

- #3. Soil sample: taken from base of American Holly (Ilex opaca) about 10" D.B.H. that was growing on the edge of a muskeg* (filled, at this time of year, with rain-water). Date taken: 4/1/53. This soil was wet and heavy, dark reddish-brown in color, and fine in texture. A great deal of organic matter in it, especially many small roots and rootlets.

<u>pH</u>	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potassium</u>
3.75 (very acid)	2% (very low)	28% (high)	2% (very low)

- #4. Soil sample: taken half-way up a 30° slope west of a muskeg* in the Forest; (slope faces east). The location was about 5 ft. above the level of the muskeg*, under American Hollies. Soil is dark reddish brown, with scattered grains of white quartz sand intermixed. Fine. Organic matter present: leaves, small rootlets and a few small seeds. Date taken: 4/1/53.

<u>pH</u>	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potassium</u>
3.90 (acid)	2% (very low)	28% (high)	<2% (very low)



Soil Samples (continued):

- #5. Soil sample: taken from base of male American Holly (8" D.B.H.) growing on top of ridge, west of and 10 ft. above level of muskeg*. The color of this soil was a dark black-brown (darker than all other samples). Fine texture. Some organic matter present: rootlets. Date taken: 4/1/53. (least acid of the soil samples).

<u>pH</u>	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potassium</u>
4.15 (acid)	2% (very low)	28% (high)	2% (very low)

- #6. Soil sample: taken of top of knol (one of the highest points in the Forest, 15 ft. above the level of the muskeg* in center of Forest, under old Sassafras (S. albidum) and Amer. Holly. Color: dark reddish brown with scattered grains of white quartz sand interspersed. Fine. Organic matter: rootlets (few). Date taken: 4/1/53.

<u>pH</u>	<u>Nitrogen</u>	<u>Phosphorus</u>	<u>Potassium</u>
3.90 (acid)	<2% (very low)	28% (high)	2% (very low)

The pH tests are very accurate, having been done at the Conn. Agricultural Experiment Station (kindness of Harry Doehe) on an electrode-type pH meter.

The N-P-K tests are approximate, and were carried out by the Sudbury method, using color comparison (indicator) solutions.

As we can see, the soil of the Sunken Forest is very acid, being most acid in the low (muskeg) areas that are more poorly drained than the slopes and ridges. As is usual with acid soils, the phosphorus is fairly well fixed. Nitrogen and Potassium on the other hand, are pretty well leached out since their (acid) compounds are soluble in water.

The humus layer throughout the Forest is dark and thick, from 6-12" with underlying sand of the old dunes. Several thousand years must have been necessary for such a buildup of organic matter.



Since there are no roads on or going to Fire Island Beach, one must travel by boat across the Great South Bay. Since the water is very shoal off the Sunken Forest, it is necessary to bring along a row-boat, or some sort of shallow-draft boat to get ashore.

The Bay's edge may be salt marsh with Phragmites at the outer edge, or the Forest trees may extend right to the Bay. (See Pictures #1 and 2, on page 11). Picture #1 shows Phragmites, and the blunt edge on the bank, which is their eroded root masses. They are a great bulwark against beach erosion. Picture #2 looks east, in the opposite direction from Picture #1. #2 shows the Forest extending right to the Bay. The drowned stumps of Pitch Pine (Pinus rigida) and Shadblow (Amalanchier) indicate that there has been a certain amount of erosion. There are also stumps to be found under water, up to 10 yards or so from the present bank. The small amount of erosion that has occurred is probably due to waves, or rarely, ice flows, being pushed by high northwest winds. These occur mostly in Winter, during January and February. This is not a common wind in this area (as was mentioned before--southwest is the prevailing wind). During the past two winters, there has been very little ice in the Bay, or at least, not enough to cause much ice-flow erosion. In Summer, the winds are almost constantly from the southern 180° so that the Bay is usually calm* along this Forest edge (being the north shore of Fire Island).

*as in pic. #1 & 2

In the stretch of shallow water that extends for several hundred yards off the Sunken Forest, Eelgrass (Zostera maritima) grows in fairly large quantities. This is a stunted form (of the original species that was wiped out completely about 20 years ago by a sudden disease.) The original healthy form grew to be several feet long; that is, it would grow to the top of the water on the flats throughout the Bay. This was a great food plant for waterfowl of all kinds. The sudden blight of the eelgrass had a great deal to do with the sudden drop-off of waterfowl in the Bay. numbers. There was one strain, however, that grew in Maine coastal waters that was semi-resistant to the disease that wiped out all the rest of the eelgrass on the Atlantic Coast. This has gradually spread south (naturally and by transplantations) along the coast. It has come back pretty well throughout the Great South Bay, but unfortunately remains a stunted form.. Perhaps some genetical experiments, using x-ray or other radiations, might produce a new mutation of Zostera that would approach the old form. Since irradiation speeds up mutation rates to an amazing degree, I do not think this proposal is completely wild. If a healthy strain of this one species could be developed, the ecological and economic benefits would be tremendous.

In Picture #2 and #1, you can see piles of dead, brown Eelgrass washed up on the shore. It is a characteristic of this form to break off after it grows to a certain length. In late Summer, especially,

one sees a great deal of floating eelgrass in the Bay.

Where the Forest extends right to the Bay, as in Picture #2, we find that Shadblow is the common bushy tree. Besides this, however, there are occasional American Hollies and Pitch Pines. Looking at the aerial photograph on page 1, however, we see that the Bay's edge is broken by frequent small salt marshes (light green). Unfortunately these are not completely natural, for the Mosquito Drainage crews have put in several drains. These are not particularly functional anymore, however. I noticed during early April, after heavy rainfall, that the marshes were well filled with water. I remember one day in particular, when the level of the water in the marshes was higher than in the Bay. About 2-6 feet from the bank, one could see small spring-like spouts of orange-yellow water boiling up from the sandy bottom like small volcanoes. This was apparently seepage from the swamps that had gone underground, then come up again through the Bay floor. Two days later, the swamps were pretty well drained.

Just in back of the salt marsh line, is an area that is made up predominantly of Pepperidge (Nissa sylvatica), (also called Tupelo). In this same area, however, one can see occasional young Amer. Hollies growing up under the Pepperidge. (See pictures #3 and #4 on page 12). The Holly seems to be a newcomer to ~~this~~



part of the Forest. I feel sure that it will eventually take over here as it has done in the rest of the Forest.

Beyond the Pepperidge belt, we soon get in to the thick part of the Sunken Forest, which is mostly American Holly and Catbriar (Smilax). This seems to be a most stable community, i. e. climax, at least for the present climatic conditions. We find in this area, remnants of a previous successional stage. They are Pitch Pine, Sassafras, and several Oaks (Red, Black, and Post).. The Post Oaks and Pitch Pines are especially old and dying (or dead).. Picture #6, page 13, shows a dead Pitch Pine with vines of Catbriar and Virginia Creeper growing on it. Picture # 5 on the same page shows twin Red Oaks being surrounded by Holly. (Picture # 9 on page 15 also shows a choked-out Pitch Pine)'.

In the areas where Holly and Catbriar have really taken over, one finds an association that is jungle-like and impenetrable; (see Pictures #7 and 8, page 14).. Nothing seems to be able to reproduce here except these two dominant species: one a tree, the other a vine. There are occasional grape and poison ivy vines in this thick part of the Forest, but they are infrequent compared to the Catbriar. One can find frequent young Hollies growing up under older ones. Pictures # 11 and 12 on page 16 show examples of this advance reproduction, as the Forest Ecologist terms it.

In Summer, the common ground cover throughout the Sunken Forest is Sarsaparilla; (see Picture #10, page 15).. There are several ferns, especially Bracken, that are

to be found. Because of the similarity of the Sarsaparilla's leaf-shape to poison ivy, I am sure many laymen mistake this plant for the latter. I have heard many tales from people who say they have heard that the Sunken Forest is nothing but a mass of Poison Ivy. Actually it is quite rare in the dense part of the Forest, and is only in the vine like form, when found here. On the left hand side of the picture on page 23, is an old poison ivy vine, about 3" in diameter, that has been chopped through by some axeman. It is unfortunate that this has occurred, since this species is part of the normal ecological community--and should be admired for its stamina, not destroyed.

There are some very dense Holly groves in the Forest. In pure stands, such as in Picture #14 on page 17, it reaches a density of about 40 trees per 1600 sq. ft.. Even in Winter, these stands let comparatively little sunlight through to the Forest floor; (Picture #14). The Holly sometimes grows in clusters (cloven); see Picture #13. Many are twisted and knotted into grotesque shapes. (See pictures on pages 22 and 23). As can be noted in these pictures, Catbriar is ever-present in association with the Holly.

The tangle of Holly and Catbriar provides excellent sanctuary for birds. In Spring and Fall, the Forest is alive with migrating songbirds. This cover is best utilized, however, in the nesting season. The Forest



supports an incredible concentration of breeding Catbirds (Dumetella carolinensis): about 10 pairs per acre. In the early autumn, when the young are full grown and territorial barriers have more or less fallen, one can gather several families of these birds around oneself by making strange hissing or squeeking noises. They come in droves to see what the rumpus is about. The Forest is also one of the northernmost habitats of the Carolina Wren, although this bird is sometimes sporadic in appearance.

Of the warblers, Redstarts are found in the dense forest, while Yellow and Chestnut-sided Warblers prefer the more open areas of the ridge tops and marsh edges.

Chickadees (Black-capped) are common throughout the Forest at all times of the year. Over the barrier beach is a great density of hawks during migration, second only to perhaps Cape May and Hawk Mountain in Pennsylvania. There are few mammals in the Forest.

Natives of the area have told me that Fox and rarely Mink can be found there. I have never seen signs of either. Cottontail rabbits occur, but not in great abundance. Snakes are few. Toads are rather common during the summer months over the whole island.

There reportedly used to be a colony of Black-crowned Night Herons that nested in the Forest. I have found groups of old nests that look very much like the remains of this old colony; but they have not used the area since I have been studying it. A few Crows nest in the Forest.

