

Preliminary Ecological Assessment
of the Murray Farm, Section 23-25-26
of Old Mission Peninsula, Peninsula Township
Grand Traverse County, Michigan

William C. Scharf, Ph.D.
Professor of Biological Science
Northwestern Michigan College
Traverse City, Michigan 49684
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INTRODUCTION

A field identification of the living resources of the 514 Acre Murray Farm near the end of the Old Mission Peninsula was made on parts of four days between 27 August and 01 September 1988. The scope of this work considered and included wildlife, vegetation, ecosystems, agricultural and wilderness values. Most plants were visually identifiable, and some specimens of unfamiliar plants were collected to key out later. The twenty five plus years of experience, research, and publication of the author were drawn on to evaluate these lands for possible preservation. This report documents the desirability for public ownership of these lands as opposed to development for intensive residential and vacation properties, necessitating the subsequent break-up of the single large parcel, construction of access roads, and probable waterfront development associated with such a large real-estate undertaking on these near-pristine shorelands.

METHODS

The boundaries, and much of the interior of the forested portions of the 514 Acres were covered by truck and on foot. High winds, high temperatures, and rain all were encountered during the brief period covered by this report. Seasonal timing for floristic assessment and identification was less than ideal. That is, several of the spring flowering species were done blooming, and in many cases the leafy portions, fruits, or even the remains of the plant was all that was left for identification. Therefore, the short time frame and the phenology should be borne in mind in the case of possible omissions or errors.

The assessment of the bird and mammal fauna should ideally take several seasons of trapping and netting. This is a task I look forward to should this property become the trust of some form of public or quasi-public preservation group. Even though the Fall migration of birds was underway, the species recorded in this brief period must be a small fraction of what is undoubtedly an important migration funnel area. Binocular identification of birds was made by the author, and scats, actual sitings, and tracks of the large mammals were used as evidence of their presence.

RESULTS

Vegetation and Wildlife

1. The Orchards

Orchards of varying ages and productivity are present. The less productive Tart Cherries have the greatest significance for wildlife, and have began their reversion to the shrub stages of ecological succession. Large amounts of Chinese Elm (Ulmus pumila) originally planted as a windbreak have now begun to invade between the rows of Tart Cherries, and form excellent cover for migrating birds. In addition, there are a few places where intolerant forest trees of Trembling Aspen (Populus tremuloides) Ash (Fraxinus americanus) and Staghorn Sumac (Rhus typhina) are invading along the shore terrace forest edge, along a vegetated gully, and at a pond originally dug as a supply of orchard spraying water. The aforementioned brush areas, and several windbreaks of Lombardy Poplar (Populus lombardii), White Pine (Pinus strobus) and Red Pine (Pinus resinosa) are the important wildlife habitats in the orchard areas. Red Fox (Vulpes vulpes), Skunk (Mephitis mephitis), and Raccoon (Procyon lotor) were observed in this area. In addition, Meadow Voles (Microtus pennsylvanicus), Prairie Deer Mice (Peromyscus maniculatus bairdi), Short Tailed Shrews (Blarina brevicauda), and occasional deer (Odocoileus virginianus) and toads (Bufo americanus) are likely to live here. A more complete list of old field species of plants, and list of birds seen is found in the appendix. The more productive orchards which include Sweet Cherries, Plums, Pears, and Apples have less wildlife value.

2. The Woodlands

The bluffs and terraces corresponding to the post-glacial lake levels are wooded with a mix of Northern Hardwood on the higher elevations, and White pine, Hemlock (Tsuga canadensis), White Cedar, (Thuja occidentals) nearer to the shore. There are many places where the hardwoods characterized by Sugar Maple (Acer saccharum), Beech (Fagus grandiflora), Basswood (Tilia Americana), and Ash (Fraxinus americana) come right down to the shore. This is particularly noticeable where the bluff is very steep and heavy clay-gravel soils are found. The coniferous area are on lower sandier soils near the Lighthouse Park.

The ecological significance of these forested lands is probably greatest as a refuge for a variety of woodland plants and animals. It is particularly important for a cover for migrating woodland bird species. A partial list of some of the migrants found here is attached in the appendix. Woodland birds residing here year around are Black-capped Chickadee, Hairy, Downy and Pileated Woodpeckers, White-Breasted and Red-Breasted Nuthatches as well as the Wood Pee Wee, Oven bird, and Red Start Warbler. Mammal species common here are the Woodland Deer mouse (Peromyscus maniculatus graciis), Short-tailed Shrew (Blarina brevicauda), Eastern Chipmunk (Tamias striatus). The Skunks, foxes, raccoons and occasional deer mentioned in the orchard section use the woods for denning and bedding.

