



# WEIS ECOLOGY CENTER

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ENVIRONMENTAL  
EDUCATION



## A Preliminary list of the vascular plants of the Conservancy tract of the Weis Ecology Center



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January, 1978

Foreword.....

Today many natural areas near cities are being developed and converted into housing complexes, highways, and asphalt-covered recreational areas. The Conservancy Tract of the Weis Ecology Center is a fortunate exception. It is, as Aldo Leopold once wrote, "...a base-datum of normality, a picture of how healthy land maintains itself as an organism."

The relatively undisturbed Conservancy is readily used as an outdoor classroom for studying nature close at hand. It is a complex system of natural households \_\_\_or, more simply, a complex of ecosystems. All ecosystems \_\_\_for example, those of ponds, forests, streams, and meadows \_\_\_ are ultimately dependent upon green plants, which not only make available life-sustaining oxygen to other living things, but also manufacture food in the form of buds, twigs, leaves, fruits, and seeds for other living things incapable of making their own food.

While some animals rarely eat plants, they are directly or indirectly dependent upon those that do. Plants are basic to an ecosystem. It is important to learn their names and how to identify them. Then the relative importance of each plant species within an ecosystem can be systematically studied. Furthermore, it is important to be able to identify and record the various plant species of an area in order to determine whether rare or unusual species requiring protection or special attention are present, to determine the extent to which harmful or beneficial plants are present, and lastly, to simply record what exists, realizing that such information may eventually prove useful to someone.

The following list is only preliminary. It includes most but not all of the vascular plant species to be found in the Conservancy. If you discover something new, tell the staff. Do not pick the plant, but rather take a knowledgeable staff member to the discovery site to inspect your find. Your willingness to help the Center expand its botanical inventory will be greatly appreciated.

Happy Hunting!

Joseph T. Bridges  
Director

## Introduction

The Weis Ecology Center in Ringwood, New Jersey, is a recently incorporated center for environmental education. It is located in the Highlands region of northern New Jersey, an area of hills, narrow valleys, and flattened ridges. The relatively undisturbed seventy acre woodland of the Conservancy Tract is rectangular in shape and protrudes for the greater part of its length into the 2400 - acre Norvin Green State Forest. The long axis of the Conservancy Tract runs NE-SW along the valley and adjacent steep slopes of the Blue Mine Brook (Fig. 1.). The Blue Mine Brook originates near the western end of the Conservancy and flows in a southwesterly direction within and along its southern boundary. The land rises from the brook valley toward a ridge near the northern boundary. The topography is varied and includes the brook, its gently sloping valley, and the steep ridge slopes to the north. Distinct plant communities correspond to these topographical variations.

The valley floor is occupied by a Mixed Oak Forest characteristic of the mesic New Jersey uplands (Robichaud and Buell, 1973). A mixture of Red, Black and White Oak dominates the forest canopy, although Chestnut Oak, Sweet Birch and Red Maple are also common. The Flowering Dogwood is a common understory tree, and in the shrub layer Maple-leaf Viburnum is the prominent species. In low areas along the brook and in areas underlain by poorly drained Ridgebury Very Stony Loam, Yellow Birch, Red Maple, Spicebush, and Sweet Pepperbush occur, along with abundant Cinnamon Fern and New York Fern.

As one ascends the drier, south-facing slope toward the ridge tops, the mixed oaks gradually yield to a mixture of White Oak and Chestnut Oak. The latter soon becomes the most common ridge top tree. Mountain Laurel is broadly scattered on the dry slopes. Blueberry, Black Huckleberry and grasses are also common on the rocky ridge tops.

The disturbed areas of the Conservancy Tract have a different physiognomy from the rest of the woodland. Conspicuous trailside plants include Poison Ivy, Virginia Creeper, Blackberry, Japanese Honeysuckle and Lady Fern. These trailside species are also abundant in the area surrounding the remains of the Winfield Farm, which was in fact the site of a small cluster of dwellings until 1910. Its cellar holes are "now slowly closing like a dent in dough".<sup>1</sup> Winfield Farm hosts Quaking Aspen, White Ash, Gray Birch, Apple, and a few Black Walnut trees. The conspicuous shrubs and creepers are Smooth and Staghorn Sumac, Poison Ivy, Japanese Honeysuckle, Virginia Creeper, Red-Panicle Dogwood, and Blackberry.