In the lowest spots of the Forest, caused presumably by blow-outs before the dunes became stable, water seepage from the dunes (especially during periods of much rainfall) fills these hollows, causing muskeg. The muskegs are most interesting, for they support a different plant community than the rest of the Forest. In these wet places, Sphagnum moss is common. Sometimes this moss is completely flooded over at periods of high water. Here, also, we find Red Maples (Acer rubrum) are the common tree, although there are even a few American Hollies growing here. This seems unusual, since this latter tree prefers well-drained soil. But here the Holly again proves itself to be a most versatile tree in its edaphic and exposure tolerances. It is no wonder that it has taken over most of the Sunken Forest. Some of the Red Maples in the muskegs are very old trees (around 150 years in age). Many of these maples have been blown over by previous storms, but this has little effect on them. They continue growing in a horizontal position, their main trunk sometimes only a few inches above the water of the muskeg. Their under branches that have been pushed into the water, have died--but the rest of the tree (s) remain growing in a healthy state. These fallen trees have typical mounds of upturned roots, but during the many years (probably at least 15) that they have been blown over, a spongy mat of Cushion Moss (Mnium sp.) has grown over them, and their roots have grown throughout this mound to such an

extent, that a man can walk on them and be supported.

The Red Maples that are still growing upright show, at their tops, the effects of powerful ecological forces to an amazing extent--more than any other tree species in the Forest. Their uppermost branches have been leveled, killed and polished by the force of the weather and wind (as soon as they reach above the level of the protecting dune). This complete killing of the uppermost branches has caused a perfusion of small branches to sprout from 2-3 ft. below the dead ones. As these new branches grow up, they in turn are killed by the weathering. I suspect there is a certain amount of sand blasting here also, especially when very high winds occur. There is surprisingly little white quartz sand (that could have been wind-carried) to be found in the Forest, however, as the soil sample analyses will show: (pages 26-27).

The most dense parts of the Sunken Forest are found in the lower places and on the slopes. The ridge tops throughout the area are more open in character. (See Pictures # 15 and 16, on page 18). There is still an understory of Catbriar, but the Holly and other trees are spaced further apart. The remaining Oaks, especially Post Oaks, prefer these ridge tops. I noted one dying Post Oak that had a huge Poison Ivy vine (about 3" in diameter) twined around its main trunk. This species of Oak has extremely horizontal branching. For this reason several of them have man-made (or child-made) platforms or tree huts in them.



The Post Oaks in the Sunken Forest are all old specimens. They are certainly one of the pioneer trees, along with Red Cedar (Juniperis virginiana) and Pitch Pine. Sassafras, which also prefers the ridge tops, probably came later. Since it is a short-lived tree, it is also on its way out in the Forest. There are only a couple of pure stands of it left. The only Sassafras reproduction that I could find was one seedling about 4 ft. high, growing on the top of the inner dune, a most exposed spot.

As one climbs the slope of the inner dune, the trees become more wind-grown and pruned at the tops. (See Picture # 16, page 18).

Finally, on the top of the inner dune, we find the dwarfed tree forms, mentioned earlier. (See again Pictures # 17 through 20, pages 19 and 20). Beach Plum occurs on certain stretches of the inner dune (see picture, page 21), and a few Red Cedars can be seen. The Cedar, of all the trees in the Forest, seems the least effected by the wind, as can be seen in the picture, page 21. Shrub-like forms of Poison Ivy can also be found here: (see same picture). One of the greatest dune-stabilizers, however, is the Bear Berry, which grows in great perfusion on the top and southern slopes of the inner dune. This forms a compact mat, a great guard against wind erosion.



Since Fire Island has no roads on it or going to it, it has become more and more popular as a Summer residence for many people from New York City and Long Island. The settlements have sidewalks or boardwalks, in place of roads, and people go to market in their bathing suits, pulling toy express wagons. This way of life is very appealing to many, after the hectic pace of the City. The Real Estate Boom of recent years has had, therefore, its effects on Fire Island as well as the mainland.

One of the two sunken forests has already been turned into a development, as I mentioned before. The center of THE Sunken Forest almost went the same way three years ago. One person came to the rescue. He is Dr. Ernest Osborne, Professor of Psychology at Columbia Teacher's College, New York City. Dr. and Mrs. Osborne live at Cherry Grove during the Summer. This is a sizable settlement of a thousand or two at this season; (as compared to the one building in 1885--see letter and picture from Ward Melville on pages 50-1). At a county tax sale, Dr. Osborne and two friends, (Dr. Edward Smith and Mr. Harvey Case--both of Sayville, N. Y.), outbid a real estate developer to save the Forest center. (This comprised Unit 1 and Unit 2, see map on page 37). Dr. Osborne then brought the matter to the attention of Mr. Richard H. Pough, Curator of Conservation, American Museum of Natural History. Mr. Pough was at that time very busy with the task of trying to save Island Beach in New Jersey.

Having managed to save this 10 mile area of virgin beach land, Mr. Pough, in March 1952 got in touch with me about the Sunken Forest problem. Knowing that I lived in Islip, Long Island--right across the Bay from the Forest--he thought I would be interested. I was.

After the school year was over, I started, in the first part of June 1952 to look into the land ownership and price matters concerning the Forest. I wasn't any too soon. A group of local residents of Islip and Bay Shore had already obtained an option to buy 100 ft. of the Case-Smith tract (Unit 1). Fortunately, these people were almost all good friends of mine, including my own brother! I was able to persuade them to give up their option to Wildlife Preserves, Inc. This is a small tax-exempt corporation made up of Mr. Pough (Treasurer), Robert L. Perkins, Jr. (President), and Hobart VanDusen (Secretary), and myself. We had decided a few days before to use this corporation as the land holder, etc., rather than set up a new one. Up to that time, W.P. Inc. had been working to save only Troy Meadows in New Jersey. We were not yet tax-exempt officially, but were to get this in several months (it finally came in Dec. 1952).

In return for the above mentioned group of local residents giving up their option, we gave them a 10 ft. right of way to get from Bay to Ocean for swimming. Since they were about to pay \$10,000 for the 100 ft., we were forced by the terms of the new option (to us) to also pay this much at once. We therefore paid \$10,000 down (which we got as a loan from one helpful



person) for all of Unit I, a total of 400 ft. in width, and running from Bay to Ocean. This gave us an option until November 1, 1952. Legally, this is a crazy price to pay for merely an option, but it was the best terms that we could get. If we had not done this, the whole project to save the Sunken Forest would have died a sudden death before it ^{had} hardly begun.

Dr. Osborne's section, Unit 2, was no problem. He gave us a one year option for one dollar. We were to pay just what he paid for it, plus taxes: \$8000.00.

I was able then to get an option on Unit 3, held by the Dobbins Estate, until Oct. 1, 1952. We paid \$500. for the option to buy at \$50 per front foot, which was average market price; this came to \$26,500. The money paid for the option, of course, applied toward the purchase price.

All of the above came about after many legal headaches, as such things usually do. The problem then was to raise funds to buy what we had optioned.

I was able to get many small contributions, but these did not add up to any significant amount. It helped pay lawyers bills, survey bills, and later, for option extensions on Unit 3.

In November 1952, we got our first break. Having seen several Foundations in New York City, one finally came through and gave us \$15,000--just enough and just in time to take up the option on Unit 1. It was the Mellon Family's OLD DOMINION FOUNDATION. I will forever be grateful to them. This was a turning point

in the whole campaign. We now actually owned a section of the Forest--a concrete achievement to which we could point. This seemed to win the confidence of many people.

We were fortunately able to extend the option on Unit 3 until January 15. This gave us some time. By this date, however, we were still short of funds, although we had received \$5000 from Ward Melville and \$1000 from Mabel Choate. (Mr. Melville also sent the photograph of Cherry Grove in 1885, on page 51). Another anonymous friend came to the rescue, however, and bought the entire Unit 3. They are now holding it for us until we raise the money..

Total contributions to date amount to about \$30,000.00 (May 1, 1953). With this we have bought Unit 1, paid off our debt of \$10,000, and have almost enough to buy Dr. Osborn's portion (Unit 2).

We now have others helping to raise funds. Mr. and Mrs. James Dunlop of New York City and Point O' Woods (who we discovered in December 1952) are carrying out a separate campaign to raise money from everybody connected with Point O' Woods. We have made Mr. and Mrs. Dunlop head of the Sunken Forest Committee, and rightfully so. They have done, and are doing, a wonderful job. They have given two successful receptions for the benefit of the Sunken Forest (see Newspaper clippings on pages 59-60).

We now also have the help of the 85 Federated Garden Clubs of the II District, New York State, who are



raising funds for the Sunken Forest. It is wonderful to see how the whole campaign has mushroomed, and how so many people have taken up the cause of the Forest.

Although a great flood of newspaper publicity in December and January brought mostly small contributions, it at least made most people familiar with the name "Sunken Forest", which has helped indirectly in many ways. A few of these articles are photostatted on pages 52-60).

I have enclosed several pamphlets, and a progress report (dated March 2, 1953), to show some of the other publicity we have had. (Pages: 44-49).

One matter that I have found is vitally important to any campaign is: use only one name organization when selling the public on your project. We used both Wildlife Preserves, Inc. and The Nature Conservancy at first, since we had a working agreement with them, (The N. C. being a national organization). People finally got so confused, that we dropped the name Wildlife Preserves completely from the public eye. The project is now being carried out in the name of The Nature Conservancy. Since they are the national organization and need the prestige, this is best.

It is impossible to mention all the people who have given time and interest to the Sunken Forest Project. I might name a few, however; they are: (besides ones already mentioned) : Dr. Robert Cushman Murphy, Dr. Frank E. Egler, Miss Rachel Carson, Mr. Edwin Way Teale, Mr. Roger Tory Peterson, Mr. John B. Oakes, Mr. and Mrs.



George B. Fell (The Nature Conservancy), Mr. Fred Tuck, Jr., and many officials of the Federated Garden Clubs and the Garden Club of America.

The whole Sunken Forest Project has been a college education in itself, and I would recommend a similar project to anyone who seeks real practical experience in the huge field of Conservation.



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PRESERVES
INCORPORATED



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Islip, L. I., N. Y.



SEPTEMBER 1952

The
Sunken Forest
OF
FIRE ISLAND, N. Y.



"... holly trees over 100 years old!"

**CAN IT BE SAVED
FROM DESTRUCTION
BY MAN?**

WILDLIFE PRESERVES, INC.



The SUNKEN FOREST

CAN WE SAVE IT?

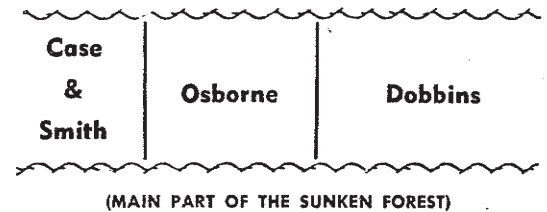
Just east of Point O' Woods on Fire Island, N. Y. lies a unique area known as the "Sunken Forest." Here, due to the protection of high dunes, especially on the Atlantic Ocean side, a "climax" forest has developed. This means that the trees of the area are "holding their own" against any new kinds that might try to gain a foothold. The dominant climax tree in the Sunken Forest is the American Holly (*Ilex opaca*). Present, besides young and medium aged hollies, are holly trees over 100 years old! One is amazed that such a forest could exist on an island that is nothing more than a long and narrow barrier beach, the sand having been originally deposited there by the action of the ocean tides and waves. This area has been a source of wonder and excitement both to the layman and scientist alike. It should be preserved so that later generations can enjoy and study this unique bit of wilderness.

