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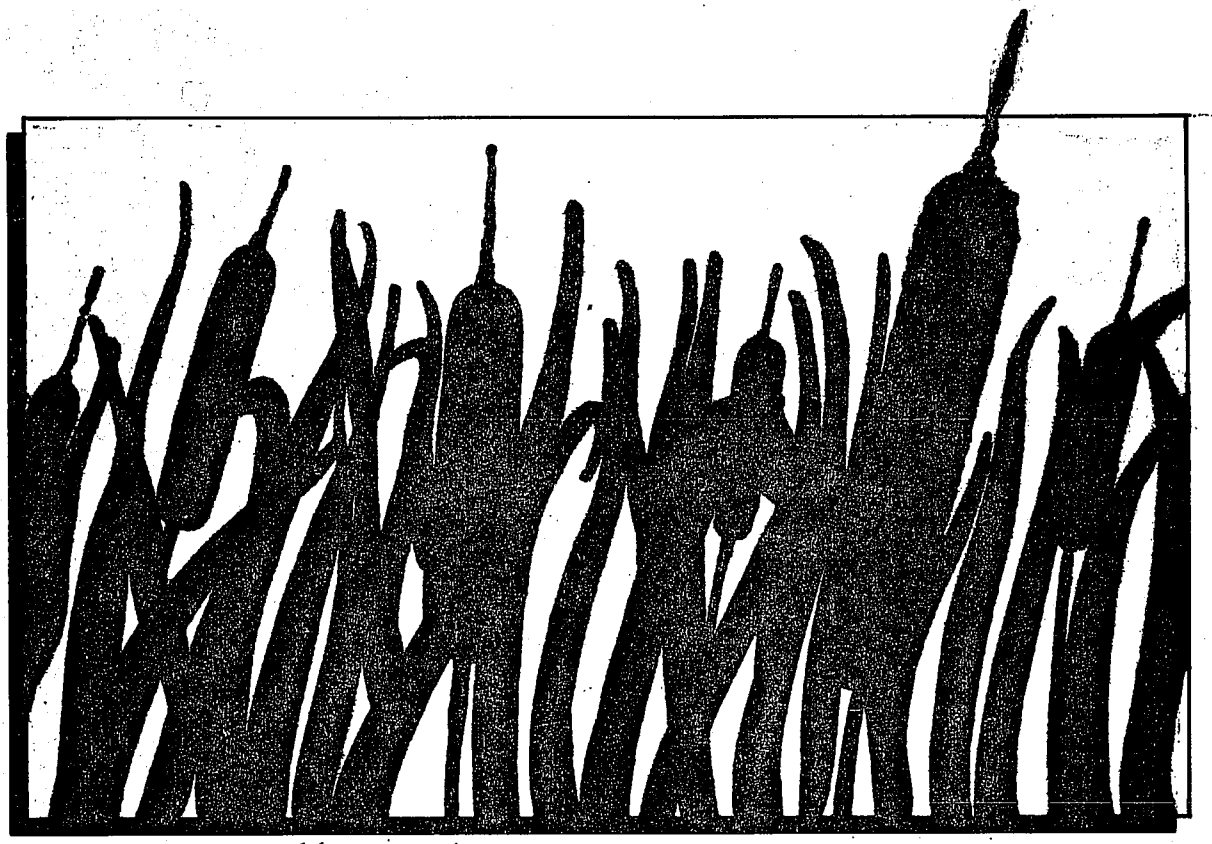
THE INLAND WETLANDS



A Handbook For An Ecosystem

Prepared By

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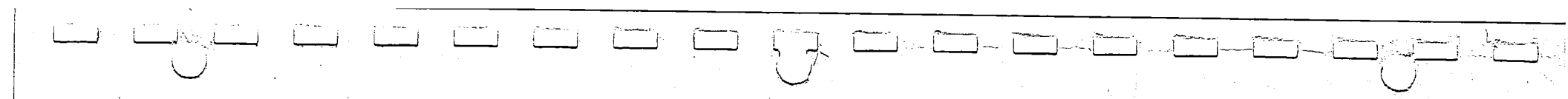
OF BLOOMFIELD



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Inland Wetland Evaluation of Bloomfield Connecticut

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Bloomfield's Wetland Methodology

Each inland wetland in Bloomfield was evaluated for its hydrologic, biologic and cultural functions. Different sets of criteria were used to evaluate each wetland function. These sets of criteria standardized the evaluation, so that each wetland was evaluated on an equal basis, against a single format.

Criteria for each function are divided into three categories, each of which is assigned points based on whether that category increases or decreases the ability of the wetland to perform that particular function. The three categories are: high (2 points), medium (1 point), and low (0 points). Each criterion for evaluating wetland functions, however, does not always equally affect a wetland's ability to perform a particular function. Such is the case for wildlife habitat, where especially important criteria are multiplied by a significance coefficient.

