Appendix 2B
Descriptions of Land Cover Categories

from:

Ecological Communities of New York State

Second Edition

A revised and expanded
edition of Carol Reschke's
Ecological Communities
of New York State

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Appendix 2B: Description of Land Cover Categories
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IV. LACUSTRINE SYSTEM

The lacustrine system consists of ponded waters situated in topographic depressions or dammed river channels, with persistent emergent vegetation sparse or lacking, but including any areas with abundant submerged or floating-leaved aquatic vegetation. The lacustrine communities in this classification are distinguished primarily by trophic state, alkalinity, annual cycles of thermal stratification, circulation, morphometry (size and shape of the lake basin and drainage area; water permanence), and water chemistry (including salinity).

The communities are described in terms of the free-floating organisms of the open water, or the limnetic or pelagic zone (including plankton and fish), the aquatic macrophytes and fish near the shore or littoral zone, and the bottom-dwelling organisms or benthos. The limnetic (pelagic) zone may be divided into the epilimnion (upper lake zone), which is sunny mixed by the wind, and comparatively rich in oxygen, and the hypolimnion (lower lake zone), which is darker, and comparatively rich in carbon dioxide from respiration and decay. The transition between the epilimnion and hypolimnion is called the thermocline (or the metalimnion). The lake bottom or benthic zone may be divided into the peripheral, well-lit shallows or littoral zone, the slightly deeper and darker sublittoral zone, and (in summer-stratified lakes) the deep, cold region where currents are minimal and light is much reduced, called the profundal zone. Benthic zones may each have a distinctive resident biota; however, many of the plankton and fish move between pelagic zones on a regular basis. Deep lakes have an average depth greater than about 60 m (200 ft), moderately deep lakes are from about 6 to 60 m (20 ft to 200 ft) deep, and shallow lakes have an average depth less than about 6 (20 ft). Large lakes are greater than about 80 ha (200 acres) and small lakes are less than this size.

This classification of lacustrine communities is based on a combination of NYNHP field surveys, literature review, and discussions with aquatic scientists. To date about 42 plots have been sampled statewide by NYNHP in lacustrine communities. Although the Heritage Program has focused inventory work on lakes since 1995; we do not currently have sufficient field data for confidently undertaking any major restructuring of the 1990 lacustrine classification. However, field work has suggested that this classification works well for representing the coarsest scale distinctions between both biotic and abiotic features of lacustrine community types. The classification is intended to represent entire lake "macrohabitats." Although physically based, it is meant to serve as a coarse filter emphasizing resident lake biota. It is recognized that lakes may contain numerous pelagic and benthic associations and that there is often much overlap in association distribution across lake macrohabitat types. For now, NYNHP is maintaining this macrohabitat classification while evaluating the utility and feasibility of replacing or supplementing this classification with an association classification. Further evaluation of the macrohabitat classification is underway to compare trophic state versus alkalinity as a factor more important in driving the distribution of biota and more resistent to human alteration of water chemistry. Tentatively, it is thought that alkalinity is a stronger driving force, thus suggesting a switch of the 1990 classification of common pond types from oligotrophic and eutrophic to acidic and alkaline, and common dimictic lake types from oligotrophic, mesotrophic, and eutrophic to acidic and alkaline, perhaps with trophic state as a secondary modifier.

Lastly, addition of three "intermittent pond" types to the 1990 classification is also recommended: vernal pool and pine barrens vernal pond (both previously treated under the palustrine system) and sinkhole pond (split from sinkhole wetland in the palustrine system). Other types under evaluation include "flow-through" or "fluvial pond," a potential split from the currently recognized oligotrophic pond and eutrophic pond, closely associated with riverine complexes rather than in the typical isolated basin setting.

Further refinement of the lacustrine classification to distinguish regional variants will likely be based on additional field surveys and analysis of data collected by various aquatic scientists and agencies statewide. Regional variation in many of the designated lacustrine communities is evident, but we do not currently have in our files enough information or have undertaken analyses to confidently split common and widespread lake types into more specific regional variants. A finer scale classification of lakes that distinguishes types according to ecoregion and/or watershed is being evaluated. Preliminary conclusions suggest that vascular plant, bryophyte, algae, fish, mollusk, insect, and plankton assemblages may follow different distribution patterns, some more closely correlated with ecoregion boundaries, some more closely with major ecological drainage units.

A. NATURAL LAKES AND PONDS

This subsystem includes the Great Lakes, and inland lakes and ponds in which the trophic state, morphometry, and water chemistry have not been substantially modified by human activities, or the native biota are dominant. The biota may include someintroduced species (for example, non-native macrophytes, stock or accidentally introduced fishes), however the introduced species are not usually dominant in the lake or pond community as a whole.

16. Eutrophic pond: the aquatic community of a small, shallow, nutrient-rich pond. The water is usually green with algae, and the bottom is mucky. Eutrophic ponds are too shallow to remain stratified throughout the summer; they are winter-stratified, monomictic ponds. Additional characteristic features of a eutrophic pond include the following: water that is murky, with low transparency (Secchi disk depths typically less than 4 m); water rich in plant nutrients (especially high in phosphorus, nitrogen, and calcium), high primary productivity (inorganic carbon fixed = 75 to 250 g/m2/yr);, and a weedy shoreline. Alkalinity is typicallyhigh (greater than 12.5 mg/l calcium carbonate). A name change, and slight conceptual change to alkaline pond is being evaluated.

There are three small eutrophic ponds in the town that occupy a total of approximately 6.4 acres. They are located west of Kearney Road, south of County Road 18 and east of Yautzy Road, and in the southeast corner of the town along the west side of County Road 24.

Species diversity is typically high. Aquatic vegetation is abundant. Littoral, and epilimnion species assemblages usually predominate. Characteristic plants include coontail (*Ceratophyllum demersum*), duckweeds (*Lemna minor, L. trisulca*), waterweed (*Elodea canadensis*), pondweeds (*Potamogeton* spp.), water starwort (*Heteranthera dubia*), bladderworts (*Utricularia* spp.), naiad (*Najas flexilis*), tapegrass (*Vallisneria americana*), algae (*Cladophora* spp.) yellow pond-lily (*Nuphar luteum*), and white water-lily (*Nymphaea odorata*). Characteristic fishes are usually warmwater fishes. Characteristic macroinvertebrates may include several types of odonates (*Aeshna* spp., *Ischnura* spp., *Gomphus* spp., and *Basiaeschna* spp.), and leeches (Hirundinae). Characteristic, and dominant plankton may include the phytoplankton *Chrysosphaerella longispina*, and *Ceratium* spp., and the zooplankton *Nauplii*, rotifers such as *Keratella,* cyclopoids, and cladocerans.

Three to seven ecoregional variants (including Northern Appalachian, Great Lakes, Lower New England types) are suspected to differ in dominant, and characteristic vascular plants, fishes, mollusks, and insects. Flow-through or fluvial pond might be a distinct variant worthy of recognition as a separate community type, but needs further evaluation. Flowthrough ponds are closely associated with riverine complexes (e.g., large natural widenings of rivers or large beaver impoundments of river channels), and have a high flushing rate. Characteristic animals of flow-through ponds may include beaver (*Castor canadensis*). More data on this community are needed.