With the real estate and development boom of recent years, many areas that were farm or forest have been transformed into Levittowns, drive-in theatres, and factories. They cannot be changed back again. They are lost forever. The Sunken Forest has also been in danger of being developed. This would be disastrous.

For this reason, Wildlife Preserves Incorporated, a non-profit, philanthropic organization, has taken an active interest in the Sunken Forest. Oakleigh Thorne, II, a managing trustee of the group, has spent the past summer securing options to the

main part of the Forest. It has been in the hands of several private owners, one of which is Dr. Ernest Osborne of Columbia Teachers College. Dr. Osborne has done a great deal to stop petty vandalism in the Forest, such as the cutting of holly by commercial and private individuals at the Christmas season. More protection, however, is desperately needed.

Right now, Wildlife Preserves is faced with the big problem of raising \$25,000 by November 1, 1952 for the section under option from Case and Smith (see map below).



\$26,500 has already been raised for the Dobbins parcel from one anonymous donor. This will be purchased during October 1952. Dr. Osborne's parcel will cost another \$8,000 (what it cost him) and payment is due for it on July 1, 1953.

We need your help, especially those of you who know and love the Sunken Forest. Let's save it now—today! Contributions can be deducted from your Federal Income Tax. Please make checks payable to WILDLIFE PRESERVES INCORPORATED and send them to Oakleigh Thorne, II, Islip, L. I., N. Y. Thank you in advance.

WILDLIFE PRESERVES, Inc.



-46-

The Sunken Forest

of

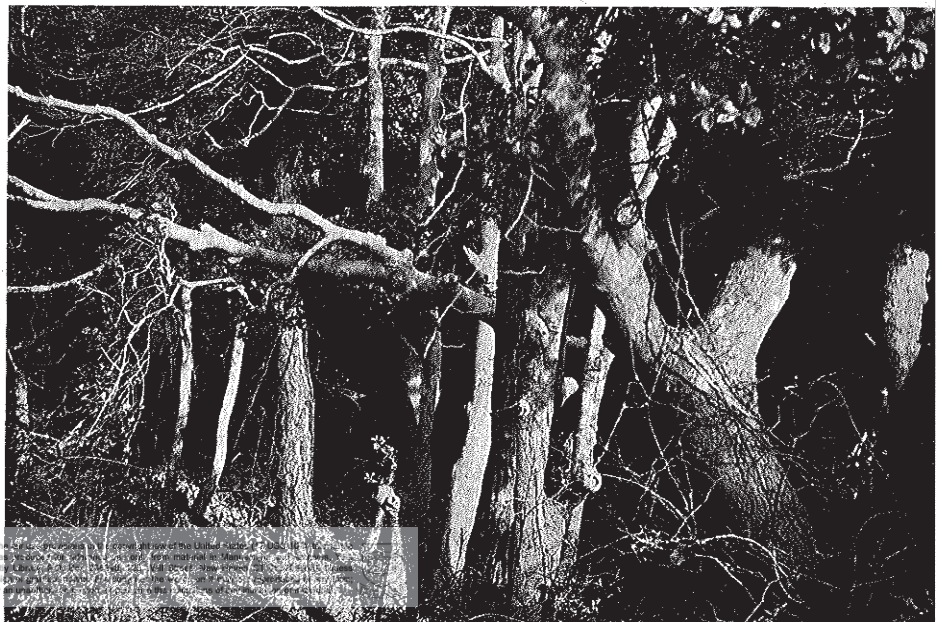
Fire Island Beach, L. I., N. Y.

Just east of Point o' Woods on Fire Island Beach, or, as it is called on the charts, Great South Beach, lies a unique area known as the Sunken Forest. Here, due to the protection of high dunes on the ocean side, a dense and very ancient forest has developed. Dr. Robert Cushman Murphy of The American Museum of Natural History, and other scientists, have found it of extraordinary interest, and the Museum has recently published a science guide to the area. They tell us that many thousands of years were required for the evolution of such a forest on what was once bare sand. Now, dominated by American hollies some of them hundreds of years old, it changes little with the centuries.

One is amazed that such a forest could exist on an island that is nothing more than a long and narrow barrier beach, the sand having been originally deposited there by the action of the ocean tides and waves. The area has been a source of wonder and excitement to the layman and scientist alike. It should be preserved so that later generations can enjoy and study this miniature wilderness.

*American Holly Trees
hundreds of years old*

*Can they be saved
from destruction?*



Under the provisions of the Copyright Act of 1909, the copyright in this work was transferred to the University of California, Berkeley, and the University of California, Berkeley, is hereby authorized to use the work in its publications and in its teaching.



With developers ever on the look-out for areas on which to build, the Sunken Forest is in great danger. In fact the heart of it would have been bulldozed down for a development before this if Dr. Ernest Osborne of Teachers College at Columbia and two associates had not bid in the parcel at an auction sale last year. Fortunately the entire forest is still intact and can be preserved in its pristine state.

The Nature Conservancy—a national organization dedicated to the task of preserving samples of American native wildlife communities—has taken an active interest in the Sunken Forest. Oakleigh Thorne II, a member of this organization who lives nearby, spent last summer determining the ownership of the various sections and negotiating options. The trustees of Wildlife Preserves Incorporated, a non-profit corporation which is acquiring several natural areas in the vicinity of New York, have agreed to take title to the land until such time as the form of permanent ownership most likely to assure its continued protection can be worked out.

The heart of the forest is in three ownerships. Contributions to date of over \$22,000 have enabled us to acquire one of these. Dr. Osborne has given us an option until July 1953 on his section at the price he paid for it—\$8,000. The third property presents a critical problem, as our option on it at a price of \$26,500 will soon expire. In addition, we hope eventually to be able to obtain the flanking areas so that we will control a tract large enough to keep it truly wild.

The Nature Conservancy needs your help in this project. The price of the entire Sunken Forest is less than the cost of many a single painting in the Metropolitan Museum. A work of nature like this forest is just as unique and as irreplaceable as a great work of art. Have we not the same obligation to preserve both for posterity.

The Nature Conservancy is a District of Columbia corporation and contributions to it have been ruled to be tax exempt.

Checks and inquiries for further information should be directed to:

THE NATURE CONSERVANCY
c/o Oakleigh Thorne II
Box 347, Islip, L. I., N. Y.



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NATURE CONSERVATION NEWS

Volume 3 - Number 2

March 1953



JWB

THE SEA is still an untamed habitat. Indeed, its whales have been decimated, its beaches blackened with bilge oil from tankers, and its estuaries polluted. But the sea itself is for the most part unmastered. Wherever it touches the land we live on, it instructs us in elemental lessons of physics, chemistry, biology, and many of their subspecies. It is good for the mind as well as the soul to stand in thought at the sea's edge. It makes a person shrink to his proper place in nature.

DURING FIVE CENTURIES, the sea was forced to wait while brave Hollanders diked off the fertile soils of the Rhine delta. During those same centuries, the Great South Beach of Long Island, New York, formed a flimsy barrier between the sea and a little wilderness. Precious plants and animals lived a precarious existence behind tall dunes of sand piled grain upon grain by the littoral currents of the sea and waftings of the wind. While the sea salt and sand blast of the centuries kept the dune top vegetation changing and youthful, ancient holly trees came to dominate the amazingly stable habitat in the protected hollows. Slow-growing and resistant to insects and disease, the hollies have been using the centuries to reach a rare and beautiful maturity in their special niche, the Sunken Forest.

TO STAND IN A HOLLY FOREST is a rarer privilege than standing on the sea's edge. The nature of the place inspires equally cogent thoughts and feelings. Not only does the reality of time impinge upon one's consciousness, but the realization that these trees are refugees from something called civilization makes a mark on one's mind. Men have sought holly for Christmas decorations, for making musical and scientific instruments, toy boats, furniture inlays, and sporting and athletic goods. They have learned to plant and harvest holly as a crop. But where have they sanctified a holly forest as an entity in itself, a creation of a peculiar physical environment coupled with the urge of living things to keep on living? (In the South, one can still find holly-woods; but our culture is more preoccupied with the creation of a western Hollywood.)

The Sunken Forest

Fire Island Beach, L. I., N. Y.

THE NATURE CONSERVANCY has taken an active interest in the Sunken Forest. One of our members, Oakleigh Thorne, II, spent last summer determining the ownership of the various sections and negotiating options. He and Mr. and Mrs. James N. Dunlop lead the Conservancy's Sunken Forest Committee. The trustees of Wildlife Preserves Incorporated, a non-profit corporation which is acquiring several natural areas in the vicinity of New York, have agreed to take title to the land until such time as the form of permanent ownership most likely to assure its continued protection can be worked out.

WITH DEVELOPERS EVER ON THE LOOK-OUT for areas on which to build, the Sunken Forest is in great danger. In fact the heart of it would have been bulldozed down for a development before this if Dr. Ernest Osborne of Teachers College at Columbia and two associates had not bid in the parcel at an auction sale last year. Fortunately the entire forest is still intact and can be preserved in its pristine state.

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THE NATURE CONSERVANCY

1840 MINTWOOD PLACE, N. W.

WASHINGTON 9, D. C.

NEWS FLASHES

The North American Wildlife Conference will be held in the Statler Hotel, Washington, D.C., on March 9, 10, and 11.

A business meeting of the Nature Conservancy will be held in conjunction with the Conference. It will be on March 9, at 2 p.m. in the Potomac Room of the Statler.

The White House Conference on Resources for the Future, previously announced for March, has been postponed until October or later. Exact date has not been set.

Bills in Congress: Two bills have been introduced to provide that 10% of the receipts from national forests be made available for development of their recreational resources and wildlife habitat. These are H.R. 1972, introduced by Congr. Howard H. Baker of Tennessee, and H.R. 2106, introduced by Congr. Oren Harris of Arkansas. Hearings will be held on H.R. 1972 by the House Committee on Agriculture, Clifford R. Hope, Chairman, on March 11.