The information used to determine the high, medium, and low values were gathered from written materials such as:

--the SCS Soil Survey Handbook
--Water Resources Bulletin No. 24 Plate B, CT D.E.P. map of surficial geology
--CT's Groundwater Availability Map
--M.D.C. Maps of Bloomfield
--Flood Insurance Study, Town of Bloomfield
--Report on Establishment of Stream Encroachment Lines, North Branch of the Park River
--Water Resources Bulletin No. 24, CT D.E.P.

and on-site field investigations.

It should be remembered that this methodology is a relative rating system. It ranks the relative abilities of wetlands to perform various functions. The functional significance of wetlands has been well-established (see references); all unimpacted wetlands have some valuable affect on the

hydrology and biology of their ecosystem.

It should also be noted that this methodology is not designed to produce a single numerical ranking for each wetland. Its purpose is to provide information on each particular function for individual wetland ecosystems. Certain wetland functions are important enough to necessitate protection, regardless of whether other functions are performed by the wetland or not. (See section on How to Use the Evaluation, page 17.)

The Value for Groundwater Exchange Potential

Criteria	High 2	Medium 1	Low 0
1. surficial geology	coarse-grained	fine-grained	till
2. groundwater-surface water interaction	fragipan absent		fragipan present
3. contiguity	stream outlet absent	stream outlet constricted	stream outlet well-defined

5 to 6 = HIGH

3 to 4 = MEDIUM

0 to 2 = LOW

Groundwater Exchange Potential

1. Surficial Geology. Water moves easily through stratified coarse-grained material and very slowly through an unsorted and/or fine-grained substrate. Thus, there is a greater probability that wetlands underlain by coarse-grained stratified drift will exchange water with the groundwater aquifer more readily than wetlands underlain by glacial till or fine-grained glacial lake deposits.

2. Groundwater-surface water interaction. The presence of a fragipan (compacted, impermeable layer of soil) inhibits groundwater-surface water interaction.

3. Contiguity. Lack of a defined stream outlet suggests a prolonged retention time of water, and therefore a greater possible recharge potential.

The Value for Flood Control

Criteria	HIGH 2	MEDIUM 1	LOW 0
1. size	>100 ac.	50-100 ac.	<50 ac.
2. storage capacity	surface storage available		surface storage not available
3. hydrologic location	wetland assoc. with stream		wetland not assoc. with stream
4. position in watershed	headwater		low
5. proximity of wetland to developed areas	developed areas directly downstream	development further downstream	development not downstream
6. shape of wetland	sinuous, diffuse water flow during floods	shape long, parallel to stream axis	channelized

9 to 12 = HIGH
4 to 8 = MEDIUM
0 to 3 = LOW

Flood Control

1. Size. Flood storage capacity increases with size.

2. Storage capacity. Wetlands with deep pockets and depressions are able to retain greater amounts of water during times of floods than are wetlands with an overall shallow topography.

3. Hydrologic location. A wetland's ability to attenuate floodwaters depends on its association with watercourses, i.e. whether it receives flood waters from streams and rivers. Floodplain wetlands are more likely to receive floodwaters and therefore more likely to affect the flow of water than isolated wetlands.

4. Position in watershed. Wetlands near the head of a watershed are in a position to intercept runoff before it becomes stream flow, and therefore can decrease the amount of potential floodwater. Isolated headwater wetlands (since they do not let out directly to stream flow) are more effective than streamside headwater wetlands in reducing floodwaters.

5. Proximity of wetland to developed areas. Wetlands located just upstream from developments can have a more immediate affect on reducing the probability of flood damage.

6. Shape of a wetland. Floodwaters flowing through sinuous, irregularly shaped wetlands tend to move more slowly (and therefore tend to stay in the wetland longer) than water moving through a wetland with a straight or channelized stream.

The Value for Sediment Trapping

Criteria	HIGH 2	MEDIUM 1	LOW 0
1. vegetation density	dense fine persistent	somewhat coarse	scattered not dense
2. water flow through wetland	diffuse standing	water somewhat contained, intermittently diffuse	channelized
3. upstream land use	construction ag land bare soil upstream erosion	urban land roads parking lots	undisturbed rural
4. ratio of open water to wetland size	>50:1	25:1 to 50:1	<25:1

6 to 8 = HIGH
3 to 5 = MEDIUM
0 to 2 = LOW

Sediment Trapping

1. Vegetation density. Vegetation impedes the movement of suspended particles and thus acts as a sediment trap. Water is best filtered in wetlands with dense, fine, persistent vegetation.

2. Water flow through the wetland. The ability of water to transport sediments is directly related to its velocity. Slowly moving water lacks the energy that fast water has to carry particles. Broad diffuse or sinuous flow slows the velocity of the water, and allows the sediments to drop out of suspension.

