

REPORT ON VEGETATION AND WILDLIFE HABIT AT PRESENT ON  
LANDS OWNED BY THE GRAND TRAVERSE RESORT IN  
SECTIONS 26,2,34,35 OF ACME TOWNSHIP,  
GRAND TRAVERSE COUNTY, MICHIGAN

*Revised*

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## INTRODUCTION

The following inventory of the vegetation and wildlife of property owned by the Grand Traverse Resort in Sections 26, 27, 34, and 35 of Acme Township, Grand Traverse County, Michigan was undertaken by Dr. William C. Scharf at the request of attorney James Olson on behalf of the owners. The purpose of this research was to assist the owners in determining the suitability of the property for development for recreational and resort use. I conducted field work on five occasions in the late summer and early autumn of 1989: 02 September, 07 September, 27 September, 14 October, and 15 October. During the field work I transected the property on foot while making visual identifications of some species and collecting specimens of other species for more detailed microscope examination in the laboratory. It should be noted that at the time this study was commissioned in late summer, many flowering plants had finished blooming. Consequently, some identifications of such species were based on vegetative parts, seeds, and in some cases on my prior knowledge of this region and this property during the spring season. The assessment of wildlife present on the property is based upon the actual evidence observed on the site, and my considerable experience with and knowledge of this area of the Grand Traverse Region.

The property under consideration encompasses ten distinct habitat types, and this report will consider each separately. The numbering system established here for the zones is arbitrary and intended only to enhance the clarity of this report. The geographic

parameters of the zones are detailed on the aerial photograph found in Appendix 2 which is attached to the end of the report. Zone 1 is referred to as the former orchard-lands, and consists of several hundred acres, primarily in the eastern half of the property bounded by M-31, that are either under commercial cultivation for cherries, Apples and Peaches, or have reverted to open-fields. Zone 2 is referred to as the Red Pine plantation, and consists of a rectangular plantation of Red Pine trees approximately 15 meters wide and 300 meters long laying in the the middle of the former orchard-lands. Zone 3 is referred to as the former salvage yard, and consists of several acres of land adapted to the outdoor storage of derelict automobiles and other salvage material and which occupy the middle southeast part of the property. Zone 4 is referred to as the ponds west of the former salvage yard and consists of two small ponds and the surrounding land which is to the West of the former salvage yard. Zone 5 is referred to as the Aspen grove behind the former salvage yard, and consists of an approximately two-acre area west of the former salvage yard with a densely vegetated Aspen grove. Zone 6 is referred to as the Jack Pine plantation, and consists of an "L"-shaped plantation of Jack Pines occupying the Southwest corner of the intersection of Dock Road and M-31. . Zone 7 is referred to as the upland woods, and consists of mature hardwood forests in several areas about the property. Zone 8 is referred to as the lowland woods, and consists of the thickly vegetated and somewhat swampy land in the western quarter of the property near Deep-Water Point Road and Dock Road. Zone 9 is referred to as the sewer-line clearing (dry) and consists of the dry portions of the land cleared to

accommodate a sewer-line which traverses the property in a roughly north to south manner. Zone 10 is referred to as the sewer-line clearing (wet) and consists of the southern-most stretch of the clearing where the ground and vegetation becomes more swamp-like. Zone 11 includes the two small, wooded spots on either side of the sewer line about 100 meters southeast of the well house.

Identification of the property's living resources and preparation of this report was completed following the names set forth in several field guides. The names of Wildflowers follow *Michigan Wildflowers* by Smith (1966), *Spring Flora of Wisconsin* by Fasset (1959), and *New Britton and Brown Illustrated Flora* by Gleason (1952). The names of ferns follow *Ferns of Michigan* by Billington (1952). The names of shrubs follow *Shrubs of Michigan*, also by Billington (1949). The names of trees follow *Michigan Trees* by Barnes and Wagner (1989). In addition, the assessment of the implications of certain species of plants for determining wetlands status was completed following the precedents established by the *National List of Plant Species That Occur in Wetlands: 1988 (Mich.)* NERC- 88/18.22 by Reed (1988). A brief discussion of these standards and how they were applied to this report can be found in Appendix 1 on pages 24 and 25.

## FINDINGS

### ZONE 1: THE FORMER ORCHARD-LANDS

Vegetation.