Congressman Leroy Johnson has reintroduced his bill to prohibit the construction of dams or water projects in national parks and monuments. This is H.R. 1038. Hearings are scheduled on the bill on March 10 before the Subcommittee on Public Lands of the House Committee on Interior and Insular Affairs. Chairman of the Subcommittee is Wesley A. D'Ewart of Montana.

The bill to provide for a survey of the natural grassland areas of the U. S. has been reintroduced by Congr. Homer D. Angell (Ore.) as H.R. 214. This bill would authorize the Sec'y of Agriculture to make such a survey with a view to setting aside appropriate natural areas for scientific and educational purposes. The bill has been referred to the House Committee on Agriculture.

RECORD ATTENDANCE AT STATE AND NATIONAL PARKS

Visitors to the national parks and other areas administered by the National Park Service totalled 41,516,664 in the 1952 travel year ended September 30, a record in annual travel to these areas. The 1952 total was almost double that for 1941, the last prewar year, and for 1946.

The National Park Service states that this increase in travel has thrown a terrific added burden on the areas visited. Facilities for visitors have nowhere near kept pace with the demands on them; sewage disposal systems, other sanitary facilities, utilities, and campgrounds have become seriously inadequate in many areas because the Service has lacked funds with which to provide for the doubled load. The Service is troubled by its inability to furnish adequate protection for visitors or the resources it guards. At Yellowstone, for example, where the number of visitors has increased 130% since 1941, it was not able to supply as many ranger man-hours as it did 11 years ago.

In such conditions as these, there is a serious threat to resources that are among the most prized possessions of the American people.

ATTENDANCE AT STATE PARKS throughout the nation totalled approximately 120,723,000 in 1951, with the park systems of New York, Michigan, Illinois, Pennsylvania, and California attracting the most visitors, according to a recent announcement of the National Park Service.

This attendance exceeded by 6% that of 1950 and by 30% that of 1946, the first normal year following World War II, according to the report.

Compilation of these and other statistics pertaining to state parks and their operation is an important phase of the co-operative program between the National Park Service and the states conducted under authority of the Park, Parkway, and Recreational Area Study Act of 1936. The Service has issued two publications entitled "State Park Statistics--1951" and "State Parks--Areas, Acreages, and Accommodations."

INTRODUCTION OF EXOTICS

The Colorado Game and Fish Commission plans to introduce Mysis, a small crustacean, into Colorado lakes. The object is to increase the trout population by providing an additional food supply for them. The Mysis are to be brought in from Alberta. Plan was originally to transfer them last summer but a sharp population drop in the Canadian lake made collecting impossible.

A leading fish parasitologist says that there are strong indications Mysis may be host of parasites. In a study made recently on trout and salmon where Mysis were an important part of the diet, nearly all fish were parasitized. It appears that this introduction could backfire.

Reports indicate that the U.S. Fish and Wildlife Service is still busy importing game birds. These introductions are apparently being made on the basis of the most superficial scientific studies. Two hundred chukar partridges were brought in by air, "the longest flight that live partridges have ever made sitting down". This shipment was headed for Colorado. In addition, the state of New Mexico has received 146 Turkish chukars recently. To date the New Mexico Game Department has released 148 chukars in the Gila National Forest and the Canadian River country.

Both New Jersey and Kentucky are planting Great Plains jack rabbits. In Kentucky 95 rabbits have been planted in 3 different sites. These hares are considered pests, according to Kentucky publications, but it is hoped hunting will keep them in check.

PREDATOR PERSECUTION CONTINUES

ALASKA: "An outstanding job of wolf control on the Arctic slope of the Brooks Range in Alaska, using aircraft, has been reported by the Fish and Wildlife Service. Operating from a base at Uniat, three planes sighted 334 wolves, and made a known kill of 259. This project was established to protect the caribou herds of Alaska which have been rapidly

diminishing, largely through wolf depredations."
 --News note from U.S. Dept. of the Interior. (How did the caribou manage to survive before airplanes?)

WASHINGTON: "Cougar population on downgrade in Blue Mtns.: Merle Pooshagen, state predator hunter in the Blue Mountain region, is a deciding factor in the population balance of cougars in that area.

"Coyotes, cougars and bobcats are his main prey. He has trapped 200 coyotes since he began work with the Game Department 5 years ago. He takes about 500 predators per year.

"But cougars are the main threat to deer. It is estimated that each cougar kills about 50 deer per year, with an occasional elk thrown in. Only once in a great while will a cougar attack livestock.

"Pooshagen got his first cougar about six months ago, and though he claims he's just learning, he is learning fast. He uses the old Indian-style snare with modern improvements. He uses a small steel cable instead of rope. Once the cougar's head enters the loop, it can do nothing other than tighten." --from Evergreen Sports Letter, Vol. II, No.43, Box 278, Naches, Wash.

ENDANGERED SPECIES

TRUMPETER SWANS were censused at the end of their breeding season by the U.S. Fish & Wildlife Service. Instead of the 73 reported in 1935, the biologists responsible for management of the trumpeter swans tabulated 571. The birds were mostly found in the vicinity of the federal refuges which protect their habitat amid farms and ranches. Good work!

WHOOPIING CRANES are still in a most precarious condition not very far from extinction. An aerial census on the Aransas National Wildlife Refuge on the Texas coast turned up just 22 of them, one less than last year. Two additional birds are in a New Orleans zoo. The National Audubon Society is planning intensified educational efforts to combat indifference in killing of the birds by hunters.

A CHANCE FOR COOPERATION

There is a need for setting aside special sanctuaries for rare or endangered mammals and birds. For instance, the White Mountain shrew (Sorex tenellus) is now confined to a few stations along small streams of the Charleston Mountains in southern Nevada. Only about 15 specimens have been collected. It is evidently threatened by grazing, and some study should be undertaken with a view to safeguarding its existence.

In a similar vein, some definite action should be taken to provide a complete guarantee of future habitat to such rare birds as the Cape Sable seaside sparrow and the dusky seaside sparrow. Apparently adequate census data are not available for either of these two species and there seems to be no guarantee that their habitats will be preserved.

The Nature Conservancy is eager to cooperate with other scientific organizations in sponsoring these and similar studies.

REGIONAL NOTES

ARIZONA: Coronado National Memorial has just been established as a unit of the National Park Service. Located entirely within the Coronado National Forest, this 2,745-acre scenic area includes Coronado Peak from which may be obtained a sweeping view of the region traversed by the Spanish explorer, Francisco Vasquez de Coronado, and his men on their journey in 1540 from Mexico into what is now the United States.

This project was originally conceived as an international memorial under the joint auspices of Mexico and the U.S. Congress authorized it in that form in 1941. Last July, legislation amending the 1941 Act was enacted which authorized the establishment, by Presidential proclamation, of a national instead of an international memorial. It is hoped that the way will soon be cleared for the Mexican Government to set aside lands for a companion memorial so that the long-cherished idea of an international memorial commemorating the Coronado expedition may be realized.

Miss Grace M. Sparks of Bisbee, Arizona, has been a leader in the movement to establish the Memorial.

FLORIDA: Articles in Mosquito News for June 1952 indicate clearly that mosquito control experts in Florida have the opinion that chemical controls are only a partial answer, and that wholesale drainage and other engineering approaches are the lasting solution. This applies to the specific kind of mosquito found in the Florida marshes. Intensified and expanded drainage efforts are underway, especially in coastal marshes. The entire coastal area of Florida is covered by mosquito control districts except for 2 counties. (It is difficult to avoid the conviction that natural areas and certain other wildlife lands can be protected only by acquisition and vigorous guardianship. Never before in the U.S. have "undeveloped" lands been attacked by so many interests. Mosquito control, agricultural expansion, industrialization, resort development, and suburbanization are proceeding at a rate that would have been incredible 20 years ago.)

NEW JERSEY: "Negotiations are underway for the dedication of from one-fourth to one-third of the Sandy Hook area by the U. S. Army to the State for use as a seashore park. An appropriation of \$500,000 is now available for the beginning of the development of the area when the negotiations are complete. The area is of interest to foresters, especially because of the unique holly forest. This will be included in that part of the Hook which the State will take over and supervise.

"An appropriation of \$2,000,000 is available under which the State is negotiating for, and expects to acquire, a property known as the Wharton Estate in Atlantic, Burlington, and Camden Counties with a total area of approximately 100,000 acres. This property is almost altogether undeveloped wilderness and will be managed as a combination forest, wildlife, water and recreation reservation." --from Allegheny News, Allegheny Section of the Society of American Foresters, January 1953.



THE NATURE CONSERVANCY
1840 MINTWOOD PLACE, N. W.
WASHINGTON 9, D. C.
FORM 3547 REQUESTED

The Nature Conservancy is an independent member-governed organization dedicated to saving America's heritage of wild nature. Its specific object is to preserve natural areas as "living museums" of the primeval wilderness. Such tracts are precious for their scientific, educational, and esthetic values. They also afford a home for the multitude of kinds of living things that would otherwise vanish from the earth, destroyed by our civilization.

The work of our organization began in 1917 under the direction of a committee of the Ecological Society of America. In 1946 the Ecologists Union was formed to take over these tasks. In 1950 its name was changed to the Nature Conservancy.

We, the members of the Nature Conservancy, invite you to join with us in this work. Membership is open to both individuals and organizations. Your contribution is an allowable income tax deduction.

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NATURE CONSERVATION NEWS

Editors: JOHN W. BRAINERD Springfield College, Mass.	GEORGE B. FELL Washington, D. C.
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The Nature Conservancy
1840 Mintwood Place, N. W.
Washington 9, D. C.

Date.....

Please include me (our organization) as a member. Enclosed is \$.....

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Membership classes are as follows:

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NEWS FLASHES — See page 2

3:2
3-53

Porcupine Mountains

"THIS IS THE FOREST PRIMEVAL, The murmuring pines and the hemlocks..."

Few areas in Michigan possess more of a wilderness atmosphere than the Porcupine Mountains. Here we find a remnant of the original forest which covered vast areas of northern Michigan before the white man, with his saw and axe, denuded them. We can take pride in the fact that this 55,000-acre tract of relatively undisturbed timber belongs to the people; we can be proud that the people demand that it remain a wilderness.

No roads dissect the Porcupine Mountains State Park; and, as long as the public continues to support the present policies governing the management of this park, no roads will be permitted. Foot trails take the place of roads, and many miles of them crisscross the area. These trails are rugged, and a pack weighs heavily by day's end; but one is well repaid for weariness if he enjoys solitude, and nature's handiwork.

Big timber here can still be seen. Giant specimens of pine and hemlock, yellow birch and maple ranging up to four and five feet in diameter and one hundred feet, or more, in height, are commonplace.