3. Upstream land use. Wetlands immediately downstream from sediment-producing activities (construction, agricultural land, etc.) are in the best position to affect water quality. Urban lands may produce high runoff, but not necessarily high sediment yield. Rural undisturbed areas are most likely to produce little amounts of sediment, but if cleared could yield large quantities of sediment.

4. Ratio of open water to wetland size. Open water acts as a retention basin where sediments drop out of slow-moving water.

The Value for Pollution Reduction

Criteria	HIGH 2	MEDIUM 1	LOW 0
1. size	>100 ac.	50-100 ac.	<50 ac.
2. upstream land use	urban ag land developed	scattered residential	rural undisturbed
3. water flow through wetland	diffuse	somewhat contained, meandering	channelized
4. substrate	organic soil	mineral soil	sands

6 to 8 = HIGH
3 to 5 = MEDIUM
0 to 2 = LOW

Pollution Reduction

1. size. Larger wetlands are able to filter and adsorb more pollutants than smaller ones.

2. upstream land use. Wetlands downstream from pollution sources are in the best position to influence water quality. Runoff from agricultural land, urban land (roads, pavement), construction sites, industrial areas, and recently logged areas are examples of potential pollution sources.

3. water flow through the wetland. Pollutants are removed from the water by plant uptake, soil attraction, denitrification, and sediment deposition. Diffuse water flow provides optimum wetland-water interaction since its velocity is slow and retention time long, which enhances the ability of a wetland to imporove water quality.

4. substrate. Coarse-grained soil transmits water quickly and allows little opportunity for soil-water interaction. Mineral soils (especially ones high in aluminum and iron) bind phosphorous. Fine-grained soil also indicates slower percolation, and therefore a long retention time. Organic soils adsorb pollutants and indicate anerobic conditions in which decomposition (and therefore nutrient release) is slow.

The Value for Wildlife Habitat

Criteria	HIGH 2	MEDIUM 1	LOW 0
*1. size	>100 ac.	50-100 ac.	<50 ac.
2. surrounding land use	> 90% forestland and open or ag land	50-90% forest land and/or open or ag land OR 90% forestland or open or ag land	<50% forest land and/or open or ag land
*3. wetland class richness	>3 classes	2 classes	1 class
*4. dominant wetland class	SF,DM, SM	WS,SS,BG	OW,M
5. site type	bottomland-lakeside bottomland-streamside bottomland-deltaic	bottomland-isolated, upland-lakeside	upland-isolated
6. cover type	5 4	3,7 1,2,6	8
7. vegetative interspersion	type 3	type 2	type 1

*values for these criteria are multiplied by a significance coefficient of 2

13 to 20 = HIGH
6 to 12 = MEDIUM
0 to 5 = LOW

NOTE: For graphic explanation of cover type and vegetative interspersion, see Appendix 4.

Wildlife Habitat

1. Size. Large wetlands are physically able to support large and diverse populations of wildlife species. The interior of large wetlands is well-buffered from surrounding disturbances.

2. Surrounding land use. Both the type and the diversity of wetland surroundings affect the value of a wetland as a wildlife habitat. Forested land buffers the wetland against disruptive intrusions, and provides shelter and food for many wildlife species which use the wetland. Agricultural and open land is the next most valuable land for a buffer and wildlife habitat. A diverse surrounding will attract and support a diverse wildlfie population.

3. Wetland class richness. The number of classes is a measure of vegetative diversity. Wetlands with diverse vegetation will attract and support large numbers of wildlife species.

4. Dominant wetland class. Certain wetland classes are better able to support large and diverse wildlife populations. Factors taken into considerAtion when ranking wetland classes are: dominant life form of the vegetation, water depth, and permanence of surface water. Dominant wetland class is the class that covers the greatest amount of total wetland area.

5. Site type. Certain wetland site types are more valuable to wildlife

than others because of their fertility, water availability, and water persistence. Site type identifies the topological and hydrological location of a wetland.

6. Cover type. The water to vegetative cover ratio affects the value of a wetland. Wetlands with nearly equal amounts of water and cover are most valuable as wildlife areas. The degree of interspersion of cover in water affects the wildlife value of a wetland as well. Wetlands with vegetation growing in one concentric ring arround an open body of water are less valuable to wildlife than wetlands in which the vegetative cover is dispersed in a patchy and random fashion.

7. Vegetative interspersion. This is a measure of the length and number of kinds of edges present in a wetland. An edge is the interface between two different stands of subform vegetation. The length and number of different types of edges directly influence both the density and the diversity of wildlife populations. An edge fulfills the need of many wildlife species for more than one structural type of vegetation.

Golet (1976) has done extensive and thorough work on wildlife evaluation. This section of the methodology is based on this work, and adapted to the evaluation of Bloomfield's wetlands.