Distribution: throughout New York State, and is more common at low elevations, especially in the Great Lakes Plain ecozone, and St. Lawrence River Valley.

Rank: G4 S4 *Revised:* 2001

Examples: Black Pond, Jefferson County; Deer Pond, Essex County; Lima Ponds, Livingston County; Rogers
Pond, Essex County; Sullivan Pond, Warren County; White Lily Pond, Rensselaer County.

Sources: Gilman 1979; NYNHP field surveys.

B. LACUSTRINE CULTURAL
This subsystem includes communities that are either created, and maintained by human activities, or are modified by human influence to such a degree that the trophic state, morphometry, water chemistry, or biological composition of the resident community are substantially different from the character of the lake community as it existed prior to human influence.

4. Farm pond/artificial pond: the aquatic community of a small pond constructed on agricultural or residential property. These ponds are often eutrophic, and may be stocked with panfish such as bluegill (*Lepomis macrochirus*), and yellow perch (*Perca flavescens*). The biota are variable (within limits), reflecting the species that were naturally or artificially seeded, planted, or stocked in the pond. *Distribution:* throughout New York State.

There are more than 80 farm ponds that occupy approximately 64 acres in the town. These small ponds are located throughout the town.

Rank: G5 S5 *Revised:* 1990

6. Quarry pond: the aquatic community of an excavated basin that is created as part of a rock quarrying operation. The sides of the basin are often very steep, thereby eliminating any shallow shoreline habitats. Water levels usually fluctuate, reflecting recent precipitation patterns.

Distribution: throughout New York State north of the Coastal Lowlands ecozone.
Rank: G5 S5 *Revised:* 1990

Two small quarry ponds occupy a total of approximately 65 acres. A large pond is located north of Lake-to-Lake Road between County Road 17 and Kearney Road. A small pond is located east of West Swamp Road.

9. Sewage treatment pond: the aquatic community of an artificial pond constructed for sewage treatment (chemical, and biological decomposition of sewage) prior to release to a stream or aquifer.

Distribution: throughout New York State.
Rank: G5 S5 *Revised:* 1990

Nine sewage treatment ponds that occupy a total of 8.2 acres are located in the town. The largest is part of the Village of Rushville's sewage treatment plant.

V. PALUSTRINE SYSTEM

The palustrine system consists of non-tidal, perennial wetlands characterized by emergent vegetation. The system includes wetlands permanently saturated by seepage, permanently flooded wetlands, and wetlands that are seasonally or intermittently flooded (these may be seasonally dry) if the vegetative cover is predominantly hydrophytic and soils are hydric. Wetland communities are distinguished by their plant composition (hydrophytes), substrate (hydric soils), and hydrologic regime (frequency of flooding) (Cowardin 1979).

Peatlands are a special type of wetland in which the substrate primarily consists of accumulated peat (partly decomposed plant material such as mosses, sedges, and shrubs) or marl (organically derived calcium carbonate deposits), with little or no mineral soil. Stable water levels or constant water seepage allow little aeration of the substrate in peatlands, slowing decomposition of plant litter, and resulting in peat or marl accumulation. In this classification, peatlands are characterized by their hydrologic regime; water source and water chemistry are important factors. Minerotrophic peatlands (fens) are fed by groundwater that contains minerals obtained during passage through or over mineral soils or aquifers. Ombrotrophic peatlands (bogs) are fed primarily by direct rainfall, with little or no groundwater influence (Damman and French 1987). The vegetation of ombrotrophic peatlands is depauperate; plants in the families *Sphagnaceae* and *Ericaceae* are prominent. The vegetation of minerotrophic peatlands is comparatively rich in species; plants in the families *Cyperaceae* and *Poaceae* are prominent (Heinselman 1970).

In a natural landscape there are continuous gradients from ombrotrophic to strongly minerotrophic wetlands; there are also continuous gradients in soils from mineral soils to peat soils. The boundaries between different types of wetlands are not always discrete. Several different types of wetlands may occur together in a complex mosaic.

A. OPEN MINERAL SOIL WETLANDS

This subsystem includes wetlands with less than 50% canopy cover of trees. In this classification, a tree is defined as a woody plant usually having one principal stem or trunk, a definite crown shape, and characteristically reaching a mature height of at least 16 ft (5 m) (Driscoll et al. 1984). The dominant vegetation may include shrubs or herbs. Substrates range from mineral soils or bedrock to well-decomposed organic soils (muck). Fluctuating water levels allow enough aeration of the substrate to allow plant litter to decompose, so there is little or no accumulation of peat.

1. Deep emergent marsh: a marsh community that occurs on mineral soils or fine-grained organic soils (muck or well-decomposed peat); the substrate is flooded by waters that are not subject to violent wave action. Water depths can range from 6 in to 6.6 ft (15 cm to 2 m); water levels may fluctuate seasonally, but the substrate is rarely dry, and there is usually standing
water in the fall.

The most abundant emergent aquatic plants are cattails (*Typha angustifolia, T. latifolia*), wild rice (*Zizania aquatica*), bur-weeds (*Sparganium*

Five examples of this community with a total of approximately 18.4 acres are located in the Town: Two areas of 4-5 acres located west of Mumby Road near the northern town boundary. Smaller areas are located southwest of County Rte. 18; west of County Road 7 and south of Depew Road; and west of the silver maple-ash swamp located north of Lake-to-Lake Road and east of State Rte. 247.

eurycarpum, S. androcladum), pickerel weed (*Pontederia cordata*), bulrushes (*Scirpus tabernaemontani, S. fluviatilis, S. heterochaetus., S. acutus, S. pungens, S. americanus*), arrowhead (*Sagittaria latifolia*), arrowleaf (*Peltandra virginica*), rice cutgrass (*Leersia oryzoides*), bayonet rush (*Juncus militaris*), water horsetail (*Equisetum fluviatile*) and bluejoint grass (*Calamagrostis canadensis*).

The most abundant floating-leaved aquatic plants are fragrant water lily (*Nymphaea odorata*), duckweeds (*Lemna minor, L. trisulca*), pondweeds (*Potamogeton natans, P. epihydrus, P. friesii, P. oakesianus, P. crispus, P. pusillus, P. zosteriformis, P. strictifolius*), spatterdock (*Nuphar variegata*), frog's-bit (*Hydrocharis morus-ranae*), watermeal (*Wolffia* spp.) water-shield (*Brasenia schreberi*), and water-chestnut (*Trapa natans*).

The most abundant submerged aquatic plants are pondweeds (*Potamogeton richardsonii, P. amplifolius, P. spirillus, P. crispus, P. zosteriformis*), coontail (*Ceratophyllum demersum*), chara (*Chara globularis*), water milfoils (*Myriophyllum spicatum, M. sibericum*), pipewort (*Eriocaulon aquaticum*), tapegrass (*Vallisneria americana*), liverwort (*Riccia fluitans*), naiad (*Najas flexilis*), water lobelia (*Lobelia dortmanna*), waterweed (*Elodea canadensis*), waterstargrass (*Heteranthera dubia*), and bladderworts (*Utricularia vulgaris, U. intermedia*).