Clear cold streams emerging from the hills, plunge down the rocky slopes and leap the sheer escarpments. Waterfalls and rapids lend wild beauty to these waters. Speckled trout lurk in the quiet pools and gurgling

riffles where they may test the skill of any fisherman.

Deer and bear find food and shelter in the wooded hills and in the dark seclusion of the valleys. Bald eagles circle high above the tallest trees; ospreys patrol the stream or fish for "coasters" near the shore of Lake Superior; startled ravens croak at the intruder and take wing as he approaches them; pileated woodpeckers police the woods and hammer out their messages remote from human-kind which they refuse to tolerate. The wolf finds freedom here to hunt and rear his young. God grant that he may ever find it thus, lest he be added to the list of animals which *used to live* in Michigan.

The Porcupines are no less beautiful when snow sifts down and spreads a deep white blanket on the land. Snow-laden branches, white domes and arches, frosty spires replace familiar scenes and turn the forest into fairyland. Scenes such as this are the reward of those who have the hardihood to walk the snowbound trails equipped with snowshoes or with skis. One need not fear a night out in the wilderness, for trail-side cabins will be found beneath the pines for the convenience of a cold or weary traveler.

--editorial by
R. D. Burroughs in
Michigan Conservation
January-February, 1953

"But a little lonesome space where nature has her own way, where it is quiet enough at night for one to hear the patter of small paws on leaves and the murmuring of birds, can still be afforded in these troubled days. The gift of tranquility, wherever found, is beyond price."

--New York Times editorial, October 5, 1952

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THE NATURE CONSERVANCY

1840 MINTWOOD PLACE, N. W.
WASHINGTON 9, D. C.

March 2, 1953

Dear Friends of the Sunken Forest:

Here is an up to date report on the progress of the campaign to preserve the Sunken Forest of Fire Island Beach.

We have set our sights on the acquisition this year of two additional properties, which, with Unit No. 1 already acquired, would give us a strip of land 1138 feet wide extending from Ocean to Bay.

Unit No. 1, 404 feet in width, was purchased last summer for \$25,000, following the withdrawal in our favor of another buyer willing to pay that price. The condition of this withdrawal was that we purchase immediately, and we had to borrow \$10,000 to supplement the \$15,000 grant we received from the Old Dominion Foundation. Thanks to the generosity of some 95 contributors who have donated \$28,035 to date, we are now in a position to pay off this loan.

Unit No. 2, 203 feet in width, immediately east of No. 1, belongs to Professor Ernest Osborne, who first called our attention to the imminent threat of a real estate development in the area. He paid \$8,000 for this unit and has given us an option until July 1, 1953, to purchase it from him at that price. After paying off the loan we had to make to purchase Unit No. 1 we will have \$3,035 toward Unit No. 2.

Unit No. 3, 531 feet in width, lies immediately east of Unit No. 2. When our option on it expired in January 1953 it was sold to a friendly purchaser who has indicated a willingness to sell to us at his cost as wide a strip adjacent to Unit No. 2 as we can raise money to buy. The price paid for this unit was \$26,500. This means that every time we raise another \$50 we shall be in a position to purchase one more foot of it, once the sum needed for the Osborne property has been obtained.

With the acquisition of these three units our first task will have been accomplished and all those who have made contributions to save the Forest will be able to congratulate themselves on a great success, though still limited as to area. We call attention to this limitation only because we hope eventually to be able to acquire the two or three properties lying between the three units mentioned above and Point o' Woods on the west. Both contain fine holly forest, but we have dared to make only preliminary plans looking to their acquisition and not yet to begin the actual raising of funds. This will have to wait until we make further progress with the units forming the heart of the Forest on which we are now vigorously working.

This letter is a report to advise you not only of the concrete accomplishment up to this time but also of the exciting prospects that may be waiting for us. All of us can help, especially by stirring up our friends to take an active part in the project.

With appreciation for all you have done and will do, we are,

Cordially yours,

Oakleigh Thorne, II.

The Sunken Forest Committee
of The Nature Conservancy

AN INDEPENDENT ORGANIZATION TO SAVE AMERICA'S HERITAGE OF WILD NATURE

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NATURE CONSERVATION NEWS

Editor:
JOHN W. BRAINERD
Springfield College

25 WEST 43 STREET
NEW YORK 36, N. Y.

22 January 1953

Mr Oakleigh Thorne II
Box 347
Maple st
Islip L I New York

Dear Mr Thorne

Since you are doing such a grand job in saving the Sunken Forest on Fire Island beach, it occurs to me that you may be interested in the enclosed print of Cherry Grove, made from a plate exposed in 1885

As you will see, the plate itself is cracked, but it still gives a pretty good idea of the appearance of this popular resort sixty-odd years ago

Very truly yours

Ward Melville
Ward Melville

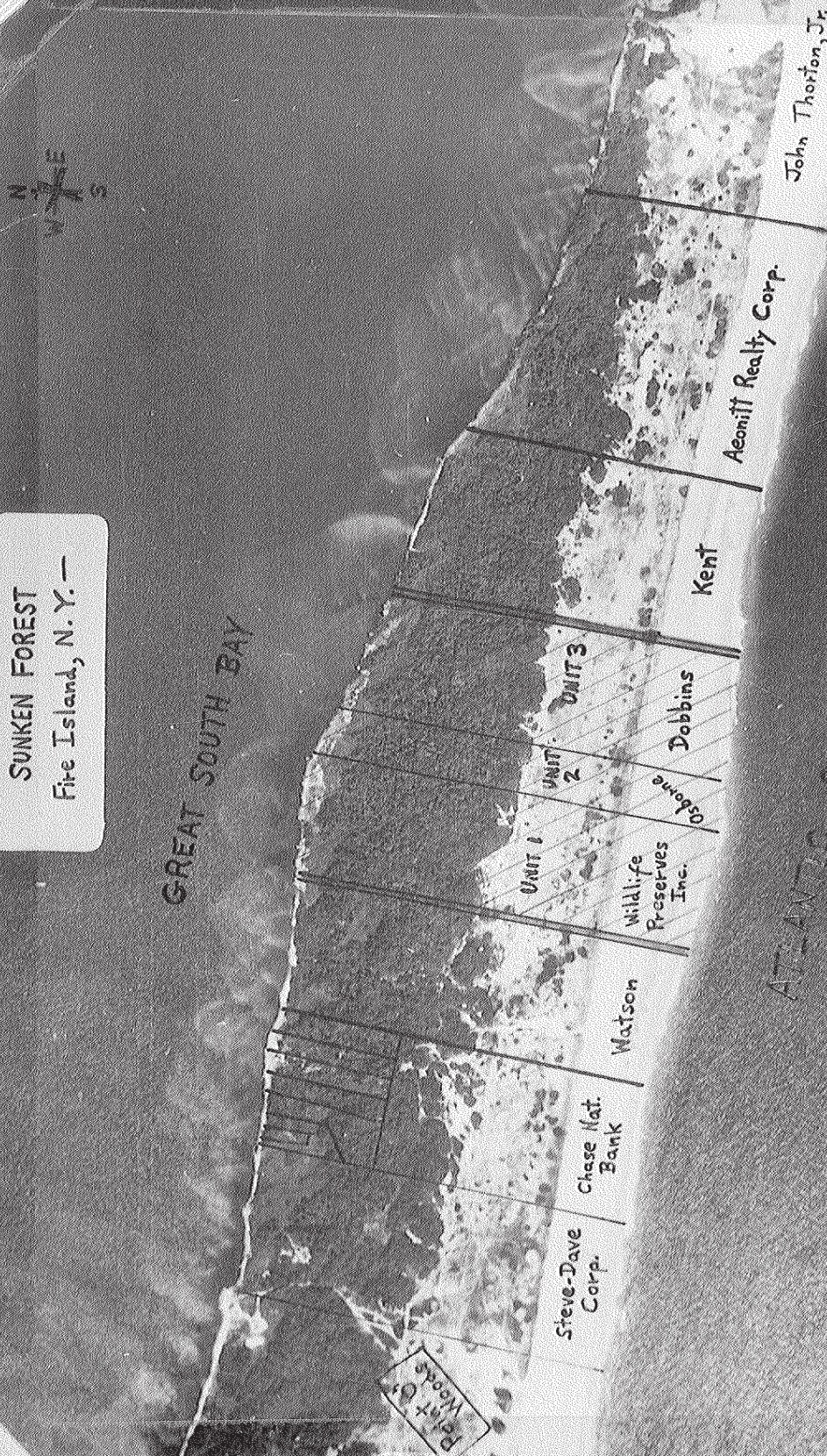
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SUNKEN FOREST

Fire Island, N. Y. -

GREAT SOUTH BAY

ATLANTIC OCEAN



Approx. Scale $\frac{3}{4}$ " = 460'

Flown September 1938 by:
Fairchild Aerial Surveys
Long Island City

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Cherry Grove, Fire I., N.Y.



1885

CONSERVATION: FIRE ISLAND FOREST

By JOHN B. OAKES

THE energetic efforts of a small group of conservationists to preserve from the bulldozer Sunken Forest on Fire Island have already had partial success. Sparked by Oakleigh Thorne 2d, a student in the Yale Conservation program, the conservationists' group has bought for \$25,000 about one-third of the desired property. Of this sum, \$15,000 was given by the Mellon family's Old Dominion Foundation.

Sunken Forest is a unique unspoiled area of about fifty acres consisting of beach, dunes and ancient holly trees just east of Point O' Woods. It stretches all the way across Fire Island from the Atlantic Ocean to the Great South Bay. In order to preserve the entire tract from certain destruction at the hands of "developers," it is necessary to raise \$26,500 more before Jan. 15, the date of expiration for an option that has already been three times extended.

On the doorstep of New York City, Sunken Forest is another Island Beach, though on a vastly smaller scale. Island Beach appears to have been saved by the action of the New Jersey Legislature in voting the sum necessary for its purchase, although a lawsuit by real estate interests to prevent sale of the property to the state has not yet been settled. Sunken Forest will have to be preserved through private action if it is to be preserved at all.

Unspoiled 50-Acre Area to
Be 'Developed' Unless
Funds Are Raised.

SEA CLIFF NEWS
Glen Cove 4-0615

Save The Sunken Forest

There is a constant—at times it may seem too constant—demand upon Long Islanders to "save" this or that bit of natural beauty from the "developers". And, bytheway, it's really unjust to blame the developers for developing "homes" for the thousands of Americans who need them and live in them.