The Value for Recreation/Education

Criteria	HIGH 2	MEDIUM 1	LOW 0
1. access	access routes present		access routes absent
2. ownership	public		private
3. wetland class richness	>3 classes present	2 classes present	1 class present
4. open water	present		absent

6 to 8 = HIGH
3 to 5 = MEDIUM
0 to 2 = LOW

Recreation/Education

1. Access. The recreational and educational value of a wetland is most likely increased by the presence of paths, roads, trails, boardwalks, etc., since these make the area more accessible.

2. Ownership. Public lands are more accessible than private lands.

3. Wetland class richness. The recreational and educational value of a wetland increases with diversity. Wetland classes are defined according to the Golet system of classification.

4. Open water. Ponds and streams provide many kinds of popular recreational activities (canoeing boating, fishing, skating).

How To Use The Information Generated From This Evaluation

The information contained in this evaluation includes both general and specific data on each wetland in Bloomfield. The evaluation summary sheets provide overall information on how, relative to other wetlands in town, each wetland is functioning for groundwater exchange potential, flood control, pollution reduction, sediment trapping, wildlife habitat, and recreation/education. The descriptive sheets also give a general statement about the quality and composition of each wetland. More specific information is contained in the maps (both the town wetland overlay and the MDC maps) and in each data sheet from which the high, medium and low values were derived.

As was mentioned earlier, this evaluation is set up so that individual functions for every wetland must be considered, in order to get an accurate picture of the wetland ecosystem. It would be misleading to present one overall value for each wetland. Averaging values could obscure salient and significant aspects of wetland functions (see the section on data interpretation page 155). It is possible, however, to single out those wetlands in town which are particularly important, for one reason or another. This information is included in the section titled "priority wetlands".

The wetlands in Bloomfield were evaluated as whole ecosystems. Boundaries between wetland soils were determined on the basis of subdrainage divides, changes in surficial geology, and developments or other such impacts. The specific area of land which composes each evaluated wetland section is shown on the town wetland map overlay.

Although wetland permit applications are very often for portions of these evaluated areas, it is important that the entire wetland ecosystem be

considered. High, medium, and low values for each function pertain to the area as a whole, and ecologicaly, it is difficult at best to isloate and treat small sections differently than the whole. Also, impacts on a section of a wetland will in some way eventually affect the quality of the whole ecosystem.

It is intended that this report not be stagnant, but can be used over time. A detailed description of the methodology is included in this report not only to explain the derivation of each high, medium, and low value, but it is also included so that it can be used by the Commission, as conditions change. Wetlands and the areas around them are dynamic ecosystems. Both natural and man-made changes can alter the ecology of an area: land is cleared, farmlands overgrown, watercourses diverted, impoundments built, and land drained. In the event that these or similar changes occur, the methodology can be used to re-evaluate a wetland.

Where rare and endangered species were not found the term 'n/a' was used. This does not indicate that the site does not contain rare species, it is used to indicate only that they were not found during this particular study.

INDIVIDUAL WETLAND EVALUATIONS

Wetland # 1

Wetland location southeast corner of town

MDC # 57

This wetland is the western section of a larger wetland that extends into Hartford and Windsor. Half of the wetland in Blomfield has been impacted by a housing development --- the remaining undeveloped area is a red maple-ash forested wetland. Some of the understory is open and the area is used extensively by neighborhood children. Other sections of the understory are vegetated with dense patches of alder. The fine-grained textures in these soils prevent rapid drying in the spring. This wetland evaluation was done on the entire wetland ecosystem, including those areas across town boundaries.

Wetland # 1

Wetland location southeast corner of Bloomfield

MDC # 57

Hydrolgic Functions

groundwater exchange MEDIUM

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts housing developments

manmade structures/disturbances housing development

Wetland # 2

Wetland location Mount St. Benedict Cemetery

MDC # 89 90 131

The majority of this wetland in Bloomfield is used as a cemetery. The unimpacted sections to the north, across Wolcott Avenue, include a small area of red maple wooded swamp and a patch of pure cattail. These fine-grained soils (of the Swanton series) are slow to drain during wet seasons; a high groundwater table keeps this area seasonally saturated. This wetland is in the Meadow Brook watershed and continues on as a larger wetland ecosystem across the town line into Windsor.

Wetland # 2

Wetland location Mt St Benedict Cemetery

MDC # 89 90 ~~313~~ 131

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts roads

manmade structures/disturbances roads, fill

Wetland # 3

Wetland location Britton Rd., Cottage Grove Road

MDC # 89

Part of this wetland surrounds a sinuous and well-defined stream. Where the topography along this stream flattens out, sections dominated by shrubs such as alder and dogwood occur. Otherwise, the remaining wetland is forested, and dominated by red maple, American elm, ash, willow, alder, Panicum grass, multifloral rose and goldenrod. Open patches of cattail occur throughout the wooded swamp, especially where impoundments have backed up and pooled the water. Sediments from the construction upslope was entering directly into the lower sections of the stream (despite hay bales) at the time of the investigation.