Flowering Plants:

Alyssum *Alyssum alyssoides*

Aster *Aster spinulosa*

Beggars Tick *Bidens frandosa*

Burdock *Arctium spinulosa*

Curly-leafed Dock *Rumex mexicanus*

Goldenrod *Solidago spinulosa*

Hoary Alyssum *Berteroa incana*

Lance-Leaf Plantain *Plantago lanceolata*

Little Bluestem *Andropogon scoparius*

Milkweed *Asclepias syriaca*

Mullein *Verbascum thapsus*

Pearly Everlasting *Anaphalis margaritacea*

Pigweed *Chenopodium album*

Prairie Rose *Rosa blanda*

Queen Ann's Lace *Daucus carota*

Red Clover *Trifolium pratense*

Salsify *Tragopogon porrifolius*  
Spotted Star Thistle *Centaurea maculosa*  
St. John's Wort *Hypericum perforatum*  
Vetch *Vicia americana*  
White Sweet-Clover *Melilotus alba*  
Wild Strawberry *Fragaria virginiana*  
Yarrow *Achillea millefolium*

Ferns, Lichens, and Mosses:

British Soldier Lichen *Cladonia cristatella*

Shrubs:

Autumn Olive *Elaeagnus umbellata*  
Prarie Rose *Rosa blanda*  
Red Elderberry *Sambucus pubens*  
Red Osier Dogwood *Cornus stolonifera*  
Siberean Elm *Ulmus pumila*  
Staghorn Sumac *Rhus typhina*  
Wild Grape *Vitis riparia*

Trees:

American Elm *Ulmus americana*  
Black Locust *Robinia pseudoacacia*  
Black Walnut *Juglans nigra*  
Domesticated Apple (derelict) *Malus pumila*  
Domesticated Cherry *Prunus cerasus*

Domesticated Peach    *Prunus persica*  
Lombardy Poplar    *Populus nigra*  
Peach-leaf Willow    *Salix amygdaloides*  
Scotch Pine    *Pinus sylvestris*  
White Ash    *Fraxinus americana*  
White Birch    *Betula papyrifera*  
White Cedar    *Thuja occidentalis*

Wildlife: Although the former orchard-lands appear to attract few permanent animal residents, this zone is yet frequented by many of the species residing in the forested areas on its borders. The only permanent mammal presence is suggested by the suitability of this habitat to such small, ground-dwelling mammals as Woodchucks (*Marmota monax*), Striped Skunks (*Mephitis mephitis*), Cottontail Rabbits (*Sylvalagus floridanis*), moles (*Scalopus aquaticus* and *Condylura cristata*), Short-tailed Shrews (*Blarina brevicauda*), meadow voles (*Microtus pennsylvanicus*) and Prairie Deer-Mice (*Peromyscus maniculatus bairdi*). The orchards are visited by Racoons (*Procyon lotor*), Red Fox (*Vulpes vulpes*), and large numbers of White-Tailed Deer (*Odocoileus virginianus*), the tracks and paths of which were particularly numerous.

The bird-life observed and inferred from the habitat present is typical of the open fields and orchards of Grand Traverse County. Numerous sparrows and warblers were observed. Other songbirds noted included: Robins, Meadowlarks, Rockdoves, Bluejays, Black-Capped Chickadees and Nuthatches (two species). The brushy margins of the orchards contain ideal habitat and food sources (the

wild grapes and deteriorating yet still producing apple trees in particular) for Ruffed Grouse and migrating Woodcock, although none were observed. The open areas of this zone offer suitable hunting grounds for larger birds of prey, and a Marsh Hawk was observed circling the former Selkirk orchard on the morning of 17 October.

### Zone 2: The Red Pine Plantation

#### Vegetation:

#### Flowering Plants:

Goldenrod *Solidago sp.*

Wild Strawberry *Fragaria virginiana*

Ferns, Lichens and Mosses: none observed.

#### Shrubs:

Staghorn Sumac *Rhus typhina*

#### Trees:

Red Pine *Pinus resinosa*

White Ash *Fraxinus americana*

Wildlife: Due to the fact that this long, thin strip of planted Red Pines is surrounded by the fields and active orchards of Zone 1,

the wildlife of this zone is only an extension of the species noted for Zone 1. All the species residing in or travelling through Zone 1 probably have occasion to use the Red Pines for cover and shelter. This same pattern holds true for bird activity in this area, although the Pines may attract a few of the orchard species as a sheltered place for nest construction. It is common to find Mourning Doves nesting in this type of habitat.