One more natural beauty to be saved if possible is the strange and lovely phenomenon known as the Sunken Forest on Fire Island. It lies largely in a sort of wind-built and wind protected hollow. Lying just East of Point O' Woods it stretches clear across the island from ocean to Great South Bay. It is a unique unspoiled area of about fifty acres including its beaches and dunes. The forest consists of some of the most gnarled, the most beautiful, the most ancient of holly trees on this continent.

For its preservation from looming invasion a group of conservationists has formed a holding corporation, Wildlife Preserves, Inc., which has already acquired some of the forest, largely through a gift of \$15,000 from the Mellon family's Old Dominion Foundation. The Wildlife trustees are Messrs. Richard A. Pough and Hobart M. Van Dueson, both of the American Museum of Natural History, together with Mr. Oakleigh Thorne, 2nd, Islip, N. Y., who is taking the lead in raising the funds. The trustees now have an option on another 161 1/2 acres of forest. Their option expires January 15 and you may help save the day by sending to Mr. Thorne any contribution toward raising the necessary \$26,500 by that date. Meanwhile a guard has been placed over the property to keep these primeval trees from being torn apart by holly seekers.

Newsday

Thursday, December 11, 1952

Fin, Gun and Rudder

by John (Duke) Dolyny

Sunken Forest, the unique 50-acre tract located east of Point O' Woods, has just received another reprieve. Slated to become a real estate sub-division, a small energetic group of conservationists have succeeded for the third time to block this move.

Led by Richard H. Pough, curator of conservation at the American Museum of Natural History in New York City, treasurer of the organization and Oakleigh Thorne, a student in the Yale Conservation program, the group raised \$25,000 through contributions to secure about one-third of the desired land. Of this sum, \$15,000 was given by the Mellon family's old Dominion Foundation.

The conservationists will require \$26,500 more before Jan. 15, the date of expiration for an option that has already been three times extended. Sunken Forest is a most unusual spot on an otherwise sandy beach, contains wild cranberry bogs and other fresh water bogs which provide a source of fresh water for migratory birds. Some of the vegetation in this section of the barrier beach is so densely tangled with cat brier, wild grape, and ancient holly trees, that it is almost impossible to reach the bay shore. Other trees exist such as oak, swamp maple, pepperidge, sassafras and pitch pine. The overhead shade is so complete that in many places in the forest the sun does not filter

NEW YORK HERALD TRIBUNE.

TUESDAY,

DECEMBER 23, 1952

Move Onto Save Old Holly Trees On Fire Island

Group Now Raising Funds
to Acquire 36½-Acre
Stretch of Sunken Forest

A group of private citizens is in the process of insuring the preservation of some of the oldest holly trees in America, it was disclosed yesterday. The ancient trees, some of them several hundred years old, dominate the Sunken Forest, a spectacular stretch of woodland just east of Point o' Woods on Fire Island. Fire Island is a thirty-mile-long sand spit off the south shore of Long Island and is accessible only by boat.

Richard H. Pough, curator of the department of conservation at the American Museum of Natural History, said that the group already has purchased a 400-foot stretch of the narrow island for \$25,000 and is now raising funds with the aim of acquiring 1,138 feet containing thirty-six and a half acres.

The area is a mysterious sort of place. It is called the Sunken Forest because it lies hidden in a valley behind the sand dunes. The tops of the trees are kept clipped off by the winter winds that whip across the island. Although it is dominated by holly trees there are also sassafras, tupelo, pitch pine and wild cherry trees. The old holly trees have gnarled trunks and reach up to thirty-five feet from the forest floor.

The trees have the typical green, shiny leaves with sharp points and the red berries which are traditional at this time of the year. They represent fine specimens of the true American holly which reaches its maximum growth along the coast. In many areas the American holly has become rare because its leaves and berries were picked and sold for Christmas decorations.

Twisted and Knotted

In describing the Sunken Forest, Dr. Robert Cushman Murphy, ornithologist, once wrote, "The long boles of the trees in the Sunken Forest make a picturesque and contrasting scene. Most striking are the yellowish-gray hollies—the last word in grotesquerie of stem and branch—twisted, gnarled and knotted, parting and fusing again like island olives. Cloven trunks are not uncommon. Some of the hollies have diameters of ten to twelve inches, breast-high, and a height of thirty-five feet."

Mr. Pough said the move to preserve the area was started when Dr. Ernest Osborne, of Teachers College at Columbia University, and two associates were attending an auction and purchased a 600-foot strip of the island. Dr. Osborne went to Mr. Pough with the idea of turning the area into some sort of public or quasi-public preserve. Mr. Pough interested The Nature Conservancy in the project. The Nature Conservancy is an organization interested in preserving such areas of natural interest.

A group of interested persons formed Wildlife Preserves, Inc., as a holding corporation for the land as they acquire it. The trustees of the corporation are Mr. Pough, Hobart M. Van Deusen, also of the museum, and Oakleigh Thorne 2d, of Islip, L. I., who is taking the lead in raising the funds. They have an option on another 531-foot strip comprising 16½ acres.

Option Expires Jan. 15

The option expires Jan. 15, and they hope to have the necessary \$26,500 by that time. While they are in the process of raising the funds a guard has been established in the forest to keep pre-holiday holly pickers from damaging the old trees.

Mr. Pough said that after the property is acquired the group will decide just how it should be preserved. One way, he said, would be to set up a private organization to provide guards and otherwise administer it so that the public could enjoy the place. Another plan would be to turn it over to the state park system.



SAYVILLE, N. Y., FRIDAY, DECEMBER 26, 1952

The Suffolk County News

Group Acquires the Sunken Forest in Move to Save Last of Old Holly Trees

Sunken Forest, a hidden valley of enchantment on the long, narrow sandbar known as Fire Island, has been acquired by a group of citizens interested in the preservation of some of America's oldest holly trees, it became known this week.

The recent purchase of this stretch of woodland a short distance east of Point O'Woods is expected to save the trees from the ravages of holly-pickers who have obtained their Christmas decorations for years by the simple process of sailing to the beach and taking whatever holly they can find.

So many branches have been stripped from so many holly trees along the length of the ocean barrier over the years that Sunken Forest is about the only spot which as yet has not been picked barren by discerning gatherers who wish only the greenest of leaves and the most red of berries.

Perhaps it has escaped because

it is a long walk from the nearest public boat landing, and is difficult to find, but eventually, it too, would fall prey to the yuletide season.

Richard H. Pough, curator of the department of conservation at the American Museum of Natural History, said on Monday that the group already has purchased a 400-foot stretch of the narrow island for \$25,000 and is now raising funds with the aim of acquiring 1,138 feet, containing thirty-six and a half acres.

The area is called the Sunken Forest because it lies hidden in a valley behind the sand dunes. The tops of the trees are kept clipped off by the winter winds. Although it is dominated by holly trees there are also sassafras, tupelo, pitch pine and wild cherry trees. The old holly trees have gnarled trunks and reach up to 35 feet from the forest floor.

The trees have the typical green, shiny leaves with sharp points and the red berries which are traditional at this time of the year. They represent fine specimens of the true American holly which reaches its maximum growth along the coast and some are believed over 200 years old. In many areas the American holly has become rare because its

(Continued on Page 4)

Sunken Forest

Continued from page 1

leaves and berries were picked and sold for Christmas decorations.

In describing the Sunken Forest, Dr. Robert Cushman Murphy, ornithologist, once wrote, "The long boles of the trees in the Sunken Forest make a picturesque and contrasting scene. Most striking are the yellowish-gray hollies — the last word in grotesquerie of stem and branch — twisted, gnarled and knotted, parting and fusing again like island olives. Cloven trunks are not uncommon. Some of the hollies have diameters of 10 to 12 inches, breast-high, and a height of 35 feet."

Mr. Pough said the move to preserve the area was started when Dr. Ernest Osborne, of Teachers College at Columbia University, Dr. Edward Smith, of Bayport, and Harvey Case, of Sayville, were attending an auction and purchased a 600-foot strip of the island. Dr. Osborne went to Mr. Pough with the idea of turning the area into some sort of public or quasi-public preserve. Mr. Pough interested The Nature Conservatory in the project. The Nature Conservatory is an organization interested in preserving such areas of natural interest.

A group of interested persons formed Wildlife Preserves, Inc., as a holding corporation for the land as they acquire it. The trustees of the corporation are Mr. Pough, Hobart M. Van Deusen, also of the museum, and Oakleigh Thorne 2nd, of Islip, who is taking the lead in raising the funds. They have an option on another 531-foot strip comprising 16½ acres.

The option expires on January 15th, and they hope to have the necessary \$26,500 by that time. While they are in the process of raising the funds a guard has been established in the forest to keep preholiday holly pickers from damaging the old trees.

Mr. Pough said that after the property is acquired the group will decide just how it should be preserved. One way, he said, would be to set up a private organization to provide guards and otherwise administer it so that the public could enjoy the place. Another plan would be to turn it over to the state park system.



Herald Tribune

Monday, December 29, 1952

Fire Island's Holly Trees

Holly trees are a comparatively rare sight around these parts largely because people intent upon Christmas decorations have been destroying them in the process of picking berries and leaves for seasonal decorations. But since holly is as beautiful upon the tree as in the midst of a Christmas wreath, it is good to know that an effort is being made to preserve a holly grove not far from New York. This unusual group of trees stands—of all places—on Fire Island, that narrow strip of land which barely rises out of the sea off Long Island. On sandy Fire Island, where almost any tree looks like a forest, a mere leaf is worthy of note, and the holly trees there are reputed to be among the oldest in America.

They are in a part of the island known as the Sunken Forest, a weirdly twisted collection of hollies, sassafras, tupelo, pitch pine and wild cherry trees. Sand dunes surround these trees and their top branches are conveniently clipped by the winds that whip through them. In the winter time, hardly any one is there to see them, but summer visitors, when they weary of the more artificial pleasures the island offers, can take great joy in their wilderness-like beauty. A group of private citizens, under the name of Wildlife Preserves, Inc., is now undertaking a campaign to preserve the Fire Island holly trees, and to this end has purchased a 400-foot stretch where they lie the thickest. Their objective is to amass a thirty-six-acre tract, which will keep most of the Sunken Forest intact. It is to be hoped they succeed, for these little areas of mystery and solitude along our coasts are too valuable to be overrun casually by the passing tides of men.

Wildlife Preserves has bought the tracts belonging to Mr. Case and Dr. Smith and has an option on the 200 feet belonging to Dr. Osborne, "who is cooperating with us 100 per cent," Mr. Thorne said. However, a 600-foot strip east of the Osborne property is for sale for \$26,500, and that is the parcel on which the organization's option will expire January 15. It is a part of the William F. Dobbins estate.