Animals that may be found in deep emergent marshes include red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), bullfrog (*Rana catesbeiana*), and painted turtle (*Chrysemys picta*). Rare species in some deep emergent marshes include American bittern (*Botaurus lentiginosus*), Virginia rail (*Rallus limicola*), and piedbilledgrebe (*Podilymbus podiceps*). Marshes that have been disturbed are frequently dominated by aggressive weedy species such as purple loosestrife (*Lythrum salicaria*) and reedgrass (*Phragmites australis*). Deep emergent marshes also occur in excavations that contain standing water (e.g., roadside ditches, gravel pits).

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 2001

Examples: Lake Champlain South Basin, Washington County; Lake Lila, Hamilton County; Chippewa Creek Marsh, St. Lawrence County; Upper and Lower Lakes St. Lawrence County, Big Bay Swamp, Oswego County.

Sources: Bray 1915; Cowardin 1979; Gilman 1976 NYNHP field surveys.

2. Shallow emergent marsh: a marsh meadow community that occurs on mineral soil or deep muck soils (rather than true peat), that are permanently saturated and seasonally flooded. This marsh is better drained than a deep emergent marsh; water depths may range from 6 in to 3.3 ft (15 cm to 1 m) during flood stages, but the water level usually drops by mid to late summer and the substrate is exposed during an average year.

Only one example of this community is located in the town – west of Mumby Road near the northern town boundary. It occupies approximately 1.5 acres.

Most abundant herbaceous plants include bluejoint grass (*Calamagrostis canadensis*), cattails (*Typha latifolia, T. angustifolia, T. x glauca*), sedges (*Carex* spp.), marsh fern (*Thelypteris palustris*), manna grasses (*Glyceria pallida, G. canadensis*), spikerushes (*Eleocharis smalliana, E. obtusa*), bulrushes (*Scirpus cyperinus, S. tabernaemontani, S. atrovirens*), threeway sedge (*Dulichium arundinaceum*), sweetflag (*Acorus americanus*), tall meadow-rue (*Thalictrum pubescens*), marsh St. John's-wort (*Triadenum virginicum*), arrowhead (*Sagittaria latifolia*), goldenrods (*Solidago rugosa, S. gigantea*), eupatoriums (*Eupatorium maculatum, E. perfoliatum*), smartweeds (*Polygonum coccineum, P. amphibium, P. hydropiperoides*), marsh bedstraw (*Galium palustre*), jewelweed (*Impatiens capensis*), loosestrifes *(Lysimachia thyrsiflora, L. terrestris, L. ciliata*). Frequently in degraded examples reed canary grass (*Phalaris arundinacea*) and/or purple loosestrife (*Lythrum salicaria*) may become abundant.

Sedges (*Carex* spp.) may be abundant in shallow emergent marshes, but are not usually dominant. Marshes must have less than 50% cover of peat and tussock-forming sedges such as tussock sedges (*Carex stricta*), otherwise it may be classified as a sedge meadow. Characteristic shallow emergent marsh sedges include *Carex stricta, C. lacustris, C. lurida, C. hystricina, C. alata, C. vulpinoidea, C. comosa, C. utriculata, C. scoparia, C. gynandra, C. stipata,* and *C. crinita.*

Other plants characteristic of shallow emergent marshes (most frequent listed first) include blue flag iris (*Iris versicolor*), sensitive fern (*Onoclea sensibilis*), common skullcap (*Scutellaria galericulata*), beggerticks (*Bidens* spp.), water-horehounds (*Lycopus uniflorus, L. americanus*), bur-weeds (*Sparganium americanum, S. eurycarpum*), swamp milkweed (*Asclepias incarnata*), water-hemlock (*Cicuta bulbifera*), asters (*Aster umbellatus, A. puniceus*), marsh bellflower (*Campanula aparinoides*), water purslane (*Ludwigia palustris*), royal and cinnamon ferns (*Osmunda regalis, O. cinnamomea*), marsh cinquefoil (*Potentilla palustris*), rushes (*Juncus effusus, J. canadensis*), arrowleaf (*Peltandra virginica*), purple-stem angelica (*Angelica atropurpurea*), water docks (*Rumex orbiculatus, R. verticillatus*), turtlehead (*Chelone glabra*), waterparsnip (*Sium suave*), and cardinal flower (*Lobelia cardinalis*).

Shallow emergent marshes may have scattered shrubs including rough alder (*Alnus incana* ssp. *rugosa*), water willow (*Decodon verticillatus*), shrubby dogwoods (*Cornus amomum, C. sericea*), willows (*Salix* spp.), meadow sweet (*Spiraea alba* var. *latifolia*), and buttonbush (*Cephalanthus occidentalis*). Areas with greater than 50% shrub cover are classified as shrub swamps.

Amphibians that may be found in shallow emergent marshes include frogs such as eastern American toad (*Bufo a. americanus*), northern springpeeper (*Pseudoacris c. crucifer*), green frog (*Rana clamitans melanota*), and wood frog (*Rana sylvatica*); and salamanders such as northern redback salamander (*Plethodon c. cinereus*) (Hunsinger 1999). Birds that may be found include red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), and common yellowthroat (*Geothlypis trichas*) (Levine 1998).

Shallow emergent marshes typically occur in lake basins and along streams often intergrading with deep emergent marshes, shrub swamps and sedge meadows and they may occur together in a complex mosaic in a large wetland.

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 2001

Examples: South Branch Grass River Colton, St. Lawrence County; West Branch Oswagatchie River Diana, Lewis County; East Branch Fish Creek, Lewis County; Jordan River, St. Lawrence/Franklin Counties; Lakeview Marshes, Jefferson County. *Sources:* Bray 1915; Gilman 1976; Hotchkiss 1932; Hunsinger 1999; Levine 1998; Metzler and Tiner 1992; Tiner 1985; NYNHP field surveys.

3. Shrub swamp: an inland wetland dominated by tall shrubs that occurs along the shore of a lake or river, in a wet depression or valley not associated with lakes, or as a transition zone between a marsh, fen, or bog and a swamp or upland community. The substrate is usually mineral soil or muck. This is a very broadly defined type that includes several distinct communities and many intermediates. Shrub swamps are very common and quite variable. They may be codominated by a mixture of species, or have a single dominant shrub species.

Approximately 80 acres of this community are found at 10 sites in the town. The largest area is located west of Crowe Road and east of the former railroad ROW. Smaller areas are located: east of Mumby Road and north of Depew; east of Yautzy Road and north of Depew; west of County Rte. 17 and south of Depew Road; west of Kearney Road; on the north side of Lake-to-Lake Road; on the west side of Goose Road; along the southern town boundary west of East Swamp Road; and north of Walters Road.

In northern New York many shrub swamps are dominated by alder (*Alnus incana* ssp. *rugosa*); these swamps are sometimes called *alder thickets.* A swamp dominated by red osier dogwood (*Cornus sericea*), silky dogwood (*C. amomum*), and willows (*Salix* spp.) may be called a *shrub carr*. Along the shores of some lakes and ponds there is a distinct zone dominated by water-willows (*Decodon verticillatus*) and/or butonbush (*Cephalanthus occidentalis*) which can sometimes fill a shallow basin.