### Zone 3: The Former Salvage Yards

#### Vegetation:

##### Flowering Plants:

Canada Blue Grass    *Poa canadensis*

Goldenrod    *Solidago sp.*

Mullein    *Verbascum thaspus*

Queen Ann's Lace    *Daucus carota*

Wild Strawberry    *Fragraria virginiana*

##### Ferns, Lichens, and Mosses:

British Soldier Lichen    *Cladonia cristatella*

Bracken Fern    *Pteridium aquilinum*

Cup Lichen    *Cladonia pyxidada*

Hair Cap Moss    *Polytrichum commune*

Shrubs:

Staghorn Sumac    *Rhus typhina*

Common Red Raspberry    *Rubus idaeus*

Low Blackberry    *Rubus pubescens*

Trees:

Pin Cherry    *Prunus pennsylvanicus*

White Pine    *Pinus strobus*

Quaking Aspen    *Populus tremuloides*

Wildlife: This zone has the least attractive wildlife habitat and consequently few species reside here. The lack of ground-cover and other vegetation, sandy soil, and presence of considerable debris left from the salvage operations, probably all combine to deter most of the species using the orchardlands from all but occasional ventures across this area. The only species that might occupy this area permanently are Prairie Deer-Mice (*Peromyscus maniculatus bairdi*), Meadow Voles (*Microtus pennsylvanicus*) and perhaps Striped Skunks. For similar reasons this area seldom attracts the bird species using adjoining lands.

Zone 4: The Ponds West of the Former Salvage Yard

Vegetation: the wetland implications of each species are noted in brackets following the scientific name.

Flowering Plants:

BulRush *Scirpus fluviatilis* [obligate]

Canary-Reed Grass *Phalaris arundineacea* [facultative wetland (+)]

Devil's Beggars-Tick *Bidens frondosa* [facultative wetland]

Pepper Mint *Mentha peperita* [obligate]

Smartweed *Polygonum amphibium* [obligate]

Swamp Milkweed *Asclepias septentrionalis* [obligate]

Water Parsnip *Sium suave* [obligate]

Ferns, Lichens, and Mosses:

Bracken Fern *Pteridium aquilinum* [facultative upland]

Shrubs:

Hoary Willow *Salix candida* [obligate]

Staghorn Sumac *Rhus typhina* [not listed]

Trees:

American Elm *Ulmus americana* [facultative wetland (-)]

Sand Bar Willow *Salix interior* [obligate]

Wildlife: The ponds were nearly dry when observed in late summer. This area attracts the same mammal species found in the

orchard-lands. When the ponds contain water, they would serve as watering-holes for the areas mammals. The same holds true for the birds. In addition, the small ponds might occasionally attract wading birds such as Great Blue Herons, several of which have been noted in the vicinity especially on the grounds and golf courses of the Grand Traverse Resort. Since the ponds appear to be seasonal, their aquatic life would be limited to Spring Peepers (*Hyla crucifer*), Green Frogs (*Rana clamitans*), and American Toads (*Bufo americanus*).

#### Zone 5: The Aspen Grove Behind the Former Salvage Yard

##### Vegetation:

##### Flowering Plants:

Brome *Bromus tectorum*

Canada Blue Grass *Poa compressa*

Goldenrod probably *Solidago nemoralis*

Spotted Star Thistle *Centaurea maculosa*

Timothy *Phleum pratense*

Wild Strawberry *Fragraria virginiana*

##### Ferns, Lichens, and Mosses:

Reindeer Lichen    *Physica leucomela*

British Soldier Lichen    *Cladonia cristatella*

Shrubs:

Raspberry    *Rubus idaeus*

Wild Grape    *Vitis riparia*

Trees:

Large-Toothed Aspen    *Populus grandidentata*

Red Oak    *Quercus rubra*

White Pine    *Pinus strobus*

Wildlife: This area also shares the animal life characteristic of the fields, orchards and marginal lands. The density of the brush found in the grove suggests that it has the potential to serve as a nesting ground for many of the smaller mammal species noted previously. The same holds true for birds. In addition, the Aspen shoots tend to attract Woodcock, and the tangle of wild grapes are similarly a source of high-quality food for Ruffed Grouse and other fruit-eating birds.