Mr. Thorne said that if the society can take over these two parcels it will have the principal section of the forest, although eventually, if funds are available and the lands haven't been sold in the meanwhile, his group would like to buy another 600 feet at each end.

The area has been of especial interest to horticulturalists because of the size of the trees, hollies and oaks more than a foot in diameter; the wide variety of plants, many of them usually associated with the mainland and inland, upland areas, and the

fact that such a variety is thriving so close to the ocean front.

THE ADVANCE, PATCHOGUE, N. Y.

THURSDAY, JANUARY 1, 1953

'Sunken Forest' Backers Hunting Funds for Option

New Group May Protect Natural Beauty Spot on Beach; Need \$20,000

The fight to save "Sunken Forest," a primeval beauty spot on Great South beach between Cherry Grove and Point O' Woods, is coming up against the expiration date of an option on January 15—and the campaign for funds is still about \$20,000 short of its goal.

Preservation of the natural beauty of the "forest," long an editorial goal of this newspaper, has been taken up by Nature Conservancy, a national organization dedicated to preservation of the beauties of nature imperilled by the march of "progress." An affiliate, Wildlife Preserves, Inc., has been formed to take title to the forest lands.

President of Wildlife Preserves is Robert Perkins of New Jersey. Richard H. Pough, curator of the

Continued on page 4, this section

'Sunken Forest'

Cont'd from page 1, this section

department of conservation of the American Museum of Natural History, is treasurer, and the trustees are Oakleigh Thorne, II, of Islip and Hobart M. Van Deusen, also of the museum staff.

Late in 1950 a 600-foot strip of the forest was sold at an auction to three men who bought it so as to keep the property out of the hands of real estate developers. They are Dr. Ernest Osborne of Teachers college, Columbia university, Harvey R. Case of Sayville and Dr. Edward Smith of Bayport.

NSL 8

SUNDAY NEWS, JANUARY 4, 1953—Sec. Two

Conservationists Race to Beat Jan. 15 Fund Deadline

Facing a deadline of Jan. 15 on the final extension of their option, a group of conservationists intensified its drive to raise \$26,500 by public subscriptions to help purchase the Fire Island Sunken Forest and save the legend-filled landmark from extinction.

The race against time is being conducted by Wildlife Preserves, Inc., which has already gathered \$6,000 toward the \$26,500 goal, according to Oakleigh Thorne 2d of Islip, one of the leaders in the fund-raising effort.

The Sunken Forest gets its name from the setting that conceals most of it from passing view. It lies behind the dunes of Long Island's barrier beach, east of Ocean Beach.

The secluded woodland paradise, a natural botanical garden said to contain the finest collection of American holly trees in the East, is over a third of a mile long and a few hundred feet wide.

Thorne explained that Wildlife Preserves, of which Robert Perkins of Tenafly, N. J., is president, was formed expressly to save the Sunken Forest and has already acquired a 400-foot section. The latter tract, extending from Great South Bay to the ocean, was purchased for \$25,000, raised by the group.

Has 3 Units.

Altogether, the forest consists of three units, Thorne said, adding that, besides the 400-foot tract already acquired, there is a 200-foot parcel and one that extends 600 feet.

The latter parcel, he asserted, belongs to the Dobbins estate and can be purchased for \$26,500. But, he adds, "We have already had three extensions on our option on this parcel and the final extension expires in less than two weeks."

The \$6,000 already raised toward the \$26,500, Thorne said, "has come mostly from foundations and private individuals who want to see the forest preserved, and we have had quite some help from the Point o' Woods Association on Fire Island. We figure that it is only through public response that we can possibly reach the goal by the deadline date."

Tract Held for Group.

The 200-foot parcel, he explained, was purchased at auction some time ago by Dr. Ernest Osborne of Columbia Teachers' College and two associates, who are interested in preserving the forest. Thorne said that the latter tract is being held available to Wildlife Preserves at the auction price of \$8,000.

Through the years, the Sunken Forest, parts of which are below sea level, has withstood the ravages of the holly-gatherers' ax, which has been the fate of most of the small holly in the open stretches of the 30-mile-long barrier beach.

After penetrating the outer angle of brush and briers, one descends a gentle slope to find that the underbrush is thinned and in many places the ground almost clear except for accumulations of fallen leaves and pine needles.

Among pine trees that rise more than 60 feet are many tall perridge, swamp maple, sassafras, red cedar and hundres of native American holly trees.

According to Howard F. LeCluse of Blue Point, who more than 12 years ago advocated preserving the forest, it contains almost every variety of native Long Island flora and many varieties of blooming wild flowers.

The Patchogue Advance

"LONG ISLAND'S LEADING NEWSPAPER"

THE ADVANCE, PATCHOGUE, N. Y., THURSDAY, JANUARY 8, 1953



SUNKEN FOREST on Great South beach, a hidden wilderness of holly, oak and a wide variety of other plants, many of them associated with inland and upland areas, is goal of a campaign being conducted by Wildlife Preserves, Inc. The

group must have \$25,000 by next Thursday if the area near Point o' Woods is to be kept undeveloped for nature lovers. Oakleigh Thorne, II, of Islip, said yesterday more than \$7,000 has been received. See editorial in this issue. —American Museum of Natural History Photo

A Plea for 'Sunken Forest'

Preservation of "Sunken Forest," that priceless natural wonderland a few miles east of Point o' Woods on Great South beach, has long been an editorial goal of this newspaper.

Thus it was with great delight that we learned that a group of nature-lovers, Wildlife Preserves, Inc., has been formed to secure title to this primeval forest which contains one of the few remaining holly groves in this section of the country as well as a weirdly twisted collection of other rare trees such as sassafras, tupelo, pitch pine and wild cherry trees.

But we were distressed to learn that the group is still about \$20,000 short of its goal as the expiration date of an option approaches on January 15.

So far the group has been successful. It has bought up two tracts of 200 feet each and has an option on a third strip of 200 feet which belongs to a man said by the group to be "co-operating with us 100 per cent."

However, there is another 600-foot stretch to the east which is now for sale for \$26,500 and that is the portion on which the January 15 deadline is set. To lose it would be to jeopardize the whole forest.

Much as we like to see Wildlife Preserves acquiring title to "Sunken Forest," we believe the real answer eventually lies in the addition of the Forest to the county park system, where it would remain safe for all time. But of course it may be impossible for the county to act in time to save the aforementioned strip and thus some quick contributions are vitally needed — NOW!

To our uninitiated readers, we might repeat that "Sunken Forest" is thus named because it lies hidden in a valley behind sand dunes. It has been of especial interest to horticulturists because of (1) the size of the trees — hollies and oaks more than a foot in diameter, (2) the wide variety of plants, many of them associated with mainland and inland, upland areas, and (3) the fact that such a variety is thriving so close to the ocean front.

Anyone interested in saving the Forest should get in touch immediately with Oakleigh Thorne, II, of Islip, one of the trustees of W. P. who has taken a major role in the fund-raising.

WEDNESDAY, JANUARY 14, 1953

THE ISLIP PRESS HERALD, ISLIP, N. Y.

Need More Money To Take Up Option On Sunken Forest

Best Specimens of Holly Would Be Preserved in Natural Surroundings

Although the committee seeking to preserve the Sunken Forest on Fire Island Beach east of Point O'Woods, is still short some thousands of dollars in its campaign to obtain purchase funds, Okleigh Thorne, 2nd, of Maple ave., Islip, is confident that the necessary money will be on hand to exercise the option held on the property. Mr. Thorne, heading the fund-raising effort placed the amount at \$19,000 last weekend. The option expires on Jan. 15. At that time \$12,000 additional was required.

Wild Life Preserves, Inc., is the unit which was formed to save the sunken forest from development by real estate operators. To date most of the donors are either Long Island or New York residents, who have seen the forest and marveled at its wonders on the outer reef.

The Sunken Forest, hidden behind the rolling dunes just east of Point O'Woods, has never been seen to the average summer vacationer on Fire Island. It is a thickly grown area that is dominated by fine specimens of old American holly, some of them with trunks ten and 12 inches in diameter and up to 30 feet tall. In addition, there are 150-year-old post oaks and pepperidge and sassafras trees.

Wildlife Preserves bought its first tract of the forest by outbidding a real estate development company. It now holds a 400-foot stretch from the Atlantic shore to Great South Bay. Under option is another 800-foot strip. The group hopes eventually to possess the entire forest area, which covers about 50 acres.

Robert Perkins of Tarrytown, N. J., is president of the conservation group. Richard H. Pough, curator of the conservation department of the American Museum of Natural History, is treasurer and Hobart M. Van Deusen, also of the museum, is secretary. Mr. Thorne is managing trustee.

Last-Minute Donor Saves Holly Trees

Plan to Preserve Fire Island Tract Gets 6 Mos. Grace

An anonymous donor has come to the rescue of a project to preserve a Fire Island holly tree grove, just as the option on the tract, held by a conservation group, was about to expire.

Richard H. Pough, chairman of the department of conservation at the American Museum of Natural History and president of Nature Conservancy, said the donor had bought the sixteen-acre tract, containing some of the oldest holly trees in America, for \$26,500.

The option on the tract, which was to have expired yesterday, was renewed by the new owner in favor of Wildlife Preserves, Inc., for a period of six months. Wildlife Preserves is a holding corporation fostered by Nature Conservancy. It holds title to another 400-foot stretch of Fire Island beach purchased earlier for \$25,000 as part of the conservation project.

The holly trees, some of them

hundreds of years old, dominate the Sunken Forest, a stretch of woodland east of Point O'Woods on Fire Island, a thirty-mile sand spit off the south shore of Long Island, accessible only by boat. Nature Conservancy, an organization interested in setting aside unique bits of landscape for conservation, became interested in the project as a possible public preserve.

After the purchase of the first twenty acres of the tract, a campaign was begun to raise funds to purchase the remainder. Only \$8,000 had been raised by the time the option expired yesterday. Mr. Pough said that with the six months of grace provided by the new option, the group has "every expectation that we can raise the money" to purchase the property.

Mr. Thorne, a trustee of Wildlife Preserves, is studying at Yale for his master's degree. He received his B.S. in 1951, and since then has been highly interested in conserving the wonders of the Sunken Forest. He is a member of the Yale Conservation School which is aiding the task. He is working his master's degree on research work he is doing in conservation.

When Wildlife Preserves, Inc., takes over all the land, its preservation will be assured. Steps have been taken to prevent vandalism. A guard will be on duty, the property will be patrolled, and later a guide will be provided for the visitors who will want to see the wonders of the beauty spot on the beach.