Characteristic shrubs that are common in these and other types of shrub swamps include meadow-sweet (*Spiraea alba* var. *latifolia*), steeple-bush (*Spiraea tomentosa*), gray dogwood (*Cornus foemina* ssp. *racemosa*), swamp azalea (*Rhododendron viscosum*), highbush blueberry (*Vaccinium corymbosum*), maleberry (*Lyonia ligustrina*), smooth alder (*Alnus serrulata*), spicebush (*Lindera benzoin*), willows (*Salix bebbiana, S. discolor, S. lucida, S. petiolaris*), wild raisin (*Viburnum cassinoides*), and arrowwood (*Viburnum recognitum*). More documentation and research is needed to distinguish the different types of shrub swamps in New York.

Birds that may be found in shrub swamps include common species such as common yellowthroat (*Geothlypis trichas*); and rare species such as American bittern (*Botaurus lentiginosus*), alder flycatcher (*Empidonax alnorum*), willow flycatcher (*E. trallii*), and Lincoln's sparrow (*Passerella lincolnii*) (Levine 1998).

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 2001

Examples: West Branch Oswagatchie River Diana, Lewis County; West Branch Sacandaga River, Hamilton County; Jordan River, St. Lawrence/Franklin Counties, Shingle Shanty Brook, Hamilton County, East Branch Fish Creek, Lewis County.

Sources: Bray 1915; Levine 1998; McVaugh 1958; Metzler and Tiner 1992; Shanks 1966; Tiner 1985; NYNHP field surveys.

C. FORESTED MINERAL SOIL WETLANDS

This subsystem includes seasonally flooded forests, and permanently flooded or saturated swamps. These forests and swamps typically have at least 50% canopy cover of trees. For the purposes of this classification, a tree is defined as a woody plant usually having one principal stem or trunk, a definite crown shape, and characteristically reaching a mature height of at least 16 ft (5 m) (Driscoll et al. 1984).

1. Floodplain forest: a hardwood forest that occurs on mineral soils on low terraces of river floodplains and river deltas. These sites are characterized by their flood regime; low areas are annually flooded in spring, and high areas are flooded irregularly. Some sites may be quite dry by late summer, whereas other sites may be flooded again in late summer or early autumn (these floods are caused by heavy precipitation associated with tropical storms). This is a broadly defined community; floodplain forests are quite variable and may be very diverse.

Approximately 353 acres of land in this community are located in the town. Examples of the this community are located along the West River in and northeast of the Village of Rushville and west of Crowe Road, and along Flint Creek north and south of the hamlet of Gorham.

With a ranking of S2 S3, this community is considered to be vulnerable in New York State.

The most abundant trees include silver maple (*Acer saccharinum*), ashes (*Fraxinus pensylvanica, F. nigra, F. americana*), cottonwood (*Populus deltoides*), red maple (*Acer rubrum*), box elder (*Acer negundo*), elms (*Ulmus americana, U. rubra*), hickories (*Carya cordiformis, C. ovata, C. laciniosa*), butternut and black walnut (*Juglans cinerea, J. nigra*), sycamore (*Platanus occidentalis*), oaks (*Quercus bicolor, Q. palustris*), and river birch (*Betula nigra*). Other less frequently occurring trees include hackberry (*Celtis occidentalis*), tulip tree (*Liriodendron tulipifera*), basswood (*Tilia americana*), and sugar maple (*Acer saccharum*). Introduced trees, such as white willow (*Salix alba*) and black locust (*Robinia pseudo-acacia*), have become established in some floodplain forests.

The most abundant shrubs include spicebush (*Lindera benzoin*), ironwood (*Carpinus carolinianus*), bladdernut (*Staphylea trifoliata*), speckled alder (*Alnus incana* spp. *rugosa*), dogwoods *(Cornus sericea, C. foemina* spp. *racemosa, C. amomum*), viburnums (*Viburnum cassinoides, V. prunifolium, V. dentatum, V. lentago*), and sapling canopy trees. Invasive exotic shrubs that may be locally abundant include shrub honeysuckles (*Lonicera tatarica, L. morrowii*), and multiflora rose (*Rosa multiflora*). Other less frequently occurring shrubs include meadowsweet (*Spiraea alba* var. *latifolia*) and winterberry (*Ilex verticillata*). The most abundant vines include poison ivy (*Toxicodendron radicans*), wild grapes (*Vitis riparia, Vitis* spp.), Virginia creeper (*Parthenocissus quinquefolia*), virgin's bower (*Clematis virginiana*), and less frequently, moonseed (*Menispermum canadense*). Vines may form a dense liana in tree canopy and/or dominate the groundcover.

The most abundant herbs include sensitive fern (*Onoclea sensibilis*), jewelweeds (*Impatiens capensis, I. pallida*), ostrich fern (*Matteuccia struthiopteris*), white snakeroot (*Eupatorium rugosum*), wood nettle (*Laportea canadensis*), false nettle (*Boehmeria cylindrica*), goldenrods (*Solidago gigantea, S. canadensis, Solidago* spp.), lizard's tail (*Saururus cernuus*), and jumpseed (*Polygonum*

virginianum). Invasive exotic herbs that may be locally abundant include moneywort (*Lysimachia nummularia*), garlic mustard (*Alliaria petiolata*), dame's rockets (*Hesperis matronalis*), and stilt grass (*Microstegium vimineum*). Other less frequently occurring herbs include skunk cabbage (*Symplocarpus foetidus*), enchanter's nightshade (*Circaea lutetiana* ssp. *canadensis*), bluejoint grass (*Calamagrostis canadensis*), white avens (*Geum canadense*), clearweed (*Pilea pumila*), jack-in-the-pulpit (*Arisaema triphyllum*), rice cutgrass (*Leersia oryzoides*), sedges *(Carex lacustris, C. intumescens, C. lupulina*), and many others.

Characteristic birds include yellow-throated vireo (*Vireo flavifrons*), tufted titmouse (*Parus bicolor*), redbellied woodpecker (*Melanerpes carolinus*), and pileated woodpecker (*Dryocopus pileatus*). The composition of the forest apparently changes in relation to flood frequency and elevation of floodplain terraces along larger rivers. Neighboring states recognize several floodplain forest variants based on dominant plants, flood regime, and topographic position (Fike 1999, Kearsley 1999, Sorenson et al. 1998). The composition of floodplain forests in New York State has not been studied in sufficient detail to characterize compositional variations and how they correlate with flood regime and terrace elevation.

Distribution: throughout upstate New York, north of the Coastal Lowlands ecozone.

Rank: G3 G4 S2 S3 *Revised:* 2001

Examples: Raquette River, Franklin County; Howland Island, Cayuga County; Catskill Creek, Greene County; Doyles Islands, Delaware County; South Bay Creek Wetlands, Washington County.

Sources: Barrett and Enser 1997; Bechtel and Sperduto 1998; Fike 1999; Gordon 1940; Kearsley 1999; Metzler and Damman 1985; Nichols et al. 2000; Sorenson et al. 1998; Veneman and Tiner 1990; NYNHP field surveys.

5. Silver maple-ash swamp: a hardwood basin swamp that typically occurs in poorly-drained depressions or along the borders of large lakes, and less frequently in poorly drained soils along rivers. These sites are characterized by uniformly wet conditions with minimal seasonal fluctuations in water levels.