#### Zone 6: The Jack Pine Plantation

Vegetation:

Flowering Plants:

Alfalfa	<i>Medicago sativa</i>
Brome Grass	<i>Bromus tectorum</i>
Canada Blue Grass	<i>Poa compressa</i>
Evening Primrose	<i>Oenothera biennis</i>
Goldenrod	<i>Solidago racemosa</i>
High Blackberry	<i>Rubus allagheniense</i>
Hoary Allysm	<i>Berteroa incana</i>
Horse Mint	<i>Monarda punctata</i>
Lance-Leafed Plantain	<i>Plantago lanceolata</i>
Low Blackberry	<i>Rubus pubescens</i>
Sand Dropseed	<i>Sporobolus cryptandrus</i>
Orchard Grass	<i>Dactylis glomerata</i>
Panic Grass	<i>Panicum variegatum</i>
Queen Ann's Lace	<i>Daucus carota</i>
Ragweed	<i>Ambrosia sp.</i>
Spotted Star-Thistle	<i>Centaurea maculosa</i>
White Clover	<i>Melilotus alba</i>
Wild Asparagus	<i>Asparagus officinale</i>
Wild Strawberry	<i>Fragaria virginiana</i>

Ferns, Lichens and Mosses:

Bitish Soldier Lichen	<i>Cladonia cristatella</i>
Cup Lichen	<i>Cladonia pyxidada</i>
Hair Cap Moss	<i>Polytrichum commune</i>

Shrubs:

Staghorn Sumac    *Rhus typhina*

Upright Juniper    *Juniperus communis*

Trees:

Boxelder    *Acer negundo*

Jack Pine    *Pinus banksiana*

Lombardie Poplar    *Populus nigra*

Pin Cherry    *Prunus pennsylvanica*

Red Pine    *Pinus resinosa*

Zone 7: The Upland Woods

Vegetation:

Flowering Plants:

Beggars Tick    *Bidens frondosa*

Bishops Cap    *Mitella nuda*

Bitter Nightshade    *Solanum dulcamara*

Bugle Weed    *Lycopus americanus*

Bull Thistle    *Cirsium vulgare*

Herb Robert    *Geranium robertianum*

Jewel Weed    *Impatiens capensis*

Large-Leafed Aster    *Aster macrophyllus*

Hepatica    *Hepatica acutiloba*

Partridge Berry    *Mitchella repens*  
Purple Violet    *Viola sororia*  
Spikenard    *Arelia racemosa*  
Wild Lettuce    *Lactuca canadensis*  
Wintergreen    *Gaultheria procumbens*  
Fringed Polygala    *Polygala paucifolia*

Ferns, Lichens, and Mosses:

Bracken Fern    *Pteridium aquilinum*  
Rattlesnake Fern    *Botrychium virginianum*  
Sensitive Fern    *Onoclea sensibilis*

Shrubs:

Cananada Yew    *Taxus canadensis*  
High Juniper    *Juniperis communis*  
Raspberry    *Rubus idaeus*  
Red Osier Dogwood    *Cornus stolonifera*  
Wild Grape    *Vitis riparia*

Trees:

Balsam Fir    *Abies balsamea*  
Basswood    *Tilia americana*  
Beech    *Fagus grandifolia*  
Black Cherry    *Prunus serotina*  
Hemlock    *Tsuga canadensis*  
Ironwood    *Ostrya virginiana*

Large-Toothed Aspen    *Populus grandidentata*  
Moutain Maple    *Acer pennsylvanus*  
Red Maple    *Acer rubra*  
Red Oak    *Quercus rubra*  
Red Pine    *Pinus resinosa*  
Sugar Maple    *Acer saccharum*  
White Birch    *Betula papyrifera*  
White Cedar    *Thuja occidentalis*  
White Oak    *Quercus alba*  
White Pine    *Pinus strobus*  
White Spruce    *Picea glauca*  
Yellow Birch    *Betula alleghaniensis*  
Quaking Aspen    *Populus tremuloides*

Wildlife: This forested area, along with the lowland forests, offers the most important wildlife habitat found on the property. The mature trees offer shelter and a source of food. The forest is likely to contain several species of large mammals such as Red Fox, Raccoon, Porcupine, Opossum, Cottontail Rabbits, Striped Skunks, and White Tailed Deer. Several species of small mammals were also observed including grey squirrels, Fox Squirrels, Eastern Chipmunks (*Tamias striatus*), and Red Squirrels. This type of forest typically contains Woodland Deer Mice (*Peromyscus maniculatus gracilis*), and Short-Tailed Shrews.