There are quantities of merchantable timber in the wooded areas. The most valuable trees are maples and Red Oaks, (Quercus rubra). The steep erodible slopes would probably suffer some damage from timbering, but cutting these on the bluffs in the case of housing development would probably be precursor to construction. Representative woodlands of near climax maple-beech like this are becoming less common in the Grand Traverse Region. The associated ground flora of Jack-in-the-Pulpit (Arisamea atrorubens), Doll's Eyes (Actea rubra), Spinulose and Mariginal Wood Ferns (Dryopteris spinulosa and D. marginalis) and other species listed in the appendix are considered unusual by many people, although not yet endangered. This is a valuable well-developed woodland that could serve as an education-research resource as well as a refuge for migrating birds as they are funneled to and through the Old Mission peninsula in both Spring and Fall.

3. The Shore Lands

The beaches are narrow and composed mainly of cobble stones. This is typical of headland areas receiving the brunt of winter storms. Ecologically, this leads to a lack of dune-land vegetation usually found in proximity of sandy beaches. There are, however, some areas of Sand-bar Willow (Salix sp.), Smartweed (Polygonum sp.) but no evidence was found for Huron Tansy (Tanacetum huronense) or Pitcher's Thistle (Cirsium pitcheri).

There is evidence of beach use by some recreational vehicles as well as camp fires. The lack of sandy beaches, no doubt diminishes the shore's value for recreational development.

However, the very nature of the rocky area makes it ideal for shorebirds feeding on invertebrates. It is doubtful whether shorebirds have enough room or desirable area for nesting on these shores, but surely they are of value for migrating flocks feeding and resting sites. It is probable that one of the shorebird species using these beaches for feeding would be the endangered Piping Plover although from my personal experience, the beach is probably not of a quality to provide nesting habitat for the Piping Plover.

SUMMARY

The living resources of the Murray Farm are neither unique nor endangered as determined by this assessment. However, the location as a bird migration funnel and nesting refuge, the importance of its beaches to feeding shorebirds, the well developed climax forests holding highly erodible bluffs and terraces in place, and the extent of this large wild, undeveloped area in close proximity to a rapidly growing human population make it highly desirable to preserve this land as a remnant of a shore land ecosystem which is rapidly disappearing.

Appendix - Species List

1. Orchard Land Old Field and Open Land: Includes old field and scattered small trees

Trees: (scattered clumps)

Asa	<u>Fraxinus americana</u>
Scotch Pine	<u>Pinus sylvestris</u>
Red Maple	<u>Acer rubrum</u>
Pin Cherry	<u>Prunus pennsylvanica</u>
June Berry	<u>Amelanchier humilis</u>
Lombardy Poplar	<u>Populus lombardii</u>
Trembling Aspen	<u>Populus tremuloides</u>

Shrubs:

Sumac	<u>Rhus typhina</u>
Autumn Olive	<u>Eleagnus sp.</u>
Chinese Elm	<u>Ulmus pumila</u>

Herbs:

Affalfa	<u>Medicago sativa</u>
Alyssum, Hoary	<u>Alyssum alysioides</u>
Asparagus	<u>Asparagus officinalis</u>
Blue Grass	<u>Poa praetensis</u>
Blue Grass, Canada	<u>P. canadensis</u>
Brome Grass	<u>Bromus inermis</u>
Campion, Bladder	<u>Silene vulgaris</u>
Campion, White	<u>S. alba</u>
Carrot, Wild	<u>Daucus carota</u>
Chickweed	<u>Stellaria media</u>
Clover, Red	<u>Trifolium pratense</u>
Daisy	<u>Chrysanthemum leucanthemum</u>
Fleabane	<u>Erigeron philadelphicus</u>
Goat's Beard	<u>Troglodytes dubius</u>
Goldenrod	<u>Solidago sp.</u>
Grape, Wild	<u>Vitis sp.</u>
King Devil	<u>Hieracium pilloselloides</u>
Mallow	<u>Malva neglecta</u>
Milkweed	<u>Asclepias syriaca</u>
Pearly Everlasting	<u>Anaphalis margaritacea</u>
Orchard Grass	<u>Dactylis glomerata</u>
Potentilla	<u>Potentilla recta</u>
Quack Grass	<u>Agropyron repens</u>
Ragweed	<u>Ambrosia artemisiifolia</u>
Sheep Sorrel	<u>Rumex acetosella</u>
St. John's Wort	<u>Hypericum perforatum</u>
Star Thistle	<u>Centaurea maculosa</u>
Strawberry	<u>Fragaria virginiana</u>
Timothy	<u>Phleum pratense</u>
Vetch	<u>Vicia sativa</u>
Potentilla	<u>Potentilla recta</u>
Quack Grass	<u>Agropyron repens</u>
Ragweed	<u>Ambrosia artemisiifolia</u>
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Strawberry	<u>Fragaria virginiana</u>
Timothy	<u>Phleum pratense</u>
Vetch	<u>Vicia sativa</u>
Yarrow	<u>Achillea millefolium</u>