The dominant trees are usually silver maple (*Acer saccharinum*) and green ash (*Fraxinus pennsylvanica*). American elm (*Ulmus americana*) is often present and probably was a codominant prior to the onset of Dutch elm disease and elm yellows. Other trees include black ash (*F. nigra*), white ash (*F. americana*), swamp white oak (*Quercus bicolor*), red maple (*Acer rubrum*), and occasionally the silver maple-red maple hybrid "Freeman's maple" (*Acer x freemanii*). Many of the canopy trees occur in the subcanopy along with ironwood (*Carpinus carolinianus*).

Characteristic shrubs include winterberry

Approximately 2,203 acres of silver maple-ash swamp are found in the Town of Gorham. Relatively large examples of this community are located: north and south of Route 18 between Yautzy Road and Route 247; in the center of the block bounded by Lake-to-Lake, Depew, Kearney Roads and County Rd. 17; in the northeast corner of the Town north of Depew Road; and in the non-drained portions of Potter Swamp adjoining Flint Creek southwest of the hamlet of Gorham.

With a ranking of S2 S3, this community is considered vulnerable in New York State.

(*Ilexverticillata*), spicebush (*Lindera benzoin*), variousshrubby dogwoods *(Cornus foemina ssp. racemosa, C. amomum,* and *C. sericea*), various viburnums (*Viburnumrecognitum, V. lentago,* and V. *cassinoides*), speckledalder (*Alnus incana* ssp. *rugosa*), gooseberries (*Ribes*spp.), and sapling canopy trees. Characteristic vinesinclude Virginia creeper (*Parthenocissus quinquefolia*) and poison ivy (*Toxicodendron radicans*).

Characteristic herbs include sensitive fern (*Onoclea sensibilis*), skunk cabbage (*Symplocarpus foetidus*), false nettle (*Boehmeria cylindrica*), wood-nettle (*Laportea canadensis*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*O. regalis*), marsh fern (*Thelypteris palustris*), jewelweed (*Impatiens capensis*), mannagrasses (*Glyceris striata, G. grandis*), and various sedges (*Carex lupulina, C. crinita, C. bromoides,* and *C. lacustris*). Other herbs in wetter examples include arrow arum (*Peltandra virginica*), arrowheads (*Sagittaria* spp.), wild calla (*Calla palustris*), cattail (*Typha latifolia*), and duckweeds (*Lemna* spp.). A few examples are dominated by reed canary grass (*Phalaris arundinacea*) and/or lizard's tail (*Sauruus cernuus*). Silver maple-ash swamps are often underlain by calcareous bedrock and may contain a few calciphilic species, such as northern white cedar (*Thuja occidentalis*) and alder-leaf buckthorn (*Rhamnus alnifolia*). Ash-elm dominated swamps with little or no maple are tentatively included here until more data are collected on this variant.

Data on characteristic animals are needed.

Distribution: in central and western New York in the Appalachian Plateau ecozone, and in the Champlain Valley sub-zone of the Lake Champlain ecozone.

Rank: G3 G4 S2 S3 *Revised:* 2001

Examples: Kings Bay Wetlands, Clinton County; Beaver Creek Swamp, St. Lawrence County; Black Creek Swamp, Monroe County; Cicero Swamp, Onondaga County; Conesus Wetlands, Livingston County.

Source: Huenneke 1982; NYNHP field surveys.

C. PALUSTRINE CULTURAL

This subsystem includes communities that are eithercreated and maintained by human activities, or are modified by human influence to such a degree that the physical conformation of the substrate, the hydrology, or the biological composition of the resident community is substantially different from the character of the substrate, hydrology, or community as it existed prior to human influence.

1. Reverted drained muckland: a wetland with muck soils that has been drained and cultivated (e.g., for vegetable crops), and subsequently allowed to flood and thereby revert to a wetland.

Distribution: throughout upstate New York, north of theCoastal Lowlands ecozone.

Rank: G5 S5 *Revised:* 1990

This community is represented by an approximately 215-acre portion of the Potter Swamp along Flint Creek, southwest of the hamlet of Gorham.

VI. TERRESTRIAL SYSTEM

The terrestrial system consists of upland habitats. These habitats have well-drained soils that are dry to mesic (never hydric), and vegetative cover that is never predominantly hydrophytic, even if the soil surface is occasionally or seasonally flooded or saturated. In other words, this is a broadly defined system that includes everything except aquatic, wetland, and subterranean communities.

A. OPEN UPLANDS

This subsystem includes upland communities with less than 25% canopy cover of trees; the dominant species in these communities are shrubs, herbs, or cryptogammic plants (mosses, lichens, etc.). Three distinctive physiognomic types are included in this subsystem. Grasslands include communities that are dominated by grasses and sedges; they may include scattered shrubs (never more than 50% cover of shrubs), and scattered trees (usually less than one tree per acre, or 3 trees per hectare). Meadows include communities with forbs, grasses, sedges, and shrubs codominant; they may include scattered trees. Shrublands include communities that are dominated by shrubs (more than 50% cover of shrubs); they may include scattered trees.

18. Calcareous cliff community: a community that occurs on vertical exposures of resistant, calcareous bedrock (such as limestone or dolomite) or consolidated material; these cliffs often include ledges and small areas of talus. There is minimal soil development, and vegetation is sparse. Different types of calcareous cliffs may be distinguished based on exposure and moisture; these variations are not welldocumented in New York, therefore the assemblages associated with these variations (sunny, shaded, moist, or dry areas) are combined in one community.

A 3-acre example of this relatively rare and moderately vulnerable community is located in the southwestern portion of the town, overlooking Canandaigua Lake.

Characteristic small trees and shrubs include eastern red cedar (*Juniperus virginiana*), hop hornbeam (*Ostrya virginiana*), round-leaf dogwood (*Cornus rugosa*), Canada yew (*Taxus canadensis*), black cherry (*Prunus serotina*), downy arrow-wood (*Viburnum rafinesquianum*), and northern white cedar (*Thuja occidentalis*).

Characteristic herbs growing in cracks and on ledges include bulblet fern (*Cystopteris bulbifera*), sedge (*Carex eburnea*), herb robert (*Geranium robertianum*), zig-zag goldenrod (*Solidago flexicaulis*), Campanula rotundifolia, purple cliff brake (*Pellaea atropurpurea*), early saxifrage (*Saxifraga virginiensis*), and red columbine (*Aquilegia canadensis*).

Characteristic nonvascular species include lichens and mosses, such as *Thuidium* sp., *Anomodon attenuatus, A. rostratus,* and *Brachythecium* sp. *Distribution:* throughout upstate New York, north of the Coastal Lowlands ecozone, where bedrock is calcareous.

Rank: G4 S3 S4 *Revised:* 2001

Examples: The Diameter, Washington County; Helderberg Escarpment at Thatcher State Park, Albany County; Deer Leap, Warren County; Rogers Rock and Slide, Essex and Warren Counties.
Source: NYNHP field surveys.

25. Successional old field: a meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned.

Approximately 1,669 acres of this community are located in the town. Most of the examples are located west of State Route 247, where former farmland may be held for future development.