The birds observed and likely to frequent this zone were also typical of mature forests found throughout the Grand Traverse

Region. Nesting species include: Black-capped Chickadees, Nuthatches (two species), Wood Pewees, Great-crested Flycatchers, Wood Thrushes, Ovenbirds, Black-Throated Green Warblers, and Red-eyed Vireos.

#### Zone 8: The Lowland Woods

Vegetation: the wetlands implications of each species are noted in brackets.

#### Flowering Plants:

- Bitter Nightshade *Solanum dulcamera* [facultative]  
Bunchberry *Cornus canadensis* [not listed]  
Canada Mayflower *Mianthemum canadense* [not listed]  
Fragrant Bedstraw *Galium triflorum* [facultative upland (+)]  
Goldenrod *Solidago nemoralis* [not listed]  
Goldthread *Coptis groenlandica* [not listed]  
Heal-All *Prunella vulgaris* [facultative]  
Jack-In-The-Pulpit *Arisaema atrorubens* [not listed]  
Northern Bedstraw *Galium boreale* [facultative]  
Northern Lopseed *Phryma leptostachya* [not listed]  
Orange Hawk-Weed *Hieracium aurantiacum* [not listed]  
Psuedo-Nettle *Pilea fontana* [not listed]  
Purple Violet *Viola sororia* [facultative (-)]  
Roundleaf Hepatica *Hepatica Rotundifolia* [not listed]  
Shinleaf *Pyrola rotundifolia* [not listed]

Smooth Yellow Violet *Viola pennsylvanica* [facultative wetland(-)]  
Spikenard *Aralia racemosa* [not listed]  
Starflower *Trientalis borealis* [facultative (+)]  
Sweet Cicely *Osmorhiza claytoni* [not listed]  
Trillium *Trillium grandiflorum* [facultative]  
Wild Iris *Iris versicolor* [not listed]  
Wood Betony *Pedicularis canadensis* [not listed]  
Wood Mint *Blephilia hirsuta* [facultative upland (-)]  
Woods Strawberry *Fragraria vesca* [facultative (-)]  
Yellow Rocket *Barbarea vulgaris* [facultative]

Ferns, Lichens and Mosses:

Bracken Fern *Pteridium aquilinum* [facultative upland]  
Spinulose Wood Fern *Dryopteris spinulosa* [facultative wetland(-)]

Shrubs:

Black Chokeberry *Aronia melanocarpa* [facultative (-)]  
Black Locust *Robinia pseudoacacia* [facultative Upland (-)]  
Gooseberry *Ribes cynosbatti* [not listed]  
Highbush Cranberry *Viburnum trilobum* [not listed]  
Low Blueberry *Vaccinium pennsylvanicum* [facultative upland]  
Maple-Leaf Viburnum *Viburnum acerifolium* [not listed]  
Red Elderberry *Sambucus pubens* [facultative upland (+)]  
Red Osier Dogwood *Cornus stolonifera* [facultative wetland]  
Snowberry *Symphlocarpus alba* [facultative upland (-)]  
Common Red Raspberry *Rubus idaeus* [facultative upland (+)]

Trees:

American Elm *Ulmus americana* [facultative wetland(-)]

Balsam Fir *Abies balsamea* [facultative wetland]

Hemlock *Tsuga canadensis* [facultative upland]

White Cedar *Thuja occidentalis* [facultative wetland]

White Pine *Pinus strobus* [facultative upland]