Wetland # 3

Wetland location Britton Rd., Cottage Grove Road

MDC # 89

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts construction

manmade structures/disturbances roads

Wetland # 4

Wetland location behind shopping mall on Cottage Grove Road

MDC # 88

This wetland consists of former lake-bottom soils of the Scantic and Swanton series. The internal drainage of this wetland is slow due to the high silt and clay content of the soils. Lack of a hardpan allows for some interaction and exchange between this wetland and the seasonally high groundwater table.

Some parts of this wetland have been filled and built on. Other small sections have been filled and are now vegetated with disturbed-land and dryland plants such as Phragmites, goldenrod, and aspen.

The majority of this section of the wetland is a ditched meadow dominated by grasses, with patches of cattail, Phragmites, burreed, Queen Anne's lace, and scattered red maples throughout.

Behind the shopping mall, along Goodman Street, is a wooded swamp dominated by red maple with white oak and American elm on the periphery. The shrub understory here is sparse; a number of ephemeral ponds, vegetated by clumps of stressed and stunted buttonbush occur in the swamp.

Across Granby Street is another section of red maple wooded swamp, which contains a small open depression vegetated by a thick stand of cattail, surrounded by buttonbush and winterberry.

Wetland # 4

Wetland location behind the shopping mall on Cottage Grove Road

MDC # 88

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts roads

manmade structures/disturbances fill

Wetland # 5

Wetland location southern boundary, Croydon Road

MDC # 55

This wetland is part of the North Branch of the Park River watershed. A housing development in Hartford has impacted a lartge portion of this wooded swamp. Red maple and ash co-dominate the upper forest canopy. Patches of dense shrubs such as alder and highbush blueberry occur throughout the understory. The vegetation throughout this wetland is fairly dense. Drainage of these soils is very slow due to the high silt and clay content.

Wetland # 5

Wetland location Hartford boundary, Croydon Road

MDC # 55

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts housing developments

manmade structures/disturbances housing developments

Wetland # 6

Wetland location along Filey Brook, into Wash Brook

MDC # 87 129

The Filey Brook wetland soils are restricted to the area immediately surrounding the stream. This channel is lined with red maple, patches of dense alder shrubs, a few isolated willows, American elms, patches of multifloral rose, and Juncus. The northern section of the brook is more densely vegetated; much of the section just north of Cottage Grove Road has been used as farmland, and is therefore not as densely vegetated. This wetland has been impacted by housing developments, roads, and farming.

The area downstream of Filey Brook functions to slow and absorb flood waters. Wetland soils extend beyond the stream channel, providing a broad flat surface over which the flood waters can extend. The sinuous shape of the stream reduces the velocity of the water. This area also supports a large and diverse population of birds. The presence of running water as well as the kinds and arrangement of the vegetation are two important characteristics which make this area an important wildlife habitat. Wrens, jays, warblers, sparrows, chick-a-dees, and cardinals were some of the songbirds sited at the time of the field investigation. The dominant vegetation along this section of Wash Brook includes red maple, white oak, spice bush, sycamore, white ash, and American elm.

Wetland # 6

Wetland location along Filey Brook into Wash Brook

MDC # 87 129

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts housing developments, roads

manmade structures/disturbances roads

Wetland # 7

Wetland location east of CIGNA pond

MDC # 54,87

This tributary of Wash Brook includes a seasonally saturated pond surrounded by open emergent herbaceous swamp, forested swamp, and open meadows. In the dry seasons the pond area is covered with burreed, patches of cattail, Juncus, Carex, and other herbs that prosper from the decrease in groundwater. Sections of forested swamp and open lawn surround the stream flowing toward Bloomfield Avenue into Wash Brook. A high water table and slow internal drainage of the fine silts and clays in the soil are responsible for the wet conditions of this area. Lack of a harpan and low topographical position allow for exchange between the wetland and the groundwater. The underlying aquifer, however, will not yield large quantities of water since it is located in till and bedrock.

Wetland # 7

Wetland location east of CIGNA pond

MDC # 54,87

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping HIGH

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness one of the few wetlands to receive a high rating for sediment trapping

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts none

manmade structures/disturbances lawn

Wetland # 8

Wetland location CIGNA open space

MDC # 87

Part of this small section of wetland has been converted to back yard lawn. The remaining unimpacted area is a densely vegetated wooded swamp dominated by red maple and a dense understory of alder, spice bush, and arrowwood. The soils in this wetland are compacted just below the surface. This impedes vertical drainage and prolongs wet conditions. This compacted soil layer also restricts groundwater-wetland interaction. This wetland, and the surrounding forested area, provides open space in this otherwise highly urbanized section of town.