1. Robert Frost, "Directive", in Complete Poems of Robert Frost. Holt, Rinehart and Winston, New York. 1962.

Grasses are abundant, with Enchanter's Nightshade, Avens, Buttercup, and several species of Goldenrod and Aster among the other common herbs.

Since an inventory of the plant species and other living things is a logical first step in planning future research and educational programs at the Center, a list of the vascular plants was begun in July, 1977. Collection and identification of plants was carried out until the end of October of the same year.

The preliminary list of the vascular flora of the Conservancy Tract includes 144 species representing 61 different plant families including 123 species of flowering plants, 3 species of conifers, 15 fern species, 2 species of Lycopodium, and 1 species of Equisetum. Because the study was carried out during the summer and fall months, the list does not include many of the herbaceous spring-flowering plants. The Sedge family (Cyperaceae) and the Grass family (Gramineae) are also incompletely recorded and their species identification by others is strongly encouraged.

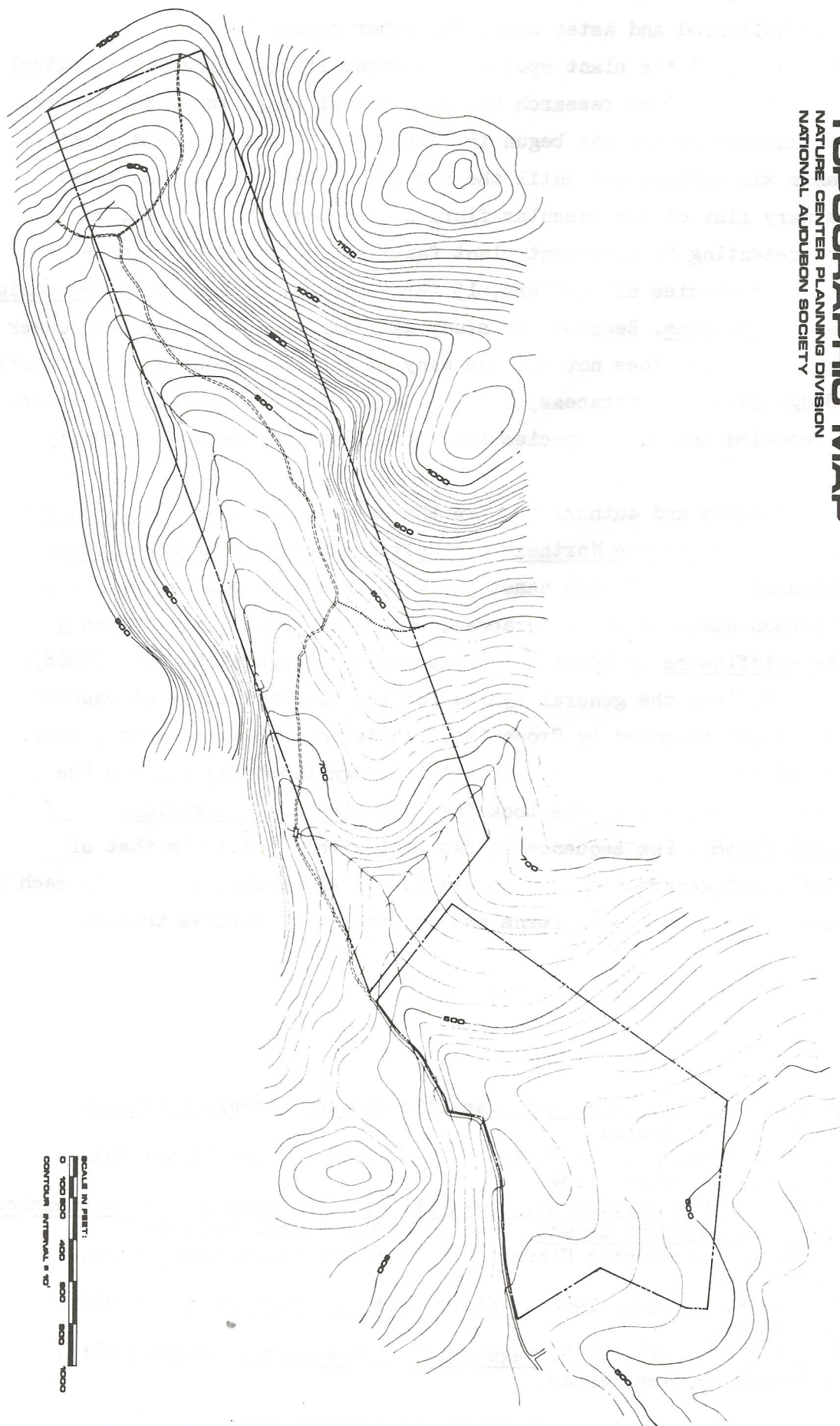
All scientific names and authorities are those found in The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada, by Henry A. Gleason (1952). Common names are also from this source, with the exception of common names of the Asteraceae, which are taken largely from A Field Guide to Wildflowers by Roger Tory Peterson and Margaret McKenny (1968). The species list follows the general system for the classification of vascular plants (Embryobionta) proposed by Cronquist, Takhtajan, and Zimmermann (1966). Classification of the flowering plants (Division Magnoliophyta) follows the system proposed by Cronquist in his book The Evolution and Classification of Flowering Plants (1968). The sequence of families within orders is that of Cronquist (1968), and genera and species are listed alphabetically within each family. The classification of the ferns and their allies follows that of Nayar (1970).