Wildlife: This zone contains the most important vegetative association in the lands included in this report. This is because of the hydric sere, or water loving plant species present at spring and fall seasons of the year. The great importance is represented by the living sponge aspect of this ecosystem which prevents excessive runoff into the bay, and promotes recharge of the groundwater table. However, the wildlife values here are limited to the possible "green barn" effects and food for wintering White-tailed Deer presented by the White Cedar and Hemlock canopy. This zone is also probably significant for migratory song-birds during the fall and winter months. Species such as the three woodpeckers, two nuthatches, winter finches (at least 5 species), and chickadees find shelter in this type of woods. During my field work I observed Cottontail Rabbits, Fox and Red Squirrels, deer tracks, and a chipmunk in these woods. This is the place where unusual mammals such as *Sorex* shrews and *Clethrionomys* voles may be expected if a trapping scheme were undertaken to

search for them. Finally, there are probably Spring Peeper frogs (*Hyla crucifer*), and Wood Frogs (*Rana sylvatica*) found here in temporary pools and ditches in the spring.

#### Zone 9: Sewer-Line Clearing (Dry)

##### Vegetation:

##### Flowering Plants:

Hoary Alyssum *Berteroa incana*

Alfalfa *Medicago sativa*

Salsify *Tragopogon major*

Vetch *Vicia americana*

Ragweed *Ambrosia sp.*

Queen Ann's Lace *Daucus carota*

Wild Strawberry *Fragaria virginiana*

Canada Bluegrass *Poa compressa*

St. John's Wort *Hypericum perforatum*

Pearly Everlasting *Anaphalis margaritacea*

Goldenrod *Solidago nemoralis*

Boneset *Eupatorium perfoliatum*

Spotted Star Thistle *Centaurea maculosa*

Yarrow *Achillea millefolium*

Common Mullein    *Verbascum thapsus*

Shrubs:

Staghorn Sumac    *Rhus typhina*

Blackberry    *Rubus alleghaniensis*

Raspberry    *Rubus idaeus*

Autumn Olive    *Elaeagnus umbellata*

Wildlife: The decision to consider the clearing which follows the sewer-line as a separate zone rather than as an extension of either the upland or lowland woods which it cuts through was based on the clearing's unique vegetation, rather than any potential to hold animal life apart from that crossing between the two forests. Beyond the mammals and birds of the surrounding forests which probably venture into the clearing on occasion, the clearing itself provides habitat for moles, Meadow Voles, shrews and mice.

#### Zone 10: Sewer-Line Clearing (Wet)

Vegetation:

Flowering Plants:

- Bitter Nightshade *Solanum dulcamera* [facultative]  
Boneset *Eupatorium perfoliatum* [facultative (+)]  
Bull Thistle *Cirsium vulgare* [facultative upland (-)]  
Bulrush *S. americanus* [obligate]  
Bulrush *Scirpus fluviatilis* [obligate]  
Canada Bluegrass *Poa compressa* [facultative upland (+)]  
Canada Thistle *Cirsium arvense* [facultative upland]  
Canary Reed Grass *Phalaris arundanacea* [facultative (+)]  
Broad-leafed Cattail *Typha latifolia* [obligate]  
Common Plantain *Plantago major* [facultative (+)]  
Curly Dock *Rumex crispus* [facultative (+)]  
Devil's Beggars Tick *Bidens frondosa* [facultative]  
Jewel Weed *Impatiens capensis* [not listed]  
Panic Grass *Panicum varigatum* [facultative]  
Peppermint *Mentha piperita* [obligate]  
Queen Ann's Lace *Dauca carota* [not listed]  
Baltic Rush *Juncus balticus* [obligate]  
Sheep Sorrel *Rumex acetosella* [facultative]  
Water Smart Weed *Polygonum amphibium* [obligate]  
Swamp Buttercup *Ranunculus septentrionalis* [facultative (+)]  
Water-horehound *Lycopus americanus* [not listed]  
White Heath Aster *Aster pilosus* [facultative upland (+)]  
Wild Mint *Mentha arvensis* [facultative]

Shrubs:

Sandbar Willow *Salix interior* [obligate]

Hoary Willow *Salix candida* [obligate]

Trees:

Quaking Aspen (shrub size) *Populus tremuloides* [facultative]

White Cedar (shrub size) *Thuja occidentalis* [facultative]

White Ash (shrub size) *Fraxinus americana* [facultative upland]

Wildlife: The mammals and bird-life associated with this zone would only be those animals that cross the clearing on their way between the two halves of the lowland woods. However, when standing water is present in the clearing, several species of frogs, toads, and salamanders are likely to use the area covered by cattails. In addition, the aquatic vegetation provides a different set of seeds which would attract such small birds as Goldfinches, and sparrows.