Wetland # 8

Wetland location CIGNA open space

MDC # 87

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts roads

manmade structures/disturbances lawns

Wetland # 9

Wetland location southwest corner of Bloomfield Ave/Cottage Grove Road

MDC # 87

The majority of this wetland has been converted to lawn either by CIGNA Corporation or by the houses along Bloomfield Avenue. The fine-grained silts and clays in the lower strata of the soil impede the internal drainage in this small section of wetland. Vestiges of the former larger wetland are the few red maples and willows scattered throughout the lawns, and the patch of red maple, alder, willow, and arrowwood along property lines.

Wetland # 9

Wetland location the southwest corner of Bloomfield Avenue/Cottage Grove Road

MDC # 87

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts roads

manmade structures/disturbances fill

Wetland # 10

Wetland location north of Cottage Grove Rd, near CIGNA Corp

MDC # 127 128

This wetland is underlain by a layer of moderately coarse textured soil over fine-grained silts and clays. The degree of saturation here is dependent on the height of the groundwater table during the different seasons. Much of this wetland has been cultivated. Some is planted in corn, some is part of an apple orchard, and the remainder is a patch of vegetation which includes red maple, white pine, ash, multifloral rose, and elm. The exact location of the wetland is not apparent by the topography. Soil tests should be taken to determine the area of the boundaries for this particular wetland.

Wetland # 10

Wetland location north of Cottage Grove Road, near CIGNA Corp

MDC # 127, 128

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts roads

manmade structures/disturbances cultivation

Wetland # 11

Wetland location north of Cottage Grove Road, east of CIGNA

MDC # 127

This patch of Swanton soil is closely associated with the adjacent wetland which surrounds the tributary to Tumbledown Brook. This shallow marsh is dominated by herbaceous vegetation including Panicum, sensitive fern, and sedge hummocks. The boundaries of this wetland are very indistinct; wetland vegetation extends diffusely beyond this area and the topography is not indicative of the wetland boundaries. The fine-textures glacial lake soils in this and surrounding areas are slow to drain, and are responsible, along with a high groundwater table, for the saturated conditions during the wet seasons.

Wetland # 11

Wetland location north of Cottage Grove Road, east of CIGNA Corp

MDC # 127

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 12

Wetland location east of Maple Road

MDC # 86, 127

This small section of fine-grained soils is presently tilled. The clays and silts predominant in this wetland are slow to drain in the spring, and cause prolonged saturation. The entire wetland is presently planted with corn.

Wetland # 12

Wetland location east of Maple Road

MDC # 86, 127

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts

manmade structures/disturbances farmland

Wetland # 13

Wetland location north of Still Hill Road

MDC # 52

This wetland is a tributary of the Tumbledown Brook, at the head of a large and very sinuous sub watershed. According to the Hartford County Soil Survey, the easterly section of this wetland is composed of soils developed on glacial till, with a fragipan at 24". This conflicts with Connecticut's surficial geology map, which indicates that this area is next to, but not in, glacial till. This eastern section of the wetland is a red maple wooded swamp which has been thinned considerably. The undergrowth is sparse; only a few scattered highbush blueberry and spice bush are present in the shrub understory. In the remaining sections of the wetland, which have not been thinned, the understory is thick and fairly continuous; highbush blueberry, winterberry, spice bush, and sensitive fern are abundant. American elm, white oak, and red maple dominate the upper tree canopy. In the wetter sections, moss covered tree stumps and roots are prevalent.

Wetland # 13

Wetland location north of Still Hill Road

MDC # 52

Hydrolgic Functions

groundwater exchange MEDIUM (assume fragipan absent)

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances thinning

Wetland # 14

Wetland location MDC Reservoir/Auer Farm

MDC # 51,52,84,85

This wetland is composed of Menlo and Wilbraham soils. These are soils that have developed on glacial till, and have a fragipan at 2 to 4 feet. Soil drainage is impeded by this compact layer of till, and a perched aquifer is formed. As a result, this wetland is well-saturated throughout most of the year; water stands in pools for long periods of time on the surface of the ground. The vegetation reflects this well-saturated condition. Foot-tall sedge tussocks are frequent, skunk cabbage, sphagnum moss, sensitive fern, dead standing trees, cattail, and Phragmites are found throughout the wetland. Red maple, white ash, red-oiser dogwood, hemlock, swamp azalea, spicebush, and winterberry are also common. Within the red maple/hemlock wooded swamp are isolated herbaceous sections dominated by burreed and sedge, or by sedge, cattail, and Phragmites. Some of this wetland extends into the fields along Auer Farm Road.

