

GMF
107 OR 91

An Ecological Inventory
of
Weir Nature Preserve
Wilton
Connecticut

by

Jeffrey C. Peterson
Elizabeth A. Mahoney
Earl W. Phillips, Jr.
Lisa I. Klein
Arnold Z. Alpert
Marc A. Breslav

edited by
Arthur B. Weissman

September 1976

*located
NEXT to
WEFA NHS
→ species in NP (species
listed as
prob. present
(unless has
other ref.)*

*all in NR&BID 35850
NP species - 331 spp*

This report was researched and written under the auspices of the Student Internship Program, sponsored by the Connecticut Chapter of The Nature Conservancy. The Program was made possible through grants and contributions from the following sources:

Aetna Life and Casualty Company
Cornell University
Essex Women's Club
The Hunter Grubb Foundation
George A. Long and Grace L. Long Foundation
Gerrish H. Milliken Foundation
Northeast Utilities
Mrs. P. E. Flehn
Anne S. Richardson Fund
The David Sargent Family
Stauffer Chemical Company
University of Connecticut
Vassar College
Weir Nature Preserve Management Committee
Wesleyan University
Yale University

Table of Contents

I.	Introduction	1
II.	History	2
III.	Physical Environment	3
	Geology	3
	Soils	4
	Water	6
IV.	Vegetation and Flora	9
	Methodology	9
	General Description	9
	Description of Plant Communities	10
V.	Fauna	17
VI.	Present Use and Surrounding Activity	18
VII.	Management Considerations	19
VIII.	Conclusion	20

Appendices

A.	Species Lists	21
	Flora	21
	Fauna	28
B.	List of Maps Accompanying Report	29
C.	References	30

Figures

1.	Drainage on Preserve	7
2.	Idealized Toposequence of Plant Communities at Weir Nature Preserve	11

Tables

1.	Results of Water Quality Tests	8
2.	Moisture Regime Scale Used in Field Work at Weir Nature Preserve	12

I. INTRODUCTION

Weir Nature Preserve, owned by The Nature Conservancy of Connecticut, is located in Wilton, Connecticut. During the summer of 1976, an ecological inventory was conducted on the preserve as part of the Student Internship Program, sponsored by the Connecticut Chapter of The Nature Conservancy. This report and the accompanying maps present the results of the inventory.

Weir Nature Preserve occupies some 37 acres near the Ridgefield town line (USGS Topographic Map, 7.5 minute series, Bethel Quadrangle, 1970, latitude $41^{\circ}15'30''$ north, longitude $73^{\circ}27'30''$ west). The preserve is accessible from both Pelham Lane and Nod Hill Road, the former bounding the preserve on the north and the latter on the east. Mrs. Cora Weir Burlingham donated the property in 1969, retaining ten acres on which the house and barns are located. The studies conducted on this natural area were extended in a southward direction into adjacent properties.

Weir Nature Preserve is in a well-elevated area considering its proximity to the shore. The area was well scoured during glaciation and the soil depth is shallow except in swamps. The vegetation varies from xeric to very hydric. No truly perennial streams occur on the preserve or adjoining properties, although many intermittent streams and drainages are present.

The preserve is located in the Southwestern Hills climatic region of Connecticut. This climate is typified by warm, humid summers and cold winters, the severity of which are dampened by the proximity to Long Island Sound. Interpolated from data assembled by the State Geological and Natural History Survey (Brumbach, 1965), the preserve has a mean annual temperature of about 50°F . The mean annual precipitation and mean annual snowfall are 50 and 40 inches, respectively. The average date of the first subfreezing temperature is October 5, with the last subfreezing temperature occurring about May 5. This leaves an average frost-free season of 155 days. This area is frequently struck by storms and twisters of hurricane force, as evidenced by the fallen trees on the preserve.

The inventory was conducted by six students and a soil scientist. Jeffrey Peterson, an ecologist at the University of Connecticut under Professor Damman, studied and mapped the vegetation from June to August. Elizabeth Mahoney and Earl Phillips, geologists from Wesleyan University under Professor de Boer, studied and mapped the surficial and bedrock geology in June. Lisa Klein, a human ecologist from Vassar College under Professor Vromen, mapped surrounding property ownership, studied the history of the area, and reported its present use and surrounding activities. Arnold Alpert, an environmental chemist and geohydrologist from Wesleyan University under Professor Horne, studied water quality and drainage patterns, while Marc Breslav, an ornithologist from Cornell University under Professor Cade, studied the avifauna. Barrie Wolf from the Soil Conservation Service surveyed and mapped the soils on and adjacent to the preserve. The Student Internship Program was coordinated and directed by Arthur Weissman and Charles Scott of The Nature Conservancy.

II. HISTORY

According to the donor, Mrs. Cora Weir Burlingham, the property now comprising Weir Nature Preserve had been farmed, but not as a business for marketing. It was managed as a family farm for sustenance. The land was very rocky, as evidenced by the abundance of stone walls throughout the preserve. They seem to be everywhere and at every angle. It is assumed that Joseph Knoche, a German immigrant, built the stone walls in this area. The walls were perhaps built around the immense boulders on the land. The family pastured cattle and cultivated a few fields; these fields are still evident, as they have been kept clear by the management committee. The woods were not cleared for farming, only cut for firewood. Game hunting was popular for sport and for food: the area was abundant with quail, partridge, and deer.

Near the Weir property, farther south on Nod Hill Road, is an area that used to be called the Rock House Woods. This is on the property of Mrs. Eugenia Leary Slaughter, and it is supposed that Indians camped in the natural caves formed by the rock ledges. These inhabitants were from the Tani-teke tribe of the Algonkin Woodland Indians. It is believed that the Indians of Wilton were remnants of other tribes driven here by the settlers, since artifacts found were made of a stone native to other areas in New England.

It is generally assumed that Wilton was plowed and farmed at least once. Settlers faced exceptionally rocky terrain, which discouraged any real commitment to farming for marketing purposes. Thus, many mills and industries developed and with the introduction of the railroad, competitive cash crops diminished totally. Wilton residents could not compete with the developing agriculture of the Western frontier. The railroad brought commuters and summer residents, causing Wilton to become a village of different purposes for its residents.

Wilton did host a variety of mills. Other than the usual grist and saw-mills, there were many cider mills, flax mills for the fulling and carding of wool, and two satinet mills which produced a low grade weave of satin. After the Civil War, agriculture and industry declined. Only a few herds of cattle remained. Presently, only one apple orchard still exists in operation.

III. PHYSICAL ENVIRONMENT

Geology

Weir Nature Preserve is located in the Western Connecticut Metamorphic Highlands, a region of igneous and middle- to high-rank metamorphic units, bounded on the east by the Triassic rocks of the Connecticut Valley and on the west by the Lower Paleozoic rocks of the Hudson River Valley. Although a bedrock map of the Bethel quadrangle, in which the preserve is located, has not yet been constructed by the USGS, a preliminary geological map of Connecticut published by the USGS in 1956 indicates that the bedrock of the preserve is part of the Hartland formation. This formation consists of various types of metamorphic rocks, the principal minerals being muscovite, biotite, quartz, and subordinate amounts of feldspar. Field observation on Weir Preserve shows that the bedrock is primarily a biotite-muscovite-quartz-feldspar gneiss with the proportions of biotite and muscovite varying greatly.

Although the bedrock of the Weir Preserve is considered to be one unit when mapped on a large scale (the geologic map of the state is on a scale of 1:253,440), for this study's purposes it has been subdivided into three units at a scale of 1:2400. The criteria used to distinguish the units is the proportion and type(s) of mica contained in the rock, the three subdivisions being high-biotite gneiss, double-mica (biotite and muscovite) gneiss, and high-muscovite gneiss. The texture of the gneisses ranges from coarse-granular to fine-sugary, the coarser specimens tending to be those with the higher percentages of mica. The bedrock in the preserve is characterized by numerous intrusions of pegmatite containing varying amounts of quartz.

The surficial geology of Connecticut, and of Weir Preserve in particular, can be considered synonymous with the glacial geology of the area. During the past two to three million years, a geologic period known as the Pleistocene Epoch, Connecticut was overrun by glaciers at least twice, as indicated by surficial geological evidence throughout New England.

Examination of the topography reveals that the major hills, valleys, and ridges were formed prior to glaciation. The effect of the glaciers on the landscape was manifested largely through the direct deposition of till by glacial ice. Till, a poorly sorted unstratified mixture of rock fragments of all sizes, forms an almost continuous cover of the landscape, being absent only where bedrock is exposed. A second obvious effect of glaciation is the occurrence of surface boulders, most of which have the same lithology as the underlying bedrock, indicating that they were not transported any great distance.

Weir Preserve is characterized by a series of open fields in the northeast corner of the preserve; two prominent north-south ridges, one located in the center portion of the preserve and one along the western boundary; and a swampy area which lies between the ridges.

The principal surficial features present on the preserve are till, which covers almost the entire preserve; glacial boulders, most observable in the fields; rock outcroppings; and talus, found on the relatively steep slopes in the northwest part of the preserve.

What is most significant about the glacial features in this area is the fact that the land has been very much "scoured out", that is, the bedrock is covered by only a very thin layer of till. There are outcrops in the open fields, as a matter of fact, which are actually flush with the ground. The covering of till rarely reaches more than two feet in depth.