Characteristic herbs include goldenrods (*Solidago altissima, S. nemoralis, S. rugosa, S. juncea, S. canadensis,* and *Euthamia graminifolia*), bluegrasses (*Poa pratensis, P. compressa*), timothy (*Phleum pratense*), quackgrass (*Agropyron repens*), smoothbrome (*Bromus inermis*), sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*), common chickweed (*Cerastium arvense*), common evening primrose (*Oenothera biennis*), oldfield cinquefoil (*Potentilla simplex*), calico aster (*Aster lateriflorus*), New England aster (*Aster novae-angliae*), wild strawberry (*Fragaria virginiana*), Queen-Anne'slace (*Daucus corota*), ragweed (*Ambrosia artemisiifolia*), hawkweeds (*Hieracium* spp.), dandelion (*Taraxacum officinale*), and ox-tongue (*Picris hieracioides*).

Shrubs may be present, but collectively they have less than 50% cover in the community. Characteristic shrubs include gray dogwood (*Cornus foemina* ssp. *racemosa*), silky dogwood (*Cornus amomum*), arrowwood (*Viburnum recognitum*), raspberries (*Rubus* spp.), sumac (*Rhus typhina, R. glabra*), and eastern red cedar (*Juniperus virginiana*).

A characteristic bird is the field sparrow (*Spizella pusilla*). This is a relatively short-lived community that succeeds to a shrubland, woodland, or forest community.

Distribution: throughout New York State.

Rank: G4 S4 *Revised:* 1990

Example: Chippewa Creek Plains, St. Lawrence County; Finger Lakes National Forest, Schuyler County.

26. Successional shrubland: a shrubland that occurs on sites that have been cleared (for farming, logging, development, etc.) or otherwise disturbed. This community has at least 50% cover of shrubs. Characteristic shrubs include gray dogwood (*Cornus foemina* ssp. *racemosa*), eastern red cedar (*Juniperus virginiana*), raspberries (*Rubus* spp.), hawthorne (*Crataegus* spp.), serviceberries (*Amelanchier* spp.), choke-cherry (*Prunus virginiana*), wild plum (*Prunus americana*), sumac (*Rhus glabra, R. typhina*), nanny-berry (*Viburnum lentago*), arrowwood (*Viburnum recognitum*), and multiflora rose (*Rosa multiflora*).

Approximately 598 acres of this community are found in the town. As with the successional old fields, examples of this community are located primarily west of State Route 247.

Birds that may be found in successional shrublands brown thrasher, blue-winged warbler, golden-winged warbler, chestnut-sided warbler, yellow-breasted chat, eastern towhee, field sparrow, song sparrow, and indigo bunting (Levine 1998).

Distribution: throughout New York State.

Rank: G4 S4 *Revised:* 1990

Example: Chippewa Creek Plains, St. Lawrence County; Finger Lakes National Forest, Schuyler County.

Source: NYNHP field surveys.

B. BARRENS AND WOODLANDS

This subsystem includes upland communities that are structurally intermediate between forests and open canopy uplands. Several physiognomic types are included in this subsystem. Savannas are communities with a sparse canopy of trees (25 to 60% cover), and a groundlayer that is predominantly either grassy or shrubby (these will be called, respectively, grasssavanna and shrub-savanna). Woodlands include communities with a canopy of stunted or dwarf trees (less than 16 ft or 4.9 m tall), and wooded communities occurring on shallow soils over bedrock with numerous rock outcrops. The term "barrens" is commonly applied to both savannas and woodlands (e.g. pine barrens).

24. Successional red cedar woodland: a woodland community that commonly occurs on abandoned agricultural fields and pastures, usually at elevations less than 1000 ft (305 m).

The dominant tree is eastern red cedar (*Juniperus virginiana*), which may occur widely spaced in young stands and may be rather dense in more mature stands. Smaller numbers of gray birch (*Betula populifolia*), hawthorn (*Crataegus* spp.), buckthorn (*Rhamnus cathartica*), and other early successional hardwoods may be present. On slopes along the Finger Lakes, red cedar is commonly found mixed with white ash (*Fraxinus americana*) and black walnut (*Juglans nigra*).

Approximately 35 acres of this community is located at two sites in the town, east of County Road 11, north and south of Jones Road.

Shrubs and groundlayer vegetation are similar to a successional old field; in some stands the groundcover consists of a nearly pure stand of non-native bluegrasses such as *Poa compressa* and *P. pratensis*.

A characteristic bird is the prairie warbler (*Dendroica discolor*).

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

Examples: Champlain Valley Essex, Essex County; Crown Point, Essex County; Beaver Brook Valley, Essex County; NY State Thruway at Cauterskill, Greene County.
Source: NYNHP field surveys.

C. FORESTED UPLANDS

This subsystem includes upland communities with more than 60% canopy cover of trees; these communities occur on substrates with less than 50% rock outcrop or shallow soil over bedrock.

11. Appalachian oak-hickory forest: a hardwood forest that occurs on well-drained sites, usually on ridgetops, upper slopes, or south- and west-facing slopes. The soils are usually loams or sandy loams. This is a broadly defined forest community with several regional and edaphic variants. The dominant trees include one or more of the following oaks: red oak (*Quercus rubra*), white oak (*Q. alba*), and black oak (*Q. velutina*). Mixed with the oaks, usually at lower densities, are one or more of the following hickories: pignut (*Carya glabra*), shagbark (*C. ovata*), and sweet pignut (*C. ovalis*). Common associates are white ash (*Fraxinus americana*), red maple (*Acer rubrum*), and Eastern hop hornbeam (*Ostrya virginiana*).

There is typically a subcanopy stratum of small trees and tall shrubs including flowering dogwood (*Cornus florida*), witch hazel (*Hamamelis virginiana*), shadbush (*Amelanchier arborea*), and choke cherry (*Prunus virginiana*). Common low shrubs include maple-leaf viburnum (*Viburnum acerifolium*), blueberries (*Vaccinium angustifolium, V. pallidum*), red raspberry (*Rubus idaeus*), gray dogwood (*Cornus foemina* ssp. *racemosa*), and beaked hazelnut (*Corylus cornuta*). The shrublayer and groundlayer flora may be diverse. Characteristic groundlayer herbs are wild sarsaparilla (*Aralia nudicaulis*), false Solomon's seal (*Smilacina racemosa*), Pennsylvania sedge (*Carex pensylvanica*), tick-trefoil (*Desmodium glutinosum, D. paniculatum*), black cohosh (*Cimicifuga racemosa*), rattlesnake root (*Prenanthes alba*), white goldenrod (*Solidago bicolor*), and hepatica (*Hepatica americana*).

The Town's only example of this community is located in the southwestern portion of the Town, along Canandaigua Lake. It occupies approximately 7,000 sq. ft.

This community is immediately north of the Town's calcareous cliff community.

Characteristic animals include red-bellied woodpecker (*Melanerpes carolinus*), whip-poor-will (*Caprimulgus vociferus*), and wild turkey (*Meleagris gallopavo*). *Distribution:* throughout upstate New York north of the Coastal Lowlands ecozone; most common south of the Adirondacks ecozone. *Rank:* G4G5 S4 *Revised:* 1990 *Examples:* Bristol Hills, Ontario County; Finger Lakes National Forest, Schuyler County; Storm King Mountain, Orange County; Long Eddy, Delaware County.

Sources: McIntosh 1972; Ross 1958; YNHP Nield surveys.