TUESDAY, JANUARY 27, 1953
NEW YORK HERALD TRIBUNE

Conservation Officials Will Be Present At Dunlop Fete Tonight for Sunken Forest

Meeting Will Plan Preservation of The Sunken Forest

A Reception Will Be Given Tonight at Home of Mr. and Mrs. James Dunlop

A reception will be given by Mr. and Mrs. James N. Dunlop, chairman of the Sunken Forest Committee, this evening at 8 o'clock at their home, 535 Park Ave. Guests of honor will be Dr. Robert Cushman Murphy, chairman of the Department of Birds, American Museum of Natural History; Mr. Richard H. Pough, curator of conservation at the same museum and president of the Nature Conservancy, Inc., of Washington; Miss Rachel L. Carson, author of "The Sea Around Us"; Dr. Ernest Osborne, of Teachers College, and Mr. Oakleigh Thorne 2d, a trustee of Wildlife Preserves, Inc.

At the reception plans will be discussed for preserving and keeping intact the unique area known as the Sunken Forest, which is located just east of Point o' Woods on Fire Island Beach, N. Y. The forest, which has developed through centuries under the protection of the high dunes on the ocean side, is a primeval tract dense with large holly trees, tupelo, sassafras, post oak and others. As a large part of the forest is under several ownerships with the danger of it being sold and cleared for building lots, the committee is seeking contributions for preserving the property.

Donations to save the Sunken Forest are being made to the Nature Conservancy, Inc., and title to the property acquired is being taken by Wildlife Preserves, Inc., both exempt corporations. This insures that gifts will be deductible from Federal income tax and that there will be no real-estate taxes against the forest.

Among those expected to be present at the reception this evening at the Dunlop home are Miss Mabel Choate, Mr. and Mrs. Ward Melville, Mr. William C. Foster, Deputy Secretary of Defense under Secretary Lovett, and Mrs. Foster; Mr. and Mrs. Goldthwaite H. Dorr, Mr. S. Spencer Scott, president of the Point o' Woods Association, and Mrs. Scott; Dr. and Mrs. Albert VanderVeer, Dr. and Mrs. Irving S. Wright, Mrs. Hardin Orvis, Mr. and Mrs. Edwin S. Webster Jr., Mr. and Mrs. Louis Skidmore, Mr. and Mrs. Robert O'Hara, New Jersey State Senator David Van Alstyne and Mrs. Van Alstyne, Mr. and Mrs. John H. Flagg and Mr. Frank Lowry.

Mr. and Mrs. James N. Dunlop of New York and Driftwood, Point O' Woods, L. I., will give a reception tonight in their home at 535 Park Avenue in behalf of the conservation of the Sunken Forest in Fire Island Beach, L. I. Mr. Dunlop is chairman of the Sunken Forest Committee, which is seeking to preserve this miniature wilderness.

The guests of honor will be Dr. Robert Cushman Murphy, chairman of the Department of Birds of the American Museum of Natural History; Richard H. Pough, Curator of Conservation at the same museum and president of the Nature Conservancy, Inc., of Washington; Miss Rachel L. Carson, author; Dr. Ernest Osborne of Teachers College, Columbia University, and Oakleigh Thorne 2d, trustee of Wildlife Preserves, Inc.

Developed through the centuries and sheltered by high dunes on the ocean side, the Sunken Forest is an unusual area of primeval woodland. It is situated east of Point O' Woods. The committee is trying to prevent building developers from destroying the tract, and

hopes to preserve it for future scientific study.

Among the many persons taking an active interest in the project are Mr. and Mrs. Ward Melville, Miss Mabel Choate, Mr. and Mrs. Goldthwaite H. Dorr, Mr. and Mrs. Edwin S. Webster Jr., S. Spencer Scott, president of the Point O' Woods Association, and Mrs. Scott; Dr. and Mrs. Irving S. Wright, Mr. and Mrs. John H. Flagg, Dr. and Mrs. Albert VanderVeer, Mrs. Hardin Orvis and Mr. and Mrs. Louis Skidmore.

NEW YORK HERALD TRIBUNE,
SUNDAY, APRIL 5, 1953

Fire Island Preserve To Be Aided at Dinner

In support of the effort to preserve The Sunken Forest situated on Fire Island Beach, just east of Point O' Woods, L. I., a dinner will be given next Tuesday in honor of Miss Rachel L. Carson, author of "The Sea Around Us," by Mr. and Mrs. James N. Dunlop at their home, 535 Park Ave., New York. The other guests will be Mr. Edwin Way Teale, author of "North With the Spring"; Dr. Robert Cushman Murphy, chairman of the Department of Birds of the American Museum of Natural History, and Mrs. Murphy; Mr. Richard H. Pough, curator of conservation at the museum and president of the Nature Conservancy, Inc., of Washington, and Mrs. Pough; Mr. John Hopkinson Baker, president of National Audubon Society, and Mrs. Baker; Mr. and Mrs. Ward Melville, Mr. Oakleigh Thorne 2d and Mr. John Brooks, author of "The Big Wheel."

There will be a meeting following the dinner at which others interested in conservation will be present. A chief topic for consideration will be the status of the campaign to save The Sunken Forest. Great interest has already been stirred up toward preserving the fine holly trees of this primeval woodland for future generations, and it is hoped that the meeting will be instrumental in exciting more widespread enthusiasm for the project.

THE SUNKEN FOREST

*by Oakleigh Thorne, II. '47

Just east of Point O' Woods on Fire Island Beach, N. Y., lies a unique area known as the "Sunken Forest." Here, due to the protection of high dunes, especially on the Atlantic Ocean side, a "climax" forest has developed. This means that the trees of the area are "holding their own" against any new kinds that might try to gain a foothold. The dominant climax tree in the Sunken Forest is the American Holly (*Ilex opaca*). Present, besides young and medium aged hollies, are holly trees over 100 years old! One is amazed that such a forest could exist on an island that is nothing more than a long and narrow barrier beach, the sand having been originally deposited there by the action of the ocean tides and waves. Many thousands of years were required for the evolution of such a forest on what was once bare sand. (Fire Island Beach runs parallel to the south shore of Long Island, and separates the Great South Bay from the Atlantic Ocean.)

The Sunken Forest has been a source of wonder, study, and aesthetic recreation to the scientist and the layman alike. For example, Dr. Robert Cushman Murphy of The American Museum of Natural History has recently published a science guide to the area, and the author* is, at present, carrying out an ecological study of the Forest for his Master of Science degree at Yale. Besides this, many groups of interested laymen make frequent field trips to the place.

In addition to American holly, one finds pepperidge (tupelo), sassafras, post oak, red oak, muscledwood, and pitch pine growing in the Sunken Forest. Along the Bay edge, shadblow is common, and on the tops of the protecting dunes, beach plum is often found with an underlying carpet of bearberry. The latter helps to stabilize the sand dune. In the Forest proper, a dense tangle of catbriar provides wonderful sanctuary for birds, many species of which are common to the mainland. This area is one of the northernmost habitats of the Carolina Wren.

With the real estate development boom of recent years, the Sunken Forest has come very close to destruction. In fact, the heart of the Forest would have been bulldozed down by now if it had not been for Dr. Ernest Osborne of Teachers College at Columbia who, with two associates, outbid a developer for this section.

Finally, The Nature Conservancy took an active interest in the Sunken Forest. This non-profit organization is dedicated to the task of preserving as many of the few remaining natural "wilderness" areas in the U. S. as it can—before they are destroyed by man. The author, an officer of this group, spent the past summer determining the ownership of the various sections of the Forest, negotiating options, and is now raising funds for the project. A grant of \$15,000 from the Mellon family's Old Dominion Foundation has helped pur-

chase one section of the Forest. About one-fifth of the job is completed so far.

It is hoped that more and more people in this country will realize the importance of these natural areas before it is too late. Besides their great recreational and aesthetic values, immeasurable in dollars and cents, they serve as biological reservoirs, what you might call experimental "control" areas. Scientific research in these spots can shed great light on the problems of Man-disturbed areas. We can talk at great length about the values of these wilderness regions, whether they be large or small. Mere talk, however, will not save them. We must act now, or else there will be nothing left to save.

THE SILD, Millbrook, N.Y. May 23

THE NEW YORK TIMES
SUNDAY, APRIL 5, 1953.

DINNER HERE TO SPUR SUNKEN FOREST DRIVE

In behalf of the campaign for the preservation of the Sunken Forest on Fire Island Beach, just east of Point O' Woods, L. I., Mr. and Mrs. James N. Dunlop will give a dinner, followed by a reception and meeting, on Tuesday night in their home, 535 Park Avenue. The guest of honor will be Miss Rachel L. Carson, author of "The Sea Around Us."

Other special guests will include Edwin Way Teale, author; Dr. Robert Cushman Murphy, chairman of the Department of Birds of the American Museum of Natural History, and Mrs. Murphy; Richard H. Pough, Curator of Conservation at the same museum and president of the Nature Conservancy of Washington, and Mrs. Paugh; John Hopkinson Baker, president of the National Audubon Society, and Mrs. Baker; Mr. and Mrs. Ward Melville; Oakleigh Thorne 2d and John Brooks, author.

It is expected that more widespread interest will ensue for the preservation of the Sunken Forest with its holly trees hundreds of years old. For scientists have said that only the protection of the high dunes on the ocean side enabled the miniature wilderness to evolve on what was formerly bare sand.

Mr. Dunlop, chairman of the Sunken Forest Committee of the Nature Conservancy, and members of the committee are striving to secure the area from the encroachment of building developers.

THE NEW YORK TIMES
TUESDAY, APRIL 28, 1953.

SUNKEN FOREST DRIVE ON

Garden Clubs Seeking to Avert
Sale of Fire Island Woodland

More than one-half of the eighty-five clubs comprising the second district of the Federated Garden Clubs of New York State are contributing to the district's effort to save Sunken Forest, a fifty-acre woodland tract on Fire Island, Mrs. C. Turner Richardson of Douglaston, Queens, said yesterday.

Mrs. Richardson, conservation chairman of the second district, reported on the work of the Long Island clubs to 300 members who attended the semi-annual meeting of the district, which was held in the auditorium of the Brooklyn Botanic Garden.

Mrs. Richardson announced also that Oakleigh Thorne 2d of Islip, L. I., had made a color film of Sunken Forest that will be made available to the clubs and other groups interested in keeping the forest. Mr. Thorne is treasurer of Nature Conservancy, a national organization devoted to preserving native wildlife areas, which also is raising money to help purchase the forest.