Zone 11 Low Wet Woods Surrounded by Zone 7

Vegetation:

Flowering Plants:

Fringed Polygola *Polygola paucifolia*

Wintergreen *Gaultheria procumbenxs*

Partridge Berry *Mitchella repens*

Ferns:

Rattlesnake Fern *Botrychium virginicum* [facultative wetland]

Spinulose Wood Fern *Dryopteris spinulosa* [facultative wetland]

Shrubs:

Canada Yew *Taxus canadensis* [facultative wetland]

Red Osier Dogwood *Cornus canadensis* [facultative wetland]

Trees:

Balsam Fir *Abies balsamea* [facultative wetland]

Hemlock *Tsuga canadensis* [facultative wetland]

White Cedar *Thuja occidentalis* [facultative wetland]

Wildlife:

The small size of these two areas makes it difficult to predict that there is really any different wildlife to be found here than in the upland woods surrounding. It is quite apparent that amphibians such as woodland salamanders and frogs may find this zone attractive in the spring for breeding purposes. There is not enough area to be important for deer wintering or feeding even though larger areas with similar

vegetation would have this value. Small game, and small mammals are found here, and songbirds such as migrating warblers, ovenbirds, and Wood Thrushes would use this habitat type. In winter all three species of woodpeckers, Black-capped Chickadee, Golden-crowned Kinglet, and Brown Creeper would frequent such a place.

### CONCLUSION

The property under consideration encompasses portions of all the major vegetation and habitat types found in the Grand Traverse Region with the exception of beach or dune habitat. The variability of the land makes it difficult to generalize about the effects of development. However, such areas as the former salvage yard and the hundreds of acres of orchards and fields have the least environmental importance since the region has an abundance of this type of land and, especially in the case of the former salvage yard, little wildlife or vegetation of importance exists in these areas. The various areas of upland woods, aspen groves and pine plantations are of intermediate environmental importance due to the maturity of their vegetation and their potential to shelter wildlife. The zones that should be of greatest concern with respect to environmental issues are zones 4, 8, and 10- the ponds, lowland woods, and wet sewer-line clearing. Each of these zones contains vegetation that suggest that the land might be considered a wetland. Further, these

areas, especially the lowland woods, have considerable potential to provide shelter and nesting habitat for numerous animal species.

No threatened or endangered species were observed during this study.

#### APPENDIX 1: EXPLANATION OF WETLANDS VEGETATION STANDARDS

Because of the potentially sensitive nature of obligate wetlands plant species with respect to development endeavors, I included references to the wetlands implications of vegetation and habitat. There are only three zones which have obligate wetlands species; Zone 4, the ponds behind the salvage yard, Zone 8, the lowland woods, and Zone 10, the wet portion of the sewer-line clearing. The inventory of vegetation for these zones was therefore reported with references to the wetlands category of each plant using the standards set forth in *The National List of Plant Species That Occur in Wetlands: 1988 Michigan*. This federal report establishes six plant categories, however only four are used for the plants found on this property. The first of these is termed "obligate," and means that the plant in question is "always found in

wetlands under natural (not planted) conditions." The second category, "facultative wetland," means that the species is "usually found in wetlands (67%-99% frequency) but is occasionally found in non-wetlands." The third category, "facultative," means the species is "sometimes found in wetlands (34%-66% frequency) but also occurs in non-wetlands." The final relevant category, "facultative upland," means that the species is "seldom found in wetlands (1%-33% frequency) and usually occurs in non-wetlands." The critical areas on the property in question contained no species which fell into the final two categories- "upland," and "drawdown."

Additionally, Reed's List provides a plus (+) and minus (-) designation that suggests which end of the frequency a particular species tends to occupy within a particular category. For example, Reed's notation of facultative (+) for the species Curly Dock suggests that while the plant is "sometimes found in wetlands (34%-66% frequency)," it is closer to the 66% figure and hence more likely to be found in wetlands than, for example, American Elm which is listed as facultative (-). (National List of Plant Species That Occur in Wetlands: 1988 Michigan, USFWS, NERC 88/18.22, p. 4436D)