Appendix - Species List

2. Woodland Species List

Trees:

Beech
Sugar Maple
Basswood
Large Tooth Aspen
Quaking Aspen
Iron wood
American Ash
Red Oak
Red Maple
White Cedar
Red Cedar
White Pine

Fagus grandifolia
Acer saccharum
Tilia americana
Populus grandidentata
Populus tremuloides
Ostrya virginiana
Fraxinus americanus
Quercus rubra
Acer rubrum
Thuja occidentalis
Pinne Resinosa
Pinus Strolosus

Shrubs:

Bush Honeysuckle
Ribes
Canada Yew
June Berry
Witch Hazel

Diervilla lonicera
Ribes cynosbati
Taxus canadensis
Amelanchier humilis
Hamemalis virginiana

Ferns and Aquatics:

Spinulose Shield Fern
Bracken Fern
Marginal Woodfern

Dryopteris spinulosa
Pteridium aquiclinium
D. marginalis

Flowering Plants:

Canada Mayflower
Solomon's Seal
False Solomon's Seal
Leek
Sessile Bellwort
Bead Lily
Jack-in-the-Pulpit
Adder's Tongue
Blue Cohosh
Downy Yellow Violet
Violet Sp.

Round Leaf Pyrola
Partridge Berry
Liver Leaf
No. Lopseed
Barreberry
Doll's Eyes
Sweet Cicely
Herb Robert
Wild Licorice
Sweet Scented Bedstraw
Wild Sasparilla
Star Flower

Trillium

Mianthemum canadense
Polygonatum pubescens
Smilacina racemosa
Allium tricoccum
Uvularia sessilifolia
Clintonia borealis
Arisaema atrorubens
Erythronium americanum
Caulophyllum thalictroides
Viola pubescens
probably V. canadensis and V.
conspensa
Pyrola rotundifolia
Mitchella repens
Hepatica acutiloba
Phryma leptostachya
Actea rubra
Actea pachypoda
Osmorrhiza claytoni
Geranium robertianum
Galium lanceolatum
Galium triflorum
Aralia nudicaulis
Trientalis borealis
Trillium grandiflorum

APPENDIX - Bird List - Checks indicate birds present

GAVIIFORMES

Gaviidae
 Common Loon

PODICIPEDIFORMES

Podicipediidae
 Pied-billed Grebe

PELICANIFORMES

Pelecanidae
 White Pelican
 Phalacrocoracidae
 Double-crested Cormorant

CICONIFORMES

Ardeidae
 Great Blue Heron
 Green Heron
 American Bittern

ANSERIFORMES

Anatidae
 Whitsling Swan
 Canada Goose
 Snow Goose
 Blue Goose
 Mallard
 Mute Swan
 Black Duck
 Pintail
 Green-winged Teal
 Blue-winged Teal
 Shoveler
 Wood Duck
 Redhead
 Ring-necked Duck
 Canvasback
 Greater Scaup
 Lesser Scaup
 Common Goldeneye
 Bufflehead
 Ruddy Duck
 Hooded Merganser
 Common Merganser
 Red-breasted Merganser

FALCONIFORMES

Cathartidae
 Turkey Vulture
 Accipitridae
 Goshawk (Accipiters)
 Sharp-shinned Hawk
 Cooper's Hawk
 Red-tailed Hawk (Buteos)
 Red-shouldered Hawk
 Am Rough-legged Hawk
 (Eagles)
 Golden Eagle
 Bald Eagle
 Marsh Hawk (harrier)

Pandionidae
 Osprey

Falconidae (falcons)
 Peregrine Falcon
 Pigeon Hawk (Merline)
 Sparrow Hawk (Kestrel)