#### References

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FIGURE 1.

WEIS ECOLOGY CENTER  
**TOPOGRAPHIC MAP**  
NATURE CENTER PLANNING DIVISION  
NATIONAL AUDUBON SOCIETY



SCALE IN FEET:  
0 100 200 400 600 800 1000  
CONTOUR INTERVAL = 10'

VASCULAR PLANT FLORA OF THE CONSERVANCY TRACT  
OF THE WEIS ECOLOGY CENTER, RINGWOOD, NEW JERSEY

SUMMER - FALL

1977

DIVISION: Lycopodiophyta

Class: Lycopodiopsida

Order: Lycopodiales

Family: Lycopodiaceae

Lycopodium complanatum L. var. flabelliforme. Ground Cedar

Lycopodium obscurum L. Ground Pine

DIVISION: Equisetophyta

Class: Equisetopsida

Order: Equisetales

Family: Equisetaceae

Equisetum arvense L. Common Horsetail

DIVISION: Polypodiophyta

Class: Filicopsida

Subclass: Ophioglossidae

Order: Ophioglossales

Family: Ophioglossaceae

Botrychium virginianum L. Rattlesnake Fern

Subclass: Filicidae

Order: Osmundales

Family: Osmundaceae

Osmunda cinnamomea L. Cinnamon Fern

Osmunda Claytoniana L. Interrupted Fern

Osmunda regalis L. Royal Fern

Order: Schizaeales

Family: Adiantaceae

Adiantum pedatum L. Maidenhair

Order: Cyatheaales

Family: Dennstaedtiaceae

Dennstaedtia punctilobula (Michx.) Moore. Hay-scented Fern

Pteridium aquilinum (L.) Kuhn. Bracken

Family: Dryopteridaceae

Athyrium Filix-femina (L.) Roth. Lady Fern

Athyrium thelypteroides (Michx.) Desv. Silvery Spleenwort

Dryopteris marginalis (L.) Gray. Marginal Shield-fern

Onoclea sensibilis L. Sensitive Fern

Polystichum acrostichoides (Michx.) Schott. Christmas Fern

Family: Thelypteridaceae

Thelypteris hexagonoptera (Michx.) Weatherby. Broad Beech-fern

Thelypteris noveboracensis (L.) Nieuwl. New York Fern

Order: Gleicheniales

Family: Polypodiaceae

Polypodium vulgare L. Common Polypody

DIVISION: Pinophyta

Subdivision: Pinicae

Class: Pinopsida

Order: Pinales

Family: Pinaceae

Pinus rigida Mill. Pitch Pine

Tsuga canadensis (L.) Carr. Hemlock

Family: Cupressaceae

Juniperus virginiana L. Red Cedar

DIVISION: Magnoliophyta

Class: Magnoliopsida

Subclass: Magnoliidae

Order: Magnoliales

Family: Magnoliaceae

Liriodendron tulipifera L. Tulip-tree

Family: Lauraceae

Lindera Benzoin (L.) Blume. Spice-bush

Sassafras albidum (Nutt.) Nees. Sassafras

Order: Ranunculales

Family: Ranunculaceae

Actaea alba (L.) Mill. Baneberry

Ranunculus acris L. Buttercup

Family: Berberidaceae

Berberis Thunbergii DC. Japanese Barberry

Subclass: Hamamelidae