The two types of loose boulders on the preserve, glacial boulders and talus, are quite different in appearance, having been formed by distinctly different processes. The glacially formed boulders have a rounded appearance, since they were transported over distances and scraped by glacial ice. They are scattered throughout the preserve. The talus, on the other hand, is composed of angular fragments which were weathered mechanically from the bedrock and then transported by gravity for a short distance down the slopes of the ridge, forming piles of debris.

* * * *

The following are geologic features of special interest, whose location is indicated on the Use/Special Features Map:

1. There is a large outcrop at this site south of the preserve. It is located approximately 75 feet from Nod Hill Road and consists of a sheer drop of about 20 feet facing west. The bedrock is a muscovite-rich gneiss.
2. An excellent example of a pegmatite intrusion is located at this spot in the southeast corner of the preserve. Because of the slow cooling of the pegmatite, the crystals of quartz and feldspar were able to grow quite large.
3. For the hiker who does not wish to stray far from the beaten track, this dirt road leads to an exemplary gneissic outcrop which has been intruded by pegmatitic veins which were subsequently folded.
4. This feature is for the hiker who enjoys plowing through beautiful, thick, gnarled mountain laurel. Here a grand smooth 40-foot rock slope may be seen, as well as a 30-foot cliff consisting of a muscovite-rich gneiss. An additional feature is the presence of shear sets, which are fractures forming an "X" with a 60-degree angle separating them.
5. This site is located just off the southwestern corner of the preserve and presents a scenic view of the area to the east. In addition, the outcrop contains an unusual boudin of gneiss which appears to have been squeezed around an intrusion of pegmatite, rather than the other way around.
6. This location presents a beautiful view of the swamp. There is a drop of about 25 feet, and a talus slope on much of the surrounding slope. Fractures in this area are north-south.

Soils

Weir Nature Preserve is an area with rugged topography and a relatively high water table. The area is marked by excessively to well-drained ridges and slopes running predominantly north-south. These are formed by the Hollis-Charlton and Charlton soils. In the low-lying areas separating the slopes

are the Sutton and Leicester, Ridgebury, and Whitman soils, as well as both the shallow and deep mucks. The low-lying soils lie predominantly in the range from moderately to poorly drained. The majority of the flow and drainage appears to be in a south-south-westerly direction. Due to this drainage pattern, there is a greater concentration of wet areas in the more southern section of the mapped area.

Flanking much of the upper ridge areas is the Hollis-Charlton rocky complex with a slope ranging from 3 to 15 percent. This mapping unit is composed of gently-sloping and sloping soils, including Hollis, Charlton, and an unnamed soil. The soil ranges from less than 20 inches up to 40 inches in depth. In some places there are narrow drainageways with poorly drained soils. Bedrock outcrops range from few to very numerous, and stoniness ranges from few stones to extremely stony. The Hollis soil is somewhat excessively drained, friable to very friable fine sandy loam less than 20 inches deep to bedrock. The well-drained, unnamed soil is fine sandy loam. The well-drained Charlton soil developed in glacial till. Surface soil and subsoil texture to a depth of 20 to 30 inches is fine sandy loam. The underlying material is sandy loam or fine sandy loam with numerous rock fragments. All of these soils are moderately permeable, but drainage is restricted by the underlying bedrock.

Covering the majority of the ridges, as well as their flanks, is the Hollis extremely rocky fine sandy loam with 3 to 35 percent slopes. This shallow soil is less than 20 inches to the underlying bedrock and is somewhat excessively drained. Bedrock outcrops are numerous, and surface stones and boulders are present in most places. This soil is very friable fine sandy loam and is moderately permeable above the bedrock. The gently sloping to steep topography is mostly irregular.

On both the northwestern and central ridges of the preserve are small inclusions of the Rockland unit. This unit consists of rocky soils where the exposed bedrock occupies more than 50 percent of the area. Soils that are shallow to bedrock occur between and around the bedrock exposures. This mapping unit generally occurs on moderately steep to steep uplands having 15 to 35 percent slopes.

On the lower section of the ridges the soils are Charlton stony and very stony fine sandy loams with 3 to 15 percent slopes. These sloping to gently sloping, well-drained, upland soils developed in very friable to firm glacial till. They have from 0.1 to more than 3 percent of the surface covered with stones or boulders. Surface soil and subsoil texture to a depth of 20 to 30 inches is fine sandy loam with some small, angular rock fragments. The underlying material is sandy loam or fine sandy loam with many gravel-size rock fragments and stones in places. These soils are moderately permeable, but slowly permeable layers may be present below 36 inches. Charlton soils are members of a drainage sequence that includes the moderately well drained Sutton and poorly drained Leicester soils.

Located in lowlying areas, at the base of slopes, and in areas bordering swamps, is Sutton fine sandy loam with a slope of 0 to 8 percent. This is a moderately well drained upland soil developed in very friable to firm glacial till. Surface soil and subsoil texture to a depth of 20 to 30 inches is fine sandy loam with some small, angular rock fragments. The underlying material is sandy loam or fine sandy loam with many stones and gravel-size rock fragments in places. The lower subsoil is mottled, indicating water-

logging. A fluctuating water table is sometimes within 15 to 20 inches of the surface during winter and early spring. This soil is moderately permeable throughout, but slowly permeable layers may be present below 36 inches in places. Stones and boulders have been removed from the surface of this soil. In the southwestern section of the mapped area, the Sutton soil becomes visibly more stony and is mapped as a separate unit. Stones and boulders cover more than 3 percent of the surface.

Bordering most of the streams, ponds, and swamps in this area are concentrations of the Leicester, Ridgebury, and Whitman very stony fine sandy loams. This mapping unit includes poorly and very poorly drained soils which have a water table at or near the surface from fall to spring and after heavy rains during the summer.

The two northern-most swamps, as well as the northern borders of the two large southern swamps, are covered by a shallow muck. This mapping unit consists of organic deposits of muck less than 40 inches thick over mineral soil material. The water table is at or near the surface most of the year. It is often flooded during the winter and after rainy periods.

The two large southern swamps are composed chiefly of deep muck. This unit consists of organic deposits of muck thicker than 40 inches and generally more than 51 inches. These deposits are the remains of reeds and sedges, sphagnum moss, or trees and shrubs which grow in these wet areas. Muck is a decomposed organic material in which the plant from which it is derived can no longer be identified. The water table is usually at or near the surface and flooding may occur during the winter or after heavy rains.

Water

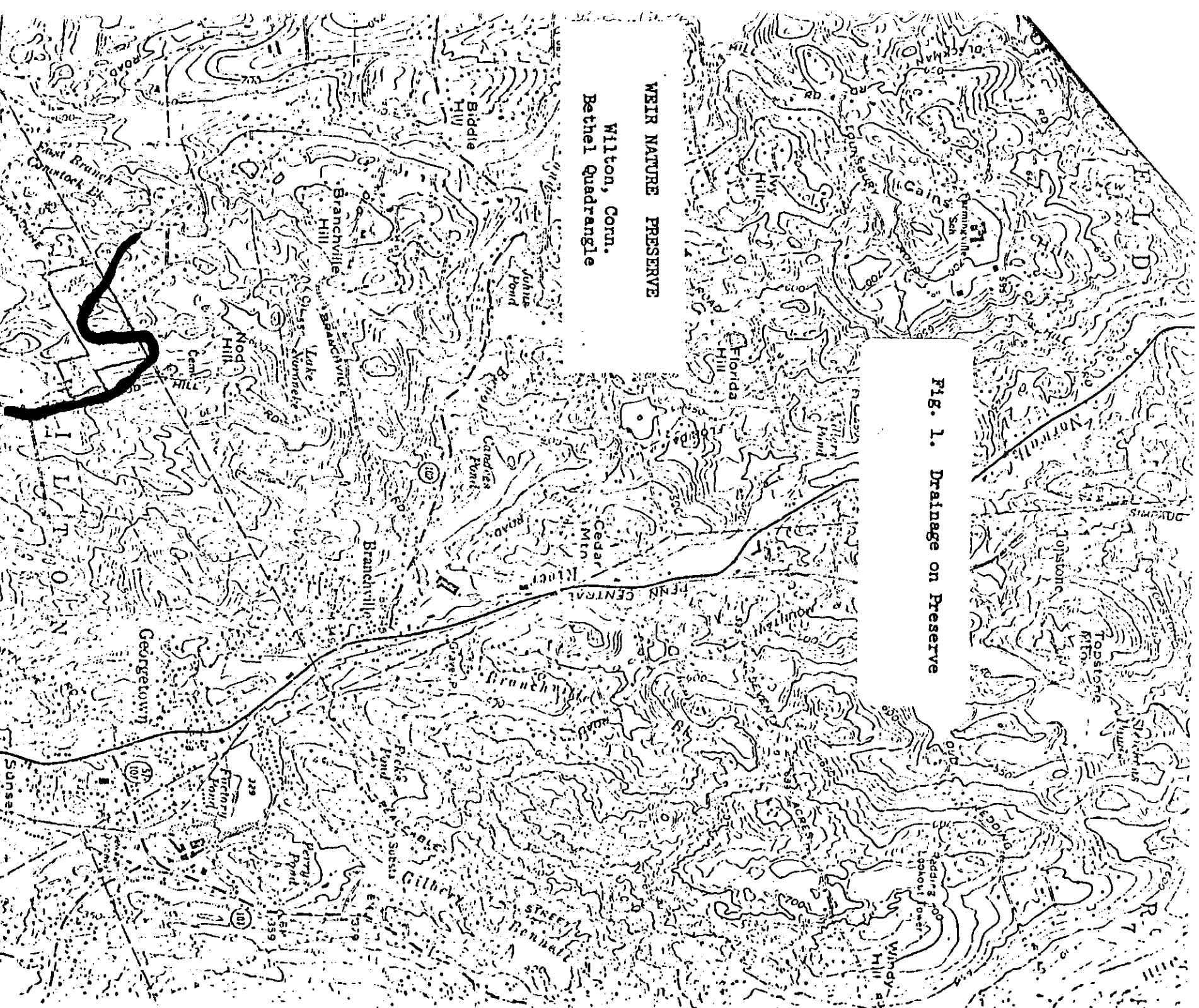
Weir Nature Preserve, while dominated by low, swampy terrain, has no major bodies of standing or running water. Under the control of the water table and the amount of rainfall, run-off flows into two watershed areas, indicated by the drainage divide in Fig. 1. Drainage in the central section of the preserve flows north into Cooper Pond Brook via Lake Noreneke and Candeas Pond. At Branchville, Cooper Pond Brook empties into Norwalk River, which flows to Long Island Sound.