The wetland area south of Highwood Road has been impacted by the powerline. A swath of this wetland area has been cut over completely at this right-of-way. Since a fragipan impedes the vertical flow of water, impacts on this wetland (cutting, filling) will have the direct effect of increasing the volume of stream flow and flooding potential downstream.

Other sections of this wetland include areas of wooded swamp, open water, and meadow. There is a heavy sediment load in the stream south and downstream from a filled section of land on High Hill Road. Downy woodpeckers and raccoon tracks were sited.

peckers and raccoon tracks were sited.

Wetland # 14

Wetland location MDC Reservoir/Auer Farm

MDC # 51,52,84,85

Hydrolgic Functions

groundwater exchange LOW

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts fill

manmade structures/disturbances powerline, farmland

Wetland # 15

Wetland location MDC Reservoir #6

MDC # 51

This is a section of Wilbraham soil adjacent to the Hartford Reservoir 6. Its location, relative to the Reservoir is important, as it filters and stores the overland runoff from Talcott Mountain. The vertical drainage all throughout this area is impeded either by bedrock which is close to the ground surface, or by a compacted soil layer approximately 24 inches below the ground. This is a small section of wooded swamp, dominated by hemlock, red maple, and American elm.

Wetland # 15

Wetland location MDC Reservoir #6

MDC # 51

Hydrolgic Functions

groundwater exchange LOW

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 16

Wetland location Talcott Mountain hillside

MDC # 83

This wetland is a classic hillside wetland. It is a small, relatively flat, elongated wetland nestled in an otherwise steep hillside. This is an unusual wetland type for Bloomfield (most are bottomland wetlands) and offers a textbook example of this particular ecosystem.

Water moving off the mountainside in fairly well-defined stream channels, spreads out in and is slowed by this flat pocket of marshy vegetation. Given the location of this wetland in a basalt ridge, it is most likely that an imperveous layer of bedrock occurs just below the surface of the swamp, which prevents the downward movement of water. This fragipan places severe restrictions on the groundwater-surface water exchange.

Windthrows are numerous, indicating shallow-rooted tree conditions. The few tree species present in this wetland include, ash, white oak, and hemlock. A few typically upland species (such as shagbark hickory) have managed to become established in or around this wetland. Both trees and shrubs are sparse; herbaceous vegetation, such as burreed, sedge, Sphagnum, and Juncus dominate.

Although small, this wetland does affect levels of flood water, as it absorbs and slows water coming off the mountainside, and is located at the head of the watershed.

Wetland # 16

Wetland location Talcott Mountain hillside

MDC # 83

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness textbook hillside wetland

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 17

Wetland location north of MDC Reservoir #6

MDC # 84 125

This wetland is hydrologically connected to wetland no. 18. It is located in a flat section of Talcott Mountain. The bedrock here is, in many places, exposed or close to the surface. Vertical drainage is restricted because of these shallow-to-bedrock conditions. Water flowing from the surrounding basalt ridges is filtered and stored temporarily by this wetland before entering into the Reservoir. This wetland is entirely forested; red maple, American elm, and ash dominate the upper canopy. Spice bush and winterberry are abundant understory species. Heavily-used hiking trails traverse this wetland.

Wetland # 17

Wetland location MDC Reservoir #6

MDC # 84 125

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction LOW

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts none

manmade structures/disturbances trail

Wetland # 18

Wetland location north of MDC Reservoir #6

MDC # 125

This is one of a few sections of Wilbraham soil located in the valley between two ridges of basalt in Talcott Mountain. The bedrock in this wetland is very close to the ground surface, and vertical drainage is therefore restricted. Pieces of loose trap rock are scattered along the stream.

Red maple and elm dominate the upper canopy, under which spicebush, winterberry and highbush blueberry are abundant. The water flowing off the mountainside is temporarily stored and filtered in this wetland before it passes on into the Reservoir.

Wetland # 18

Wetland location north of MDC Reservoir #6

MDC # 125

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping LOW

pollution reduction LOW

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness The water flowing through this wetland enters directly into the Reservoir

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 19

Wetland location end of Grant Hill Road

MDC # 126

This red maple wooded swamp is a small section of outwash soil near but not contiguous to the Cold Spring Reservoir wetland. The vegetation in this wetland is dense, except where the powerline has cut across the land. Arrowwood dominates the thick understory beneath the ash and red maple canopy. This wetland, because of the somewhat coarse-grained nature of the soil, does not get particularly saturated even during the wet seasons. The degree of saturation depends on the level of the groundwater table in the immediate area.