Order: Hamamelidales

Family: Hamamelidaceae

Hamamelis virginiana L. Witch Hazel

Order: Urticales

Family: Urticaceae

Pilea pumila (L.) Gray. Clearweed

Order: Juglandales

Family: Juglandaceae

Carya glabra (Mill.) Sweet. Pignut

Carya ovata (Mill.) K. Koch. Shagbark Hickory

Juglans nigra L. Black Walnut

Order: Myricales

Family: Myricaceae

Myrica asplenifolia L. Sweet Fern

Order: Fagales

Family: Fagaceae

Castanea dentata (Marsh.) Borkh. Chestnut

Fagus grandifolia Ehrh. Beech

Quercus alba L. White Oak

Quercus borealis Michx. f. Red Oak

Quercus prinus L. Chestnut Oak

Quercus velutina Lam. Black Oak

Family: Betulaceae

Alnus serrulata (Ait.) Willd. Smooth Alder

Betula lenta L. Sweet Birch

Betula lutea Michx. f. Yellow Birch

Betula populifolia Marsh. Gray Birch

Carpinus caroliniana Walt. Hornbeam

Corylus cornuta Marsh. Beaked Hazel

- Subclass: Caryophyllidae  
Order: Caryophyllales  
Family: Caryophyllaceae  
Dianthus deltoides L. Pink  
Order: Polygonales  
Family: Polygonaceae  
Polygonum caespitosum Blume. Smartweed  
Rumex acetosella L. Red Sorrel  
Rumex crispus L. Sour Dock  
Subclass: Dilleniidae  
Order: Malvales  
Family: Tiliaceae  
Tilia americana L. Basswood  
Order: Salicales  
Family: Salicaceae  
Populus tremuloides Michx. Quaking Aspen  
Order: Ericales  
Family: Clethraceae  
Clethra alnifolia L. Sweet Pepper-bush  
Family: Ericaceae  
Epigaea repens L. Trailing Arbutus  
Gaylussacia baccata (Wang.) K. Koch. Huckleberry  
Kalmia latifolia L. Mountain Laurel  
Rhododendron maximum L. Rose-bay Rhododendron  
Vaccinium corymbosum L. High-bush Blueberry  
Vaccinium vacillans Torr. Blueberry  
Family: Pyrolaceae  
Chimaphila maculata (L.) Pursh. Spotted Wintergreen  
Pyrola elliptica Nutt. Shinleaf  
Family: Monotropaceae  
Monotropa uniflora L. Indian Pipe  
Pterospora andromedea Nutt. Pine Drops  
Order: Diapensiales  
Family: Diapensiaceae  
Galax aphylla L. Beetleweed  
Order: Primulales  
Family: Primulaceae  
Lysimachia quadrifolia L. Loosestrife  
Trientalis borealis Raf. Star-flower  
Subclass: Rosidae  
Order: Rosales  
Family: Rosaceae  
Amelanchier canadensis (L.) Medic. Shad-bush  
Geum canadense Jacq. White Avens  
Potentilla canadensis L. Cinquefoil  
Prunus serotina Ehrh. Wild Cherry  
Pyrus Malus L. Apple  
Family: Leguminosae  
Amphicarpa bracteata (L.) Fern. Hog Peanut  
Strophostyles umbellata (Muhl.) Britt. Wild Bean



Subclass: (Rosidae (cont.))