The eastern and western sections of the preserve drain via swampy regions into the east branch of Comstock Brook. This flows into Comstock Brook, which empties into Norwalk River at Wilton. Within the preserve, there are two springs and several intermittent drainage channels. There are no aquifers in the preserve area.

Chemical water quality tests were made at the preserve in early July and again in mid-August at the site indicated on the Use/Special Features Map. The brook that runs through the preserve was nearly dry and was not tested. The brook that runs between two swampy regions, a little south of due west of the end of Serendipity Lane, was tested for nitrate, phosphate, dissolved oxygen, pH, and suspended sediment. The water is very dark, carrying a large amount of sediment. Dissolved oxygen is slightly low though not unsatisfactory. Neither nitrate nor phosphate was detected. The substantial acidity of the water is probably due to biological activity and would fluctuate with time of day and season. While the water is not particularly appealing, this type of quality is to be expected in a low, swampy region.

FIG. 1. Drainage on Preserve

WEIR NATURE PRESERVE
Wilton, Conn.
Bethel Quadrangle



drainage divide
27 30"
SCALE 1:24000
INCRWALK NORTH CANNON 2.5 MI. 432 WEST

Table 1. Results of Water Quality Tests

Water Body	Date	Loca- tion	Point of Coll.	Time	Sensual observ- ations	Weather	Air temp °C	Water temp °C	Dis- solved oxygen (ppm)	%Satu- ration with oxygen	Nit- rate	Phos- phate	Susp. sedim. mg/l
Brook running between swamps, south of preserve border	7/8/76	Just up- stream of cliff face	Small pool, be- tween small cas- cade	4:45PM	Movement slow. Water very dark.	Cloudy	20.8	18.0	*	*	Negli- gible	Negli- gible	6.05 1.6
	8/18/76			12:30PM	Water very dark.	Sunny	26.0	17.4	6.2	65	"	"	4.5 386

* Test not made.

IV. VEGETATION AND FLORA

Methodology

Investigation of the Weir Nature Preserve began with a reconnaissance of the area. Insight gained from this activity aided in the positioning of transects and quadrats. Selection of sites for quadrats was further determined by the uniformity of floristic composition and physiognomy and, in turn, the uniformity of the physical environment. The standard plot size was 20 x 20 meters; these dimensions were adjusted in each case to attain the greatest uniformity within the plot's boundaries.

Vegetation was described in each plot as follows. Four structural layers were recognized: tree, shrub, herb, and moss. Abundance and/or cover percentage and sociability were recorded with methods provided by Braun-Blanquet (Mueller-Dombois and Ellenberg, 1974).

These data were then analyzed and sorted into communities. Data compiled from other areas in the state and from other studies, including Bruce Kershner's master's thesis at Pond Mountain in Kent (1975), and unpublished tables made available by Dr. Damman, all aided in the construction of the communities. Consultations with Dr. Damman and Ronald Rozsa, both from the University of Connecticut, proved invaluable.

A floristic key which groups different species with the same ecological tolerances was used in mapping the preserve. By comparing the vegetation present in a given area with the floristic key, the area's community type was determined. Some plant community names are after Kershner (1975) and reflect a characteristic species which is usually common in that community. Thus, in the Maple-leaved Viburnum Community this shrub is usually dominant in its structural layer. Past uses of the land, especially agricultural (including grazing), may tend to vary the character of a community.

Initially, plant communities were mapped following parallel compass lines. The density of the mountain laurel and the entanglements of the swamps and blowdowns led to a change in technique. Mapping was done by starting from known points and radiating outward. Stone walls visible on aerial photographs proved helpful.

Vascular plant species were given according to Gray's Manual of Botany (Fernald, 1950). Mosses and liverworts were given according to The Mosses and Liverworts (Conard, 1956). Common names are used in the body of this report where established.

General Description

The vegetation of Connecticut has particular interest because it is in a region of transition between southern and northern types.

Weir Nature Preserve lies in the Central Hardwoods Zone, according to the classification of Egler and Niering (1966). Central hardwoods include oaks, hickories, red maple, tulip tree, and sassafras as well as others.

This zone is delineated from the more northern Transition Hardwoods, White Pine Vegetation Zone by the invasion of old fields by red cedar instead of white pine.

According to Dowhan (1976, in publication at time of writing), Weir lies in the Southwest Hills Eco-region. He considers the major forest vegetation to be central hardwoods, which include hemlock, white, red, black, scarlet, and chestnut oaks, hickories, tulip tree, black birch, and white ash. The absence of white pine is again considered significant. Dowhan remarks that the flora and fauna of this region have southeastern Piedmont and midwestern affinities.

Description of Plant Communities

Eleven communities were recognized and mapped on Weir Nature Preserve. They are all described individually later in this section, but first a more general grouping is described. All the communities can be considered to belong to either an upland or lowland type. On this preserve, four communities belong to the upland group and seven to the lowland group (see Fig. 2).

The upland group can further be divided into exposed rock summits and upland forests. One exposed rock community and three upland forests were mapped. Likewise, the lowland communities can be separated into two groups, the moist forests and wetlands. Four moist forests and three wetlands were mapped. In addition, mowed or recently abandoned fields were separated out. This less technical grouping of communities may be useful in implementing management policies, because in general the communities in each group require similar management.

1. Exposed Rock - Moss - Sedge Complex

This is the only exposed summit group mapped in this report. A number of smaller communities could have been constructed in this area, but the close proximity of these smaller groups, their similarity in moisture regime, and their small size caused them to be grouped together. Moisture regime varied from 0 to 9 (see Table 2) and soil occurred in pockets up to about four inches deep. Tree cover was open and consisted of red cedar, chestnut oak, and black oak primarily; the canopy was poorly developed. Shrubs included ground juniper and blackberry. Herbs included grasses such as little bluestem, poverty grass, and a sedge (Carex pensylvanica). Occasionally pink corydalis, rattlesnake-weed, and columbine were found. Mosses were represented by Polytrichum sp. and Leucobryum glaucum, as well as others. Many lichens, including Cladonia spp., were present.

This community is found near the southwest corner of the preserve. This area is very exposed and has suffered blowdowns from storms in recent years. Even though the plants here are adapted to survive extreme heat and dryness, they are fragile and cannot sustain any great abuse. Loosened soils are easily washed away and slow-growing lichen and moss carpets destroyed.

2. Huckleberry Community

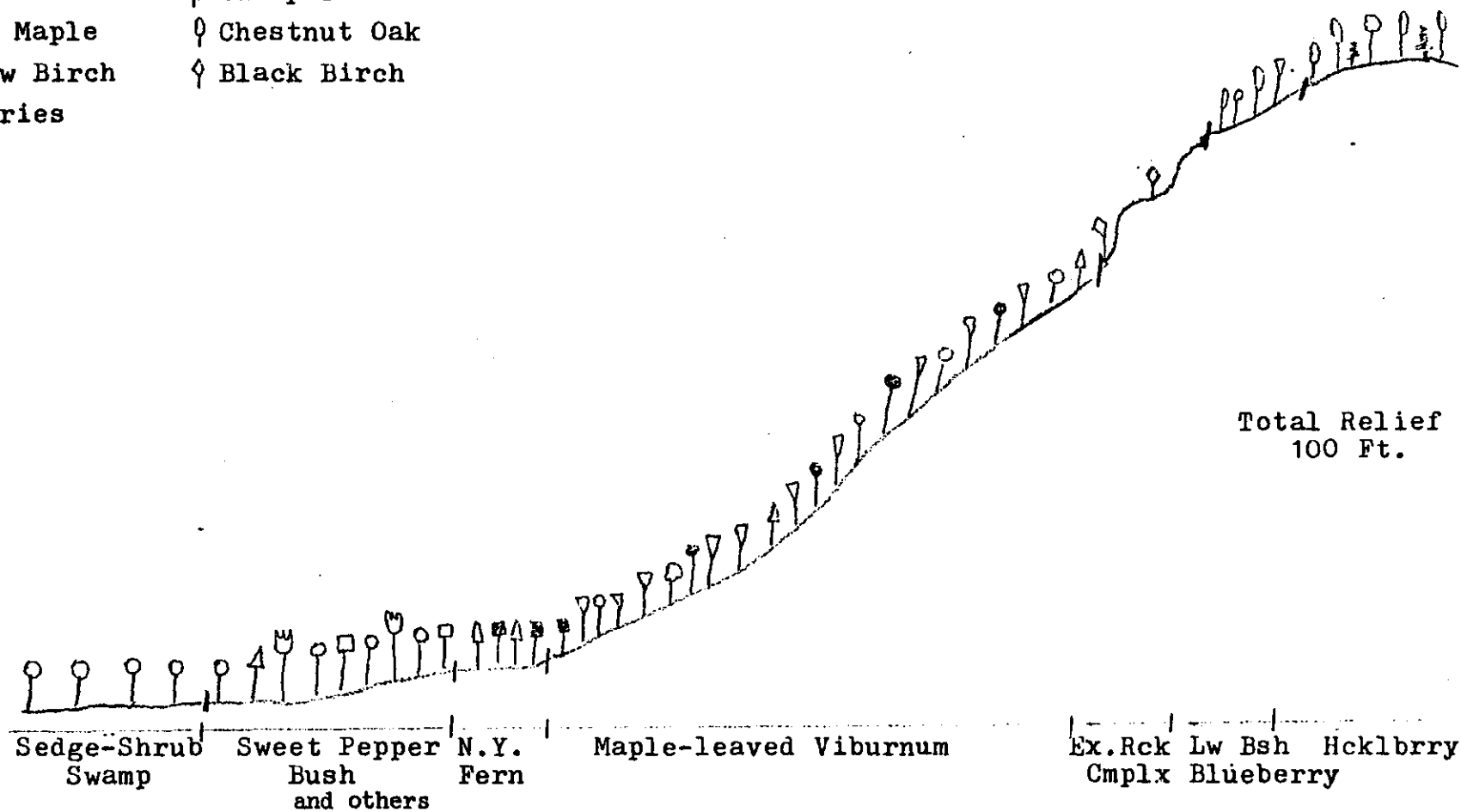
The Huckleberry Community occurs on upland sites with shallow soils that are excessively drained. The moisture regime is between 0 and 1, and soils