GALLIFORMES

Tetraonidae
 Spruce Grouse
 Ruffed Grouse
 Gr. Prairie Chicken
 Sharptail Grouse
 Phasianidae
 Bobwhite
 Ring-necked Pheasant

GRUIFORMES

Gruidae
 Sandhill Crane
 Rallidae
 Sora
 American Coot

CHARADRIIFORMES

Charadriidae
 Killdeer

Scolopacidae

Am. Woodcock
 Common Snipe
 Upland Plover
 Spotted Sandpiper
 Greater Yellowlegs
 Lesser Yellowlegs

Laridae

Herring Gull
 Ring-billed Gull
 Black Tern

COLUMBIFORMES

Columbidae
 Morning Dove

CUCULIFORMES

Cuculidae
 Yellow-billed Cuckoo
 Black-billed Cuckoo

STRIGIFORMES

Tytonidae
 Barn Owl
 Strigidae
 Screech Owl
 Great Horned Owl
 Snowy Owl
 Barred Owl
 Great Gray Owl
 Long-eared Owl
 Short-eared Owl
 Saw-whet Owl

CAPRIMULGIFORMES

Caprimulgidae
 Whip-poor-will
 Common Nighthawk

APODIFORMES

Apodidae
 Chimney Swift
 Trochilidae
 Ruby-throated Hummingbird

Appendix - Bird List - Checks indicate birds present

CORACIIFORMES

Alcedinidae

Belted Kingfisher

PICIFORMES

Picidae

Yellow-shafted Flicker
 Pileated Woodpecker
 Red-bellied Woodpecker
 Red-headed Woodpecker
 Yellow-bellied Sapsucker
 Hairy Woodpecker
 Downy Woodpecker

PASSERIFORMES

Tyrannidae

Eastern Kingbird
 Great Crested Flycatcher
 E. Phoebe
 Yellow-bellied Flycatcher
 E. Wood Pewee
 Olive-sided Flycatcher

Alaudidae

Horned Lark

Hirundinidae

Tree Swallow
 Bank Swallow
 Rough-winged Swallow
 Barn Swallow
 Cliff Swallow
 Purple Martin

Corvidae

Blue Jay
 Common Raven
 Common Crow

Paridae

Black-capped Chickadee
 Tufted Titmouse

Sittidae

White-breasted Nuthatch
 Red-breasted Nuthatch

Certhiidae

Brown Creeper

Troglodytidae

House Wren
 Long-billed Marsh Wren

Mimidae

Mockingbird
 Catbird
 Brown Thrasher

Turdidae

Robin
 Wood Thrush
 Hermit Thrush
 Swainson's Thrush
 Gray Cheeked Thrush
 Veery
 Eastern Bluebird

Sylviidae

Golden-crowned Kinglet
 Ruby-crowned Kinglet

Bombycillidae

Bohemian Waxwing
 Cedar Waxwing

Laniidae

Northern Shrike
 Loggerhead Shrike

Sturnidae

Starling

Vireonidae

Red-eyed Vireo
 Philadelphia Vireo

Parulidae

Black-and-white Warbler
 Prothonotary Warbler
 Tennessee Warbler
 Nashville Warbler
 Parula Warbler
 Bay Breasted Warbler
 Cape May Warbler
 Yellow Warbler
 Magnolia Warbler
 Myrtle Warbler
 Blackburnian Warbler
 Chestnut-sided Warbler

Blackpoll Warbler

Pine Warbler
 Kirtland's Warbler
 Palm Warbler
 Ovenbird
 Maryland-Yellowthroat
 Am. Redstart

Ploceidae

House Sparrow

Icteridae

Bobolink
 E. Meadowlark
 Red-winged Blackbird
 Baltimore Oriole
 Rusty Blackbird
 Common Grackle
 Brown-headed Cowbird

Thraupidae

Scarlet Tanager

Fringillidae

Cardinal
 Rose-breasted Grosbeak
 Indigo Bunting
 Dickcissel
 Evening Grosbeak
 Common Redpoll
 Pine Siskin
 American Goldfinch
 Red Crossbill
 Rufous-sided Towhee
 Vesper Sparrow
 Slate-colored Junco
 Tree Sparrow
 Chipping Sparrow
 Field Sparrow
 Snow Bunting
 Song Sparrow
 Fox Sparrow
 White-crowned Sparrow
 White-throated Sparrow