Order: Myrtales

Family: Onagraceae

Circaea quadrisulcata (Maxim.) Franch. & Sav. Enchanter's Nightshade

Order: Cornales

Family: Nyssaceae

Nyssa sylvatica Marsh. Sour Gum

Family: Cornaceae

Cornus florida L. Flowering Dogwood

Cornus racemosa Lam. Dogwood

Order: Celastrales

Family: Celastraceae

Euonymus atropurpureus Jacq. Wahoo

Order: Rhamnales

Family: Vitaceae

Parthenocissus quinquefolia L. Virginia Creeper

Order: Sapindales

Family: Aceraceae

Acer rubrum L. Red Maple

Acer saccharum Marsh. Sugar Maple

Family: Anacardiaceae

Rhus Copallinum L. Shining Sumac

Rhus glabra L. Smooth Sumac

Rhus radicans L. Poison Ivy

Rhus typhina L. Staghorn Sumac

Order: Geraniales

Family: Geraniaceae

Geranium maculatum L. Wild Geranium

Family: Oxalidaceae

Oxalis stricta L. Wood Sorrel

Order: Polygalales

Family: Polygalaceae

Polygala paucifolia Willd. Flowering Wintergreen

Order: Umbellales

Family: Araliaceae

Aralia nudicaulis L. Wild Sarsaparilla

Panax trifolium L. Dwarf Ginseng

Family: Umbelliferae

Daucus Carota L. Queen Anne's Lace

Hydrocotyle americana L. Water Pennywort

Subclass: Asteridae

Order: Lamiales

Family: Lamiaceae

Collinsonia canadensis L. Horse-balm

Glechoma hederacea L. Ground Ivy

Lycopus virginicus L. Bugle-weed

Prunella vulgaris L. Self-heal

Order: Scrophulariales

Family: Oleaceae

Fraxinus americana L. White Ash

Family: Scrophulariaceae

Chelone glabra L. Turtlehead

Linaria vulgaris Hill. Butter-and-eggs

- Family: Scrophulariaceae (cont.)  
Melampyrum lineare Desr. Cow-wheat  
Pedicularis canadensis L. Lousewort
- Family: Orobanchaceae  
Conopholis americana (L.) Wallr. Squaw-root  
Epifagus virginiana (L.) Bart. Beech-drops
- Family: Bignoniaceae  
Campsis radicans (L.) Seem. Trumpet Creeper
- Order: Campanulales  
Family: Campanulaceae  
Lobelia inflata L. Indian Tobacco
- Order: Rubiales  
Family: Rubiaceae  
Galium lanceolatum Torr. Bedstraw  
Mitchella repens L. Partridge Berry
- Order: Dipsacales  
Family: Caprifoliaceae  
Lonicera japonica Thunb. Japanese Honeysuckle  
Sambucus canadensis L. Common Elder  
Viburnum acerifolium L. Maple-leaf viburnum  
Viburnum dentatum L. Arrowwood  
Viburnum prunifolium L. Black Haw
- Order: Asterales  
Family: Asteraceae  
Achillea Millefolium L. Yarrow  
Aster acuminatus Michx. Whorled Wood Aster  
Aster pilosus Willd.  
Aster puniceus L. Purple-stemmed Aster  
Aster umbellatus Mill. Flat-topped White Aster  
Chrysanthemum Leucanthemum L. Ox-eye Daisy  
Eupatorium purpureum L. Joe-Pye Weed  
Hieracium paniculatum L. Hawkweed  
Prenanthes altissima L. White Lettuce  
Solidago bicolor L. Silver-rod  
Solidago flexicaulis L. Zigzag Goldenrod  
Solidago graminifolia (L.) Salisb. Lance-leaved Goldenrod  
Solidago puberula Nutt. Downy Goldenrod  
Solidago rugosa Mill. Rough-stemmed Goldenrod  
Solidago squarrosa Muhl. Stout Goldenrod
- Class: Liliopsida  
Subclass: Commelinidae  
Order: Cyperales  
Family: Graminaeae  
Panicum clandestinum L. Panic-grass
- Subclass: Arecidae  
Order: Arales  
Family: Araceae  
Arisaema triphyllum (L.) Schott. Jack-in-the-pulpit  
Symplocarpus foetidus (L.) Nutt. Skunk Cabbage

- Subclass: Liliidae  
Order: Liliales  
Family: Liliaceae  
Maianthemum canadense Desf. Wild lily of the valley  
Medeola virginiana L. Indian cucumber-root  
Polygonatum biflorum (Walt.) Ell. Solomon's Seal  
Smilacina racemosa (L.) Desf. False Solomon's Seal  
Uvularia sessilifolia L. Bellwort  
Veratrum viride Ait. False Hellebore  
Family: Iridaceae  
Sisyrinchium mucronatum Michx. Blue-eyed Grass  
Family: Smilacaceae  
Smilax glauca Walt. Greenbrier  
Order: Orchidales  
Family: Orchidaceae  
Cypripedium acaule Ait. Stemless Lady-slipper

GENUS ONLY

- Subclass: Dilleniidae  
Order: Ericales  
Family: Ericaceae  
Rhododendron sp. (An azalea)  
Subclass: Rosidae  
Order: Rosales  
Family: Rosaceae  
Crataegus sp.  
Rosa sp. (not multiflora)  
Rubus spp. (2)  
Subclass: Asteridae  
Order: Rubiales  
Family: Rubiaceae  
Galium sp.  
Subclass: Liliidae  
Order: Liliales  
Family: Iridaceae  
Sisyrinchium sp.