Fig. 2. Idealized Toposequence of Plant Communities at Weir Nature Preserve

∇ Red Oak
 ○ Red Maple
 △ White Ash
 ♣ Sugar Maple
 □ Yellow Birch
 ⊙ Hickories

‡ Red Cedar
 ● White Oak
 ♣ Tulip Tree
 ○ Chestnut Oak
 ◇ Black Birch

E ←



C O M M U N I T I E S

Table 2. Moisture Regime Scale Used in Field Work
at Weir Nature Preserve
(after Damman, 1964)

- 9 - Extremely dry: steep eroding sands, rock piles, gravel.
- 0 - Very dry: medium and coarse sands; shallow soils, not influenced by ground water.
- 1 - Dry: deep silty sands and loamy sands, not influenced by ground water.
- 2 - Well-drained: deep sandy loams and loams, not influenced by ground water.
- 3 - Somewhat moist: loams and sandy loams with some rust mottling in lower part of B or C horizon. Moist variants of zonal soil types.
- 4 - Moist: soil surface above the maximum water level: normal soil profile development hampered because of imperfect drainage. Upper 1-2 feet of soil well-aerated during vegetative season. On mineral soils a severely mottled to homogenous brown horizon is present. Occurs also on heavy textured soils with perched water table and on dry deep peat.
- 5 - Somewhat wet: maximum water level at or close to the soil surface. Anaerobic soils; on mineral soils reduced, grey soil matrix with rust mottling. Gleysols, some peat soils.
- 6 - Wet: water level at soil surface for most of vegetative season. Reduced gley layer up to mineral soil surface on mineral soils; mottling usually absent or insignificant. Organic soil, gleysol.
- 7 - Very wet: water level above soil surface for most part of vegetative season. Minimum water level approximately at soil surface. Organic soil.
- 8 - Permanently inundated: minimum water level above soil surface, soils permanently inundated. Sapropel, dry, gyttja, and marl soils.

are of the Hollis series or Charlton-Hollis complex. The tree cover is relatively open compared to more mesic sites, and sun-loving species occur in the understory.

Trees common in this community include red, black, and chestnut oak, red maple, and black birch. A small tree common here is shadbush. The shrub layer here may be choked with mountain laurel in some cases, while in other places it is absent. Other shrubs found in this community include ground juniper and occasionally maple-leaved viburnum or witch hazel. The herb layer is commonly dominated by huckleberry, with lowbush blueberry present. Pink lady-slipper, wild lily-of-the-valley, whorled loosestrife, dogbane, and cow-wheat are common herbs. Mosses include Leucobryum glaucum, Dicranum scoparium, and Polytrichum commune.

3. Low-bush Blueberry Community

This community is closely associated with the previously described one. The soils may be slightly less xeric with a moisture regime of 1. The soil series remain Hollis or Charlton-Hollis complex. Tree cover is much the same, with white oak a bit more common. The canopy also tends to be higher and many times more complete in coverage than in the huckleberry counterpart. Again, the shrub layer may be completely dominated by mountain laurel. Other low trees and shrubs include chestnut, saplings, shadbush, maple-leaved viburnum, witch hazel, and on rocker sites, striped maple. Herbs include wild lily-of-the-valley, wild oats, wild sarsaparilla, pink lady's slipper, cow-wheat, Carex pensylvanica, and Indian pipe. Ideal development of this community has been denied by dense growth of mountain laurel.

4. Maple-leaved Viburnum Community

This is the most mesic of the upland communities, with a moisture regime of 2 to 3. It occurs on Charlton and Hollis soil series. The trees here develop well and thoroughly shade the forest floor, allowing more shade-loving species to develop. Chestnut oak no longer occurs, and hickories, white ash, sugar maple, and flowering dogwood enter the list of tree species present. Beech may dominate areas where it has spread from root suckers.

A common to dominant shrub which occurs here is maple-leaved viburnum, while witch hazel and hazelnut also occur. Here again, mountain laurel may become dominant. Some herbs found here are the whorled wood aster, white wood aster, hairy Solomon's-seal, sweet goldenrod, wild sarsaparilla, downy rattlesnake-plantain, perfoliate bellwort, spotted wintergreen, hay-scented fern, Christmas fern, marginal fern, and even whorled pogonia and pinesap. This list is not meant to be complete, as a far greater variety of herbs are actually present.

5. New York Fern Community

The New York Fern Community is often reached by walking downslope from the Maple-leaved Viburnum Community. It is one of the driest of the moist forest communities. This community usually occurs where the slope drops off at the base of a hill or knoll, and is absent where this condition is not present. Soil moisture regime is 3, and the soil series is commonly Charlton.

The tree layer consists mostly of white ash, sugar maple, red maple, red oak, and yellow birch. Sometimes black locust and tulip tree are present. Shrubs include mountain laurel, high-bush blueberry, early azalea, maple-leaved viburnum, and hazelnut. The herb layer is usually dominated by New York fern. Hay-scented fern grows well along with it. Other herbs include naked-flowered tick-trefoil, cut-leaved grape fern, partridgeberry, Carex pensylvanica, white wood aster, zig-zag goldenrod, starflower, and many others. In many areas this community occurs as small patches which are unable to be accurately mapped at the scale employed in this study.

6. Fern Type Community

This community occurs on similar but slightly wetter sites than the New York Fern Community. No drought is experienced during the summer in this community, whereas periods of low moisture occur in the New York Fern Community. The moisture regime is four, and the soil series on which it is located is Sutton or Woodbridge, which are commonly mottled in their lower horizons.

The tree layer is almost always dominated by white ash and sugar maple. Red maple, red oak, yellow birch, and others commonly occur. Mountain laurel may be present in this association, but it never becomes well developed. More common are high-bush blueberry, winterberry, arrowwood, witch hazel, and burning bush.

The herb layer is ideally dominated by a thick carpet of ferns, but phases were mapped which have poorly developed herbaceous layers. Common ferns found here are Christmas, lady, spinulose, hay-scented, and New York ferns. Flowering herbs include Jack-in-the-Pulpit, stinking benjamin, red and white baneberry, partridgeberry, wild geranium, Japanese barberry, and carrion flower. The phase with the poorly developed herbaceous layer contains baneberry, Christmas fern, stinking benjamin, and Jack-in-the-Pulpit in a widely spaced manner. Recent disturbance or thick growth of sugar maple saplings seem to partially explain this development.

7. Horse-balm Community

The Horse-balm Community occurs in areas which are relatively nutrient-rich. This can be caused by seepage water bringing leachates from upslope or by past use. This community is quite restricted in its distribution on the preserve, but where it occurs a rich flora is present. Soil moisture regime is 3 to 4, and this moist forest may occur on Hollis or Woodbridge soil series, possibly even Sutton. The edaphic conditions necessary for this community to be present are limited on the preserve, and the community dynamics are not well understood.

The tree species are similar to those of the Fern Type Community, but in this community they commonly attain greater height. Basswood saplings were present, but no trees were found. Bitternut hickory was found in this community. The shrub layer is not striking and includes maple-leaved viburnum, winterberry, witch hazel, choke cherry, and others. As the tree cover becomes more complete, the shrub layer thins.

The herbaceous layer, however, is full of "richness" indicators. These include: American liverplant, horse-balm, black snakeroot, maidenhair fern, Virginia knotweed, and rattlesnake fern. Many other plants found in common with other communities grow here also. In some cases, species growing here attain greater size than they do in other communities in which they occur.

8. Cinnamon Fern Community

Areas in which this community occurs are rather wet, with a moisture regime of 5. It is interesting to find red oak, a species preferring drier sites, to be present among the tree layer. The canopy is dominated by white ash and sugar maple, while tulip tree and pepperidge are also present. Other trees present include red maple and yellow birch.