17. Beech-maple mesic forest: a hardwood forest with sugar maple (*Acer saccharum*) and beech (*Fagus grandifolia*) codominant. This is a broadly defined community type with several regional and edaphic variants. These forests occur on moist, well-drained, usually acid soils. Common associates are yellow birch (*Betula alleghaniensis*), white ash (*Fraxinus americana*), eastern hop hornbeam (*Ostrya virginiana*), and red maple (*Acer rubrum*). There are relatively few shrubs and herbs.

There are six examples of this community in the Town, ranging in size from 100 to 600 acres, with a total of approximately 163 acres. All are located west of Middle Road. A large area is located east of Robson Road and south of Lake to Lake Road, one just northeast of the hamlet of Gorham, and one on the eastern edge of the town just north of Frederickson Road.

Characteristic small trees or tall shrubs are hobblebush (*Viburnum lantanoides*), American hornbeam (*Carpinus caroliniana*), striped maple (*Acer pensylvanicum*), witch hazel (*Hamamelis virginiana*), and alternate-leaved dogwood (*Cornus alternifolia*). Dominant groundlayer species are star flower (*Trientalis borealis*), common wood-sorrel (*Oxalis montana*), Canada mayflower (*Maianthemum canadense*), painted trillium (*Trillium undulatum*), purple trillium (*T. erectum*), shining clubmoss (*Lycopodium lucidulum*) and intermediate wood fern (*Dryopteris intermedia*). Associated herbs include Christmas fern (*Polystichum acrostichoides*), jack-in-the-pulpit (*Arisaema triphyllum*) and falseSolomon's seal (*Smilacina racemosa*). There are many spring ephemerals which bloom before the canopy trees leaf out. Typically there is also an abundance of tree seedlings, especially of sugar maple; beech and sugar maple saplings are often the most abundant "shrubs" and small trees. Hemlock (*Tsuga canadensis*) may be present at a low density. In the Adirondacks a few red spruce (*Picea rubens*) may also be present.

Characteristic birds include American redstart (*Setophaga ruticilla*), red-eyed vireo (*Vireo olivaceus*), ovenbird (*Seiurus aurocapillus*), black-throated blue warbler (*Dendroica caerulescens*), least flycatcher (*Empidonax minimus*), Acadian flycatcher (*Empidonax virescens*), and red-bellied woodpecker (*Melanerpes carolinus*). Within extensive areas of beech-maple mesic forest, there are often associated small patches of hemlock-northern hardwood forest in steep ravines and gullies where hemlock is locally dominant.

Distribution: throughout New York State.

Rank: G4 S4 *Revised:* 2001

Examples: Five Ponds Wilderness Area, Herkimer and Hamilton Counties; West Canada Lakes Wilderness Area, Herkimer and Hamilton Counties; Central Tug Hill Forest, Lewis and Oswego Counties; Slide Mountain, Sullivan and Ulster Counties.

Sources: Eyre 1980; Gordon 1940; Heimburger 1934; Holmes et al. 1986; Leopold et al. 1988; McIntosh 1972; Shanks 1966; NYNHP field surveys.

19. Hemlock-northern hardwood forest: a mixed forest that typically occurs on middle to lower slopes of ravines, on cool, mid-elevation slopes, and on moist, well-drained sites at the margins of swamps. In any one stand, hemlock (*Tsuga canadensis*) is codominant with any one to three of the following: beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), red maple (*A. rubrum*), black cherry (*Prunus serotina*), white pine (*Pinus strobus*), yellow birch (*Betula alleghaniensis*), black birch (*B. lenta*), red oak (*Quercus rubra*), and basswood (*Tilia americana*). The relative cover of hemlock is quite variable, ranging from nearly pure stands in some steep ravines to as little as 20% of the canopy cover. Striped maple (*Acer pensylvanicum*) is often prominent as amid-story tree. The shrublayer may be sparse; characteristic shrubs are hobblebush (*Viburnum lantanoides*), mapleleaf viburnum (*Viburnum acerifolium*), and raspberries (*Rubus* spp.). In some ravines, especially in the southern part of the state, rosebay (*Rhododendron maximum*) forms a dense subcanopy or tall shrublayer. Canopy cover can be quite dense, resulting in low light intensities on the forest floor and hence a relatively sparse groundlayer.

Three small examples of this community are located along the slopes of gullies (Gage Gully and Fisher Gully) located in the southwestern portion of the Town, north and south of Jones Road . The community along Fisher Gully extends approximately one mile inland, and adjoins Route 364. This community occupies approximately 35 acres in the town.

Characteristic groundlayer plants are Indian cucumber-root (*Medeola virginiana*), Canada mayflower (*Maianthemum canadense*), shining clubmoss (*Lycopodium lucidulum*), common wood fern (*Dryopteris intermedia*), mountain wood fern (*Dryopteris campyloptera*), christmas fern (*Polystichum acrostichoides*), star flower (*Trientalis borealis*), bellwort (*Uvularia sessilifolia*), common wood-sorrel (*Oxalis acetosella*), partridge berry (*Mitchella repens*), foamflower (*Tiarella cordifolia*), round-leaf violet (*Viola rotundifolia*), twisted stalk (*Streptopus roseus*), purple trillium (*Trillium erectum*), and the moss *Leucobryum glaucum*. In forests that have beech as a codominant, beech-drops (*Epifagus virginiana*) is a common herb.

Characteristic birds include wild turkey (*Meleagris gallopavo*), pileated woodpecker (*Dryocopus pileatus*) golden-crowned kinglet (*Regulus satrapa*), blackthroated green warbler (*Dendroica virens*), and Acadian flycatcher (*Empidonax virescens*). This is a broadly defined and very widespread community, with many regional and edaphic variants. For example, in the Hudson Valley, hemlock is sometimes codominant with red oak; in the Adirondacks, yellow birch and sugar maple are sometimes codominant, with a relatively small number of hemlocks as well as a few red spruce (*Picea rubens*). More data on the shrublayer and groundlayer composition are needed before these regional variants can be distinguished as separate types.

Distribution: throughout New York State.

Rank: G4G5 S4 *Revised:* 1990

Examples: Ampersand Mountain, Franklin County; Five Ponds Wilderness Area, Herkimer and Hamilton Counties; Slide Mountain, Sullivan and Ulster Counties; Big Basin in Allegany State Park, Cattaraugus County

Sources: Eyre 1980; Heimburger 1934; Leopold et al. 1988; McIntosh 1972; McVaugh 1958; Ross 1958; Shanks 1966; NYNHP field surveys.

26. Successional northern hardwoods: a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed.

Examples of this community are found throughout the town, and occupy approximately 2,800 acres.

Characteristic trees and shrubs include any of the following: quaking aspen (*Populus tremuloides*), bigtooth aspen (*P. grandidentata*), balsam poplar (*P. balsamifera*), paper birch (*Betula papyrifera*), or gray birch (*B. populifolia*), pin cherry (*Prunus pensylvanica*), black cherry (*P. serotina*), red maple (*Acer rubrum*), white pine (*Pinus strobus*), with lesseramounts of white ash (*Fraxinus americana*), green ash (*F. pensylvanica*), and American elm (*Ulmus americana*). Northern indicators include aspens, birches, and pin cherry. This is a broadly defined community and several seral and regional variants are known.