Shrubs include winterberry, high-bush blueberry, early azalea, and sweet pepperbush. If sweet pepperbush becomes dominant, the community type is changed. This community may be recognized by the dense layer of cinnamon fern present in the herbaceous layer. Other ferns include lady, marsh, and sensitive ferns. Indian cucumber root and lily-of-the-valley are among the herbs which are present.

9. Sweet Pepperbush Community

The Sweet Pepperbush Community may be found at the edge of muck swamps. The belt may be rather wide or narrow depending on how the better drained soils grade into the swamps. The moisture regime of this community does not differ much from the previous communities, being either 4 or 5. Perhaps a more important factor determining the distribution of this community is that it occurs in areas which are flooded in the spring and dry out by summer. Slight changes in elevation have great effects on the vegetation in this community. Species here must withstand inundation as well as periods of low water level.

The tree layer in this association consists of a rather bizarre association. White ash is present, as expected, and it may be dominant or co-dominant with tulip tree and red maple. Other trees include shagbark hickory, yellow birch, black locust, black ash, pepperidge, and red oak. The hickory and oak are usually on much drier sites.

The shrub layer is dominated by sweet pepperbush and its associates, including swamp honeysuckle, early azalea, high-bush blueberry, spicebush, and others. The clones of sweet pepperbush may become so dense that they completely eliminate the herb layer. The latter may be quite diverse, with marsh blue violet, cinnamon fern, interrupted fern, Jack-in-the-Pulpit, skunk cabbage, Lycopodium lucidulum, Virginia creeper, tall meadow-rue, and ditch stonecrop possibly present.

10. Skunk Cabbage Community

This is a red maple swamp with the tree cover being around three-fourths complete. The moisture regime is 6, and the soil is a muck. These areas are found in depressions in which water and nutrients accumulate and are consequently quite rich.

The tree layer consists for all practical purposes of one species, red maple. Tree heights are not great, being around 16 meters. The shrubs consist of spicebush, winterberry, high-bush blueberry, and arrowwood. Herbs include turtlehead, crested fern, clearweed, jewelweed, false nettle, Carex stricta, hooked buttercup, marsh marigold, rough bedstraw, false hellebore, and skunk cabbage. The well-developed moss layer consists of Thuidium delicatulum, Climacium dendroides, Mnium affine, and Sphagnum species along with

others. Two liverworts found here are Conocephalum conicum and Pellia epiphylla.

11. Sedge - Shrub Swamp Community

This community occurs on deep mucks in areas which are permanently inundated or have water at the surface year-round. The moisture regime is 7 to 8, and the soils are deep mucks. This community contains a rich and varied flora.

The only trees present are red maple and slippery elm. The cover created by these widely-spaced trees is insignificant. A dense shrub layer is intermittently developed, so there are areas also devoid of shrubs. The important shrubs include red-osier dogwood, silky dogwood, nannyberry, wild raisin, pussy willow, and other willows, elderberry, arrowwood, winterberry, high-bush blueberry, and common and speckled alder. Vines entangled in this growth include fox grape and virgin's bower.

The micro-relief of this area is full of ridges and hollows. Tussock-forming species further add to the complexity of the surface. Grass and sedge-like species include bur-reeds, bulrushes, tussock-forming sedges and other sedges, wood reedgrass, and many others. Ferns found here are sensitive, lady, marsh, Massachusetts, cinnamon, crested, Boott's, and spinulosewood ferns.

The list of forbs present in this area alone is impressive. Arrow-leaved thumbtear, mild waterpepper, turtlehead, spotted Joe-Pye-weed, boneset, skunk cabbage, false nettle, blueflag, mad-dog skullcap, and cleavers are only a sampling of what is present. This area provides a suitable nesting habitat for many wetland birds. Its high productivity of both flora and fauna can be witnessed by traversing the area.

12. Fields and Reverting Fields

These are areas either recently allowed to grow back or those being maintained as open fields. These areas were not studied structurally, but species were observed and recorded.

The older fields, no longer maintained, have been invaded by red cedar and black birch primarily. In some cases, where a nearby seed source was available, hickories and oaks occur. Sassafras and sumacs, which spread by root suckering, also cover some areas. Other dwarf shrubs include low-bush blueberry, huckleberry, and sweet fern. The most common grass is little bluestem. Thistles, meadow-sweet, and early and rough-stemmed goldenrod, hawk-weeds, beggar ticks, and other composites are common.

The mowed fields are dominated by little bluestem. Herbs include butterfly weed, butter and eggs, black swallowwort, early and rough-stemmed goldenrod, yarrow, ragweed, poorman's pepper, and many others. Stone walls along these open areas are covered with many vines. These include fox and summer grape, groundnut, sawbrier, bullbrier, poison ivy, and Virginia creeper.

These special areas create greater diversity for plants, small birds and mammals, and insects and snakes.

V. FAUNA

Weir Nature Preserve is a relatively small area with relatively little habitat diversity. The faunal diversity is therefore also not great. The faunal species lists (see Appendix A) are fairly small for the added reason that there were no records of fauna prior to this summer. Further faunal studies, especially of mammals, reptiles, and amphibians, would undoubtedly add to the lists.

Perching birds (Passeriformes) are by far the dominant order of birds encountered on the preserve. More than three-quarters of the bird list is composed of species belonging to this order, which includes all birds from flycatchers to sparrows. The only bird found that is at all uncommon is the Carolina Wren (Thryothorus ludovicianus). Ideal habitat for this secretive species exists at the southwestern edge of the open field off Nod Hill Road (Julio de la Torre, personal communication).

VI. PRESENT USE AND SURROUNDING ACTIVITY

The only evidence of human use on Weir Nature Preserve is hiking, but even this is limited.

Wilton maintains one- and two-acre zoning. The comprehensive plan of development of the town stresses the need to maintain low density districts, i.e., lots of two or more acres mixed near medium-density areas or one-acre zones. Weir Nature Preserve is located in a low-density zoned neighborhood. The properties surrounding the preserve are single-family lots, many in excess of two acres.

Wilton is a community encompassed by the suburban belt of New York City. Most of the population of approximately 16,000 commutes to the city for work.

The Wilton plan of development suggests 10 acres of open space land for every 1,000 residents. Wilton has its own Land Conservation Trust. In addition, Weston's Aspetuck Land Trust owns properties in Wilton, and the Wilton Trails Association maintains hiking trails. There is a town forest on Boas Lane, and Merwin Meadows, a 12-acre town park, includes a pond for skating and hockey. Wilton's Recreation Commission provides a wide range of activities and services for the residents. The Woodcock Nature Center provides educational resources and nature programs for the community.

The trails through the preserve may be considered for public use, but there seem to be adequate recreational facilities, i.e., trails and bridle paths, in the town. The preserve is in a unique position, since it is surrounded by private property and is near the border of two towns, Wilton and Ridgefield. As Wilton and the Nod Hill section become more populated, the preserve will become an even more valuable area for preservation of flora and fauna.

VII. MANAGEMENT CONSIDERATIONS

One of the ideas which motivated the founding of The Nature Conservancy is the need to set aside land undisturbed by man in order that the processes of a natural system may freely take their course, allowing them to be studied and appreciated in the future. Ideally, this philosophy would lead to a policy excluding all human use from a preserve. It is recognized, however, that there are areas on a preserve which can absorb a certain amount of use with minimal impact, and that this use may be desirable. In this section, recommendations are given which are felt to best reflect this idea.

Weir Nature Preserve receives little abuse except along roadsides, where litter often accumulates. Posting seems to have been effective in curtailing any trespassing which may have occurred.

Mowing fields cannot be considered natural, but it does add diversity to the preserve. The area where the forest meets the fields or hedge rows between fields create the celebrated "edge effect" beneficial for small mammals and birds.

Trails on the preserve were routed intelligently, avoiding wet and fragile areas. Routes through the mountain laurel discourage digression and effectively channel use. Trails should be kept clear so that the footway remains conspicuous.

Possible expansion of the preserve should be considered as additional plant communities and land forms not represented on the present preserve are found on adjacent land. In particular, it is recommended that the wetland and ridge areas to the south of the preserve be protected, either through outright acquisition or conservation easement.

VIII. CONCLUSION

Weir Nature Preserve is a glacier-scoured, well elevated area with coastal influences. Habitats range from exposed summits to deep muck swamps.

Trails on the area sensibly follow the more durable uplands and avoid wet and otherwise fragile areas. The area has been struck by severe winds at least twice in the last two years, and many windfalls exist in exposed uplands and in the wet areas. No year-round source of running water exists, but there are interesting geologic formations which have been studied on the preserve.

The network of stone walls reflects the previous agricultural use of the area. No rare plants were recorded by the plant ecologist during the summer, but attention is called to the more extensive work of Abigail Maynard in cataloging species on the preserve.

This ecological inventory serves as a baseline for monitoring future changes, as a framework from which more specialized research can be directed, and as a guide in the management of the preserve. Further studies of migratory birds and small mammals would be valuable. An interesting fungal flora, including Mutinus caninus, is found on the preserve and could possibly be studied in more detail. A study of reverting fields would be useful in devising chronosequences for this area of Connecticut.

The number of possible studies which could be conducted on the area is only limited by one's imagination and perhaps by available funds. It must be noted that a natural area derives its value as a function of the following factors: its special or unique qualities, be they geologic, vegetative, or otherwise; the degree and length of time in which natural processes have been allowed to run their course undisturbed by man; and, finally, the scientific data available concerning the area. It is the task of the management committee to see that these factors are fully appreciated in order to protect this valuable land for the future.

APPENDIX A

Species List

N. B. Frequency of species refers to occurrence on preserve.

Flora

Trees

		Abundant	Common	Occasional	Rare
<u>Acer pennsylvanicum</u>	Striped maple	x			
<u>A. rubrum</u>	Red maple	x			
<u>A. saccharum</u>	Sugar maple	x			
<u>Amelanchier arborea</u>	Shadbush			x	
<u>A. canadensis</u>	Shadbush			x	
<u>Betula lenta</u>	Black birch		x		
<u>B. lutea</u>	Yellow birch				x
<u>B. populifolia</u>	Gray birch				x
<u>Carpinus caroliniana</u>	Blue beech			x	
<u>Carya cordiformis</u>	Bitternut hickory				x
<u>C. glabra</u>	Pignut hickory			x	
<u>C. ovata</u>	Shagbark hickory		x		
<u>C. ovalis</u>	False shagbark hickory				x
<u>C. tomentosa</u>	Mockernut hickory				x
<u>Castanea dentata</u>	Chestnut			x	
<u>Celtus occidentalis</u>	Hackberry				x
<u>Cornus alternifolia</u>	Green-osier dogwood				x
<u>C. florida</u>	Flowering dogwood		x		
<u>C. stolonifera</u>	Red-osier dogwood			x	
<u>Fagus grandifolia</u>	Beech		x		
<u>Fraxinus americana</u>	White ash		x		
<u>F. nigra</u>	Black ash				x
<u>Juniperus virginiana</u>	Red cedar		x		
<u>Liriodendron tulipifera</u>	Tulip-tree			x	
<u>Nyssa sylvatica</u>	Pepperidge			x	
<u>Ostrya virginiana</u>	Ironwood			x	
<u>Picea glauca</u>	White spruce				x
<u>Pinus strobus</u>	White pine				x
<u>Prunus serotina</u>	Black cherry			x	
<u>Prunus virginiana</u>	Choke cherry			x	
<u>Quercus alba</u>	White oak		x		
<u>Q. coccinea</u>	Scarlet oak			x	
<u>Q. palustris</u>	Pin oak				x
<u>Q. prinus</u>	Chestnut oak			x	
<u>Q. rubra</u>	Red oak	x			
<u>Q. velutina</u>	Black oak			x	
<u>Robinea pseudo-acacia</u>	Black locust			x	
<u>Sassafras albidum</u>	Sassafras			x	
<u>Tilia americana</u>	Basswood				x
<u>Tsuga canadensis</u>	Hemlock				x
<u>Ulmus americana</u>	American elm				x
<u>U. rubra</u>	Slippery elm			x	

Shrubs and Woody Vines

<u>Alnus rugosa</u>	Speckled alder	x
<u>A. serrulata</u>	Common alder	x
<u>A. sp.</u>	Alder sp.	x
<u>Cephalanthus occidentalis</u>	Buttonbush	x
<u>Clethra alnifolia</u>	Sweet pepperbush	x
<u>Crataegus sp.</u>	Hawthorn	x
<u>Comptonia peregrine</u>	Sweet fern	x
<u>Cornus amomum</u>	Silky dogwood	x
<u>C. racemosa</u>	Panicked dogwood	x
<u>Corylus cornuta</u>	Beaked hazelnut	x
<u>Euonymus atropurpurea</u>	Burning bush	x
<u>Hamamelis virginiana</u>	Witch hazel	x
<u>Ilex verticillata</u>	Winterberry	x
<u>Juniperus communis</u>	Ground juniper	x
<u>Kalmia latifolia</u>	Mountain laurel	x
<u>Lindera Benzoin</u>	Spicebush	x
<u>Lyonia ligustrina</u>	Maleberry	x
<u>Rhododendron nudiflorum</u>	Purple honeysuckle	x
<u>R. viscosum</u>	Swamp honeysuckle	x
<u>Rhus typhina</u>	Staghorn sumac	x
<u>R. glabra</u>	Smooth sumac	x
<u>Ribes sp.</u>	Gooseberry sp.	x
<u>Robinea sp.</u>	Locust sp.	x
<u>Rosa carolina</u>	Carolina rose	x
<u>R. multiflora</u>	Multiflora rose	x
<u>R. palustris</u>	Swamp rose	x
<u>Rubus cf. allegheniensis</u>	Blackberry	x
<u>R. odoratus</u>	Purple-flowering raspberry	x
<u>Salix discolor</u>	Pussy willow	x
<u>S. sp.</u>	Willow sp.	x
<u>Sambucus canadensis</u>	Elderberry	x
<u>Smilax glauca</u>	Sawbriar	x
<u>S. rotundifolia</u>	Bullbriar	x
<u>Spiraea latifolia</u>	Meadowsweet	x
<u>Vaccinium atrococcum</u>	Black high-bush blueberry	x
<u>V. corymbosum</u>	High-bush blueberry	x
<u>Viburnum acerifolium</u>	Maple-leaved viburnum	x
<u>V. cassinoides</u>	Wild raisin	x
<u>V. dentatum</u>	Arrow-wood	x
<u>V. lentago</u>	Nannyberry	x
<u>V. recognitum</u>	Arrow-wood	x
<u>Vitis aestivalis</u>	Summer grape	x
<u>V. labrusca</u>	Fox grape	x

Herbs

<u>Achillea millefolium</u>	Yarrow	x
<u>Acorus calamus</u>	Sweetflag	x
<u>Actaea pachypoda</u>	Doll's eyes	x
<u>A. rubra</u>	Red baneberry	x
<u>Agrimonia gryposepala</u>	Agrimony	x
<u>Alisma triviale</u>	Water-plantain	x

dd 50c

		<u>A</u>	<u>C</u>	<u>O</u>	<u>R</u>
<u>Ambrosia artemisiifolia</u>	Ragweed			x	
<u>Amphicarpa bracteata</u>	Hog peanut			x	
<u>Andropogon scoparius</u>	Little bluestem	x			
<u>Anemone quinquefolia</u>	Wood anemone				x
<u>Antennaria plantaginifolia</u>	Pussy's toes		x		
<u>Apios americana</u>	Groundnut				x
<u>Apocynum androsaemifolium</u>	Spreading dogbane		x		
<u>Aquilegia canadensis</u>	Columbine				x
<u>Aralia nudicaulis</u>	Wild sarsaparilla	x			
<u>Arctium minus</u>	Common burdock		x		
<u>Arisaema atrorubens</u>	Jack-in-the-Pulpit	x			
<u>Asclepias tuberosa</u>	Butterfly weed		x		
<u>Asclepias syriaca</u>	Common milkweed		x		
<u>Aster acuminatus</u>	Whorled wood aster		x		
<u>A. divaricatus</u>	Wood aster	x			
<u>Aster spp.</u>	Asters	x			
<u>Berberis thunbergii</u>	Barberry		x		
<u>Bidens cf. frondosa</u>	Beggar-ticks		x		
<u>Blephilia ciliata</u>			x		
<u>Boehmeria cylindrica</u>	False nettle		x		
<u>Brachyelytrum erectum</u>			x		
<u>Bromus sp.</u>			x		
<u>Calla palustris</u>	Water arum				x
<u>Caltha palustris</u>	Marsh marigold				x
<u>Cardamine pensylvanica</u>	Pennsylvania bittercress				x
<u>Carex blanda</u>	Sedge				x
<u>C. crinita</u>		x			
<u>C. debilis</u>					x
<u>C. gracillima</u>			x		
<u>C. hirtifolia</u>			x		
<u>C. intumescens</u>			x		
<u>C. laxiculmis</u>			x		
<u>C. laxiflora</u>			x		
<u>C. lurida</u>			x		
<u>C. pensylvanica</u>		x			
<u>C. stricta</u>			x		
<u>C. virescens</u>			x		
<u>Caulophyllum thalictroides</u>	Blue cohosh				x
<u>Chelidonium majus</u>	Celandine		x		
<u>Chelone glabra</u>	Turtlehead				x
<u>Chimaphila maculata</u>	Spotted wintergreen				x
<u>Cinna arundinacea</u>	Wood reedgrass		x		
<u>Circaea quadrisulcata</u>	Enchanter's nightshade		x		
<u>Clematis virginiana</u>	Virgin's bower		x		
<u>Collinsonia canadensis</u>	Horse-balm		x		
<u>Comandra umbellata</u>	Toadflax				x
<u>Commelina communis</u>	Asiatic dayflower		x		
<u>Corydalis sempervirens</u>	Pink corydalis				x
<u>Cuscuta gronovii</u>	Dodder		x		
<u>Cynanchum nigrum</u>	Black swallow-wort			x	
<u>Cypripedium acaule</u>	Pink lady's slipper	x			
<u>Danthonia spicata</u>	Poverty grass				x