Characteristic birds include chestnut-sided warbler (*Dendroica pensylvanica*), Nashville warbler (*Vermivora ruficapilla*) in young forests with aspen and birch seedlings, and yellow-bellied sapsucker (*Sphyrapicus varius*) in mature aspen forests.

Distribution: throughout upstate New York north of the Coastal Lowlands ecozone.

Rank: G5 S5 *Revised:* 2001

Example: Chase Lake Sandplain, Lewis County.

Source: Mellinger and McNaughton 1975; NYNHP field surveys..

D. TERRESTRIAL CULTURAL

This subsystem includes communities that are either created and maintained by human activities, or are modified by human influence to such a degree that the physical conformation of the substrate, or the biological composition of the resident community is substantially different from the character of the substrate or community as it existed prior to human influence.

1. Cropland/row crops: an agricultural field planted in row crops such as corn, potatoes, and soybeans. This community includes vegetable gardens in residential areas.

Approximately 18,767 acres of the town are currently used for row crops or field crops.

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

2. Cropland/field crops: an agricultural field planted in field crops such as alfalfa, wheat, timothy, and oats. This community includes hayfields that are rotated to pasture. Characteristic birds include grasshopper sparrow (*Ammodramus savannarum*), vesper sparrow (*Pooecetes*

gramineus), bobolink (*Dolichonys oryzivorous*), mourning dove (*Zenaida macroura*), and upland sandpiper (*Bartramia longicauda*)

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

3. Pastureland: agricultural land permanently maintained (or recently abandoned) as a pasture area for livestock. Characteristic birds include grasshopper sparrow (*Ammodramus savannarum*), vesper sparrow (*Pooecetes gramineus*), horned lark (*Eremophila alpestris*), killdeer (*Charadrius vociferus*), and upland sandpiper (*Bartramia longicauda*).

Approximately 667 acres in the town are currently used for pasture.

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

4. Flower/herb garden: residential, commercial, or horticultural land cultivated for the production of ornamental herbs and shrubs. This community includes gardens cultivated for the production of culinary herbs. Characteristic birds include American robin (*Turdusmigratorius*) and mourning dove (*Zenaida macroura*). *Distribution:* throughout New York State.

Approximately 14 acres are devoted to flower/herb gardens or nursery.

Rank: G5 S5 *Revised:* 1990

5. Orchard: a stand of cultivated fruit trees (such as apples, cherries, peaches, pears, etc.), often with grasses as a groundcover. An orchard may be currently under cultivation or recently abandoned. Staghorn sumac (*Rhus typhina*), goldenrods (*Solidago* spp.), and poison ivy (*Toxicodendron radicans*) may be commonin abandoned orchards. Characteristic birds include American robin (*Turdus migratorius*), eastern kingbird (*Tyrannus tyrannus*), mourning dove (*Zenaida macroura*), and in mature orchards with a minimum dbh of 10 in (about 25 cm), yellow-bellied sapsucker (*Sphyrapicus varius*). *Distribution:* throughout New York State at low elevations.

Approximately 28 acres are shown as part of orchards.

Rank: G5 S5 *Revised:* 1990

10. Conifer plantation: a stand of softwoods planted for the cultivation and harvest of timber products, or to provide wildlife habitat, soil erosion control, windbreaks, or landscaping. This is a broadly defined community that excludes stands in which pine, spruce, or fir are dominant, although they may be present at low densities. These plantations may be monocultures, or they may be mixed stands with two or more codominant species.

Approximately 123 acres throughout the town are conifer plantations.

Softwoods that are typically planted in these plantations include European larch (*Larix decidua*), Japanese larch (*Larix kaempferi*), and northern white cedar (*Thuja occidentalis*). Groundlayer vegetation is usually sparse, apparently because of the dense accumulation of leaf litter. Speedwell (*Veronica officinalis*) is a characteristic groundlayer plant. More data on this community are needed.

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

12. Mowed lawn: residential, recreational, or commercial land, or unpaved airport runways in which the groundcover is dominated by clipped grasses and there is less than 30% cover of trees. Ornamental and/or native shrubs may be present, usually with lessthan 50% cover. The groundcover is maintained by mowing.

Approximately 2,530 acres are mowed lawns.

Characteristic birds include American robin (*Turdus migratorius*), upland sandpiper (*Bartramia longicauda*), and killdeer (*Charadrius vociferus*).

Distribution: throughout New York State.

21. Gravel mine: an excavation in a gravel deposit from which gravel has been removed. Often these are dug into glacial deposits such as eskers or kames. Vegetation may be sparse if the mine is active; there may be substantial vegetative cover if the mine has been inactive for several years. Near-vertical slopes areused by bank swallows (*Riparia riparia*) for nestingsites.

A small area (<2 acres) north of Depew and east of County Road 17 is a current or former sand or gravel mine.

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

22. Sand mine: an excavation in a sand deposit or sand dune from which sand has been removed. Vegetation is usually sparse.

A characteristic bird is bank swallow (*Riparia riparia*).

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

30. Landfill/dump: a site that has been cleared or excavated, where garbage is disposed. The bulk of the material in the landfill or dump is organic and biodegradable; although some inorganic material (plastic, glass, metal, etc.) is usually present.
Distribution: throughout New York State.
Rank: G5 S5 *Revised:* 1990

Approximately 11 acres in the town have been filled with refuse (landfill/dump or junkyard). One site is located in the northwestern corner of the hamlet of Gorham. The other is at the eastern edge of "Cottage City," along County Road 1

31. Junkyard: a site that has been cleared for disposal or storage of primarily inorganic refuse, including discarded automobiles, large appliances, mechanical parts, etc.

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

33. Urban structure exterior: the exterior surfaces of metal, wood, or concrete structures (such as commercial buildings, apartment buildings, houses, bridges) or any structural surface composed of inorganic materials (glass, plastics, etc.) in an urban or densely populated suburban area. These sites may besparsely vegetated with lichens, mosses, and terrestrial algae; occasionally vascular plants may grow in cracks. Nooks and crannies may provide nesting habitat forbirds and insects, and roosting sites for bats.

Approximately 122 acres are included in this classification.

Characteristic birds include common nighthawk (*Chordeiles minor*) on rooftops, American robin (*Turdus migratorius*) on porches or under shelter, and exotic birds such as rock dove (*Columba livia*) and house sparrow (*Passer domesticus*).

Distribution: throughout New York State.

Rank: G5 S5 *Revised:* 1990

34. Rural structure exterior: the exterior surfaces of metal, wood, or concrete structures (such as commercial buildings, barns, houses, bridges) or any structural surface composed of inorganic materials (glass, plastics, etc.) in a rural or sparsely populated suburban area. These sites may be sparsely vegetated with lichens, mosses, and terrestrial algae; occasionally vascular plants may grow in cracks. Nooks and crannies may provide nesting habitat for birds and insects, and roosting sites for bats. Characteristic birds include American robin (*Turdus migratorius*) on porches or under shelter, barn swallow (*Hirundo rustica*) under shelter, and exotic
birds such as rock dove (*Columba livia*), house sparrow (*Passer domesticus*), and European starling (*Sturnus vulgaris*). *Distribution:* throughout New York State.

Approximately 261 acres are included in this classification.

Rank: G5 S5 *Revised:* 1990