DCM

	<u>A</u>	<u>C</u>	<u>O</u>	<u>R</u>
<u>Daucus carota</u>			x	
<u>Desmodium canadense</u>			x	
<u>D. glutinosum</u>			x	
<u>D. nudiflorum</u>				x
<u>D. paniculatum</u>			x	
<u>Dianthus deltoides</u>				x
<u>Elymus virginicus</u>			x	
<u>Epifagus virginiana</u>				x
<u>Erigeron canadensis</u>		x		
<u>Eupatoreum dubium</u>				x
<u>E. maculatum</u>		x		
<u>E. perfoliatum</u>			x	
<u>E. purpureum</u>			x	
<u>Festuca sp.</u>			x	
<u>Fragaria virginiana</u>			x	
<u>Galium aparine</u>			x	
<u>G. asprellum</u>		x		
<u>G. triflorum</u>		x		
<u>Gaultheria procumbens</u>			x	
<u>Gaylussacia baccata</u>			x	
<u>Geranium maculatum</u>			x	
<u>Gerardia virginica</u>				x
<u>Geum canadense</u>			x	
<u>G. virginica</u>			x	
<u>Goodyera pubescens</u>			x	
<u>Helianthus divaricatus</u>			x	
<u>Hemerocallis fulva</u>				x
<u>Hepatica americana</u>			x	
<u>Hesperis matronalis</u>				x
<u>Hieracium paniculatum</u>			x	
<u>H. pilosella</u>			x	
<u>H. scabrum</u>			x	
<u>H. venosum</u>			x	
<u>Houstonia caerulea</u>				x
<u>Hydrocotyle americana</u>			x	
<u>Hypericum perforatum</u>			x	
<u>Hypoxis hirsuta</u>			x	
<u>Hystrix patula</u>			x	
<u>Iris versicolor</u>			x	
<u>Isotria verticillata</u>				x
<u>Juncus spp.</u>		x		
<u>Lactuca biennis</u>			x	
<u>Laportea canadensis</u>				x
<u>Leersia oryzoides</u>			x	
<u>Lemna minor</u>			x	
<u>Leonurus cardica</u>				x
<u>Lepidium virginicum</u>			x	
<u>Lilium canadense</u>				x
<u>Lobelia cardinalis</u>			x	
<u>Lonicera canadensis</u>				x
<u>Ludwigia palustris</u>			x	
<u>Luzula cf. multiflora</u>			x	
<u>Lycopus virginicus</u>			x	
<u>Lysimachia ciliata</u>			x	
Queen Anne's lace			x	
Showy tick-trefoil			x	
Pointed-leaved tick-trefoil			x	
Naked-flowered tick-trefoil				x
Panicked tick-trefoil			x	
Maiden pink				x
Terrell grass			x	
Beechdrops				x
Horseweed		x		
Joe-Pye-weed				x
Spotted Joe-Pye-weed		x		
Boneset			x	
Sweet Joe-Pye-weed			x	
Fescue grass			x	
Strawberry			x	
Cleavers			x	
Rough bedstraw		x		
Fragrant bedstraw		x		
Aromatic wintergreen			x	
Huckleberry		x		
Wild geranium		x		
Downy false foxglove				x
White avens			x	
Rough avens			x	
Downy rattlesnake plantain			x	
Sunflower			x	
Day-lily			x	
American liverplant				x
Dame's rocket				x
Panicked hawkweed			x	
Mouse-ear hawkweed			x	
Rough hawkweed			x	
Rattlesnake weed			x	
Bluets				x
Water mat			x	
St. John's-wort			x	
Yellow stargrass			x	
Bottle-brush grass			x	
Blue flag			x	
Whorled pogonia				x
Rushes		x		
Blue lettuce			x	
Wood nettle				x
Sawgrass			x	
Duckweed			x	
Motherwort				x
Poorman's pepper			x	
Canada lily				x
Cardinal flower			x	
Fly honeysuckle				x
Water-Purslane			x	
Woodrush			x	
Bugleweed			x	
Fringed loosestrife			x	

		<u>A</u>	<u>C</u>	<u>O</u>	<u>R</u>
<u>L.</u>	<u>quadrifolia</u>		x		
<u>L.</u>	<u>terrestris</u>			x	
<u>Maianthemum</u>	<u>canadense</u>	x			
<u>Mediula</u>	<u>virginiana</u>			x	
<u>Melampyrum</u>	<u>lineare</u>			x	
<u>Mentha</u>	<u>arvensis</u>		x		
<u>Mikania</u>	<u>scandens</u>			x	
<u>Mitabella</u>	<u>repens</u>	x			
<u>Monotropa</u>	<u>hypopithys</u>				x
<u>M.</u>	<u>uniflora</u>		x		
<u>Muhlenbergia</u>	<u>sp.</u>				x
<u>Myosotis</u>	<u>laxa</u>		x		
<u>Nasturtium</u>	<u>officinale</u>				x
<u>Oxalis</u>	<u>europaea</u>			x	
<u>O.</u>	<u>stricta</u>			x	
<u>Panicum</u>	<u>dichotomum</u>			x	
<u>P.</u>	<u>spp.</u>		x		
<u>Parthenocissus</u>	<u>quinquefolia</u>		x		
<u>Penthorum</u>	<u>sediodes</u>			x	
<u>Phlox</u>	<u>sp.</u>				x
<u>Pilea</u>	<u>pumila</u>	x			
<u>Plantago</u>	<u>lanceolata</u>			x	
<u>P.</u>	<u>major</u>			x	
<u>Poa</u>	<u>alsodes</u>			x	
<u>P.</u>	<u>pratensis</u>			x	
<u>Polygonatum</u>	<u>pubescens</u>		x		
<u>P.</u>	<u>cespitosum</u>			x	
<u>P.</u>	<u>hydropiperoides</u>			x	
<u>P.</u>	<u>sagittatum</u>			x	
<u>Ponetederia</u>	<u>cordata</u>				x
<u>Potentilla</u>	<u>canadensis</u>		x		
<u>P.</u>	<u>simplex</u>			x	
<u>Prenanthes</u>	<u>alba</u>			x	
<u>Prunella</u>	<u>vulgaris</u>			x	
<u>Pyenanthemum</u>	<u>virginianum</u>			x	
<u>Ranunculus</u>	<u>abortivus</u>				x
<u>R.</u>	<u>recurvatus</u>				x
<u>Ribes</u>	<u>sp.</u>				x
<u>Rubus</u>	<u>hispidus</u>		x		
<u>Rumex</u>	<u>acetosella</u>			x	
<u>Sanicula</u>	<u>marilandica</u>				x
<u>Scirpus</u>	<u>rubrotinctus</u>			x	
<u>S.</u>	<u>validus</u>			x	
<u>S.</u>	<u>spp.</u>			x	
<u>Scutellaria</u>	<u>lateriflora</u>			x	
<u>Senecio</u>	<u>aureus</u>				x
<u>Smilax</u>	<u>herbacea</u>			x	
<u>Solanum</u>	<u>dulcamara</u>		x		
<u>S.</u>	<u>nigrum</u>			x	
<u>Solidago</u>	<u>bicolor</u>			x	
<u>S.</u>	<u>caesia</u>			x	
<u>S.</u>	<u>flexicaulis</u>		x		
	Whorled loosestrife		x		
	Swamp candles			x	
	Wild lily-of-the-valley	x			
	Indian cucumber			x	
	Cow-wheat			x	
	Wild mint		x		
	Climbing hempweed			x	
	Partridgeberry	x			
	Pinesap				x
	Indian pipe		x		
					x
	Forget-me-not		x		
	Watercress				x
	Yellow woodsorrel			x	
	Yellow woodsorrel			x	
	Panic grass			x	
	Panic grasses		x		
	Virginia creeper		x		
	Ditch stonecrop			x	
	Phlox				x
	Clearweed	x			
	European plantain			x	
	Common plantain			x	
	Speergrass			x	
	Kentucky bluegrass			x	
	Hairy Solomon's seal		x		
	Long-bristled smartweed			x	
	Mild waterpepper			x	
	Arrow-leaved thumbtack			x	
	Pickeralweed				x
	Dwarf cinquefoil		x		
	Common cinquefoil			x	
	White lettuce			x	
	Heal-all			x	
	Mountain mint			x	
	Kidney-leaved buttercup				x
	Hooked buttercup				x
	Gooseberry				x
	Blackberry		x		
	Sheep sorrel			x	
	Snakeroot				x
	Bulrush			x	
	Soft-stem bulrush			x	
	Bulrushes			x	
	Bugleweed			x	
	Golden ragwort				x
	Carriion flower			x	
	Nightshade		x		
	Nightshade			x	
	Silver-rod			x	
	Blue-stemmed goldenrod			x	
	Zigzag goldenrod		x		

<u>S.</u>	<u>juncea</u>	Early goldenrod	x
<u>S.</u>	<u>Odora</u>	Sweet goldenrod	x
<u>S.</u>	<u>rugosa</u>	Rough-stemmed goldenrod	x
<u>Sparganium</u>	<u>androcladum</u>	Bur-reed	x
<u>Spiraea</u>	<u>latifolia</u>	Meadowsweet	x
<u>S.</u>	<u>tomentosa</u>	Steeplebush	x
<u>Symplocarpus</u>	<u>foetidus</u>	Skunk cabbage	x
<u>Taraxacum</u>	<u>officinale</u>	Dandelion	x
<u>Thalictrum</u>	<u>polygamum</u>	Tall meadow-rue	x
<u>Tovara</u>	<u>virginiana</u>	Virginia knotweed	x
<u>Trientalis</u>	<u>borealis</u>	Star flower	x
<u>Trillium</u>	<u>erectum</u>	Stinking Benjamin	x
<u>Uvularia</u>	<u>perfoliata</u>	Perfoliate bellwort	x
<u>U.</u>	<u>sessilifolia</u>	Wild oats	x
<u>Vaccinium</u>	<u>angustifolium</u>	Late low-bush blueberry	x
<u>V.</u>	<u>vacillans</u>	Early low-bush blueberry	x
<u>Veratrum</u>	<u>viride</u>	False hellebore	x
<u>Verbascum</u>	<u>thapsus</u>	Common mullein	x
<u>Viccia</u>	<u>cracca</u>	Cow vetch	x
<u>Viola</u>	<u>adunca</u>	Hooked-spur violet	x
<u>V.</u>	<u>cucullata</u>	March blue violet	x
<u>V.</u>	<u>pubescens</u>	Downy yellow violet	x
<u>V.</u>	<u>sp.</u>	Violet	x
<u>Zizia</u>	<u>aurea</u>	Golden alexanders	x

Ferns

<u>Adiantum pedatum</u>	Maiden-hair fern	_____x
<u>Athyrium filix-femina</u>	Lady fern	_____x
<u>A. thelypteroides</u>	Silvery spleenwort	_____x
<u>Botrychium dissectum</u>		_____
<u>var. obliquum</u>	Grape fern	_____x
<u>B. virginianum</u>	Rattlesnake fern	_____x
<u>Cystopteris fragilis</u>	Fragile fern	_____x
<u>Dennstaedtia punctilobula</u>	Hay-scented fern	_____x
<u>Dryopteris cristata</u>	Crested fern	_____x
<u>D. cristata</u> x		_____
<u>D. spinulosa</u>	Boott's fern	_____x
<u>D. hexagonoptera</u>	Broad beech fern	_____x
<u>D. marginalis</u>	Marginal fern	_____x
<u>D. noveboracensis</u>	New York fern	_____x
<u>D. simulata</u>	Massachusetts fern	_____x
<u>D. spinulosa</u>	Spinulose woodfern	_____x
<u>D. thelypteris</u>	Marsh fern	_____x
<u>Onoclea sensibilis</u>	Sensitive fern	_____x
<u>Osmunda cinnamomea</u>	Cinnamon fern	_____x
<u>O. claytoniana</u>	Interrupted fern	_____x
<u>O. regalis</u>	Royal fern	_____x
<u>Polypodium virginiana</u>	Common polypody	_____x
<u>Polystichum acrostichoides</u>	Christmas fern	_____x
<u>Pteridium aquilinum</u>	Bracken fern	_____x

A C O R

Club-mosses

Lycopodium complanatum
L. lucidulum
L. obscurum

_____ x
 _____ x
 _____ x

Horsetails

Equisetum arvense

_____ x

Mosses

Atrichum undulatum
Climacium dendroides
Dicranium scoparium
Leucobryum glaucum
Mnium affine
Fissidens sp.
Polytrichum commune
Thuidium delicatulum
Sphagnum spp.

Liverworts

Conocephalum conicum
Frullania sp.
Pellia epiphylla

NO

41

40

Fauna

Birds

Eastern Bluebird
Mourning Dove
Common Nighthawk
Common Flicker
Downy Woodpecker
Eastern Phoebe
Tree Swallow
Barn Swallow
Blue Jay
Common Crow
Black-capped Chickadee
Tufted Titmouse
White-breasted Nuthatch
House Wren
Carolina Wren
Gray Catbird
American Robin
Veery
Black-and-White Warbler
Blue-winged Warbler
Ovenbird
Common Yellowthroat
Common Grackle
Brown-headed Cowbird
Cardinal
Rufous-sided Towhee
Field Sparrow
Song Sparrow
Woodcock

Sialia sialis
Zenaidura macroura
Chordeiles minor
Colaptes auratus
Dendrocopos pubescens
Sayornis phoebe
Iridoprocne bicolor
Hirundo rustica
Cyanocitta cristata
Corvus brachyrhynchos
Parus atricapillus
Parus bicolor
Sitta carolinensis
Troglodytes aedon
Thryothorus ludovicianus
Dumetella carolinensis
Turdus migratorius
Catharus fuscescens
Miniotilta varia
Vermivora pinus
Seiurus aurocapillus
Geothlypis trichas
Quiscalus quiscula
Molothrus ater
Cardinalis cardinalis
Pipilo erythrophthalmus
Spizella pusilla
Melospiza melodia
Philohela minor

Total Species: 29

Julio de la Torre, a local birder, and Jeff Peterson, the plant ecologist, contributed several records.

Mammals

Eastern Chipmunk
Eastern Gray Squirrel
Woodchuck
White-tailed Deer

Tamias striatus
Sciurus carolinensis
Marmota monax
Odontocoleus virginianus

Reptiles

Common Garter Snake

Thamnophis sirtalis

APPENDIX B.

List of Maps Accompanying Report

<u>Feature</u>	<u>Scale</u>
Base Topographic Map	1:2400
Bedrock Geology Map	1:2400
Surficial Geology Map	1:2400
Soils Map	1:2400
Vegetation Map	1:2400
Use/Special Features Map	1:2400
Surrounding Property Ownership Map	1:2400

Maps were drawn by Michael Billa and Lowell Svernungsen.

Soils Map was compiled by the Soil Conservation Service from a special site survey of Weir Nature Preserve.

Surrounding Property Ownership Map was compiled from town ownership maps located in the Wilton and Ridgefield Town Halls.

APPENDIX C.

References

Geology

Hollands, Garrett G., 1972, The Surficial Geology of the Watershed of Converse - Putnam - Rockwood Lakes, Town of Greenwich, Southwestern Connecticut.

Rodgers, John, Robert M. Gates, and John L. Rosenfeld, 1959, Explanatory Text for Preliminary Geological Map of Connecticut, State Geological and Natural History Survey Bulletin No. 84.

Water

American Public Health Service, 1955, Standard Methods for the Examination of Water and Wastewater.

Brumbach, Joseph, The Climate of Connecticut, 1965, State Geological and Natural History Survey of Connecticut, Bulletin 99.

Connecticut Department of Environmental Protection and U. S. Environmental Protection Agency, 1971, Water Quality Standards Summary, State of Connecticut.

Rainwater, F. H., and L. L. Thatcher, 1960, Methods for Collection and Analysis of Water Samples, U. S. Government Printing Office, Washington, D. C.

Salk, A. J., 1961, Laboratory Manual on Fundamental Principles of Bacteriology, McGraw-Hill, New York.

Thomas, Mendell P., 1972, Gazeteer of Natural Drainage Areas of Streams and Water Bodies within the State of Connecticut, Connecticut Department of Environmental Protection.

USGS, Water Resources Inventory of Connecticut, 1966, 1970, 1972, 1974, 1975, Connecticut Water Resources Commission.

Water Resources Commission, 1970, Water Quality Standards, Hartford, State of Connecticut.

Vegetation and Flora

Conrad, H. S., 1956, The Mosses and Liverworts, Wm C. Brown Co., publishers, Dubuque, Iowa.

Damman, A. W. H., 1964, Some Forest Types of Central Newfoundland and Their Relation to Environmental Factors, Society of American Foresters Forest Science Monograph 8, 62 pp.

- Dowhan, J., 1976, The Eco-Regions of Connecticut. In publication.
- Fernald, M. L., 1950, Gray's Manual of Botany, American Book Co., New York.
- Gates, R. M., 1951, The Bedrock Geology of the Litchfield Quadrangle with Map, State Geological and Natural History Survey of Connecticut, 13 pp.
- Gonick, W., A. Sherin, and D. Hill, 1970, Soil Survey of Litchfield County, Connecticut, U. S. Department of Agriculture, SCS, Washington, D. C.
- Hale, M., 1969, The Lichens, Wm. C. Brown Co., Publishers, Dubuque, Iowa.
- Kershner, B., 1975, The Distribution of Plant Communities of Pond Mountain Natural Area, Kent, Connecticut, and Their Relation to Environmental Factors, M. S. Thesis, University of Connecticut.
- Mueller-Dombois, D., and H. Ellenberg, 1974, Aims and Methods of Vegetation Ecology, John Wiley and Sons, New York.
- Nichols, George E., 1913a, "The Vegetation of Connecticut I. Phytogeographical Aspects", Torrey 13: 89-112.
- _____, 1913b, "The Vegetation of Connecticut II. Virgin Forests", Torrey 13: 199-215.
- _____, 1914, "The Vegetation of Connecticut III. Plant Societies on Uplands", Torrey 14: 167-194.
- _____, 1915, "The Vegetation of Connecticut IV. Plant Societies in Lowlands", Bulletin Torrey Botanical Club 42: 169-194.
- Warren, L., 1970, Surficial Geologic Map of the Litchfield Quadrangle, Litchfield County, Connecticut, USGS, Washington, D. C.

Fauna

- American Ornithologists' Union, 1957, Checklist of North American Birds, American Ornithologists' Union, Baltimore.
- _____, 1973, "Thirty-second Supplement to the AOU Checklist of North American Birds", Auk 90: 411-419.
- _____, 1973, "Corrections and Additions to the 'Thirty-second Supplement to the AOU Checklist of North American Birds'", Auk 90: 887.
- Burt, William H., 1964, A Field Guide to the Mammals, Houghton Mifflin Co., Boston.
- Collins, Henry Hill, Jr., 1959, Complete Field Guide to American Wildlife, Harper and Row, Publishers, New York.
- Robbins, C. S., B. Bruun, and H. S. Zim, 1966, Birds of North America, Western Publishing Co., Inc., New York.

Human Ecology

Hubbard, Evans G: History of Wilton, typewritten document.

Vanhooosear, David H., 1895, The History of Wilton

Wilton: 1970, League of Women Voters Handbook

Interviews: Mrs. Cora Weir Burlingham
Mrs. Eugenia Leary Slaughter
Ms. Natalie Perry, Wilton Historical Society, 249 Dandury Rd.,
Wilton, Connecticut