Wetland # 19

Wetland location end of Grant Hill Road

MDC # 126

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts subdivision

manmade structures/disturbances power line

Wetland # 20

Wetland location between Cliffmont and Burnwood Roads

MDC # 126

This wetland is nestled in a subdivision and has been designated as open space. It provides visual diversity and contrast to this otherwise developed section of town. Since it is not a particularly well-saturated wetland (even during wet seasons the outwash wetland soils are not saturated at the surface), it is used extensively by local children throughout the year. This wooded swamp is not densely vegetated. The understory is fairly open; scattered clumps of spice bush, azalea, highbush blueberry, and catbriar occur under a sparse red maple tree canopy.

Wetland # 20

Wetland location Cliffmont subdivision

MDC # 126

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts subdivision

manmade structures/disturbances none

Wetland # 21

location Cold Spring Reservoir and contiguous wetlands

This large and irregularly shaped wetland ecosystem has been divided into four different sections: (A) the two northern lobes on either side of Duncaster Road; (B) south of the country club, across Mountain Road, east of the Duncaster condominiums, northwest of the intersection of Brown and Maple Roads; (C) the Cold Spring Resevoir and Tumbledown Brook golf course; and (D) the stream across Overbrook Drive, Tumbledown Brook golf course, Tumbledown Brook, and the tributary west of the CIGNA pond. These divisions were made on the basis of differences in soil type and surficial geology, and on the locations of major impacts (such as housing and industrial developments). All sections discribed are, however, hydrologically part of one wetland ecosystem.

SECTION A:

There are two distinct ribbon-shaped wetlands in this section, one on either side of Duncaster Road.

The section of wetland west of Duncaster is composed of a variety of classes including: red maple/ sedge wooded swamp, open shrub swamp, herbaceous shallow marsh, and open water. Most of the wooded section is dominated by red maple and black ash and, because it is so well-saturated throughout the year, has a continuous cover of sedge hummocks. Thick patches of alder fringe the stream. The continouous maple/ash canopy is broken in a number of places where patches of cattail or sedge surrounded by red-oisier dogwood and Juncus occur. This north-south oriented wetland is crossed in three places by roads. A small section of this wetland has been used as a dump for tires and other large trash.

The ribbon-shaped wetland east of Duncaster is confined to the stream and the soils surrounding it; it is flanked closely on either side by upland ridges. The area surrounding the stream varies from open wet herbaceous meadows, to shrub and sedge dominated areas, to red maple dominated forest, to open water. Part of this wetland area is grazed by cows from the abutting farm.

SECTION B:

The wetland soils directly south of the country club is restricted to the area immediately surrounding the stream. Thick strand of shrubs such as alder, border the waterway.

This wetland extends south, across Mountain Road. where it broadens into a fairly homogeneous red maple/white oak wooded swamp. Spicebush, highbush blueberry, and winterberry form a dense understory in this well-saturated swamp. Skunk cabbage, and sensitive fern are common ground cover species. There is a dense layer of duckweed in much of the ponded area, indicating eutrophic conditions, possibly caused by the nutrient overload from the surrounding upland runoff. These eutrophic conditions result in a depletion in the available oxygen in the water and an eventual decline in the faunal life. Care should be taken to insure that runoff from fertilized lawns or any other upland sources of nitrogen and phosphorus are kept from entering this section of wetland.

The adjoining strand of wetland to the north is a section of Menlo soils, confined for the most part to the stream edges. Where topography allows, the wetland soils extend outward fron the stream in broad flat areas. In some areas, steep slops flank the stream, and the wetland is confined to the stream edges. Alder Juncus, and spicebush are frequent understory species in this red maple-dominated wooded swamp.

The small wetland section northwest of the intersectin of Brown and Mountain Roads is fairly open; most of the area is open meadow, vegetated by a mix of upland and wetland species including Juncus, goldenrod, Phragmites, and purple loosestrife. Sections of this area are vegetated by a

dense shrub thickets. Open patches of cattail are interspersed along the stream within this shrub/open field wetland. Bird populations are numerous and diverse in this particular section of the wetland.

The contiguous wetland section south of Mountain Road has been disrupted in many areas by housing developments. Little of the former red maple wooded swamp remains. Most of this area is open lawn (golf course grass with a few scattered willows), and back yard lawn (some landscaped trees and grasses or small patches of cattail in wetter sections).

SECTION C:

The wetland section south of Mountain Road (crossing Loeffler and Burr/ Simsbury Road intersection), although hydrolgically connected to the wetland to the north and south, is described separately here because its soils and surficial geology are different from its contiguous wetland counterparts. This area is the largest section of deep peat and largest area of course-grained stratified drift in Bloomfield. This wetland section is an integral and significant part of the underlying aqufer which, in this region, is capable of yielding up to 700 gallons per minute in certain areas. This area of deep peat was most likely an open deep lake which has filled in over a very long time with sediment and plant and animal remains. Although some sections are dominated by dense thickets of red-oisier dogwood and alder, most areas are covered with a continuous canopy of red maple. Sedge hummocks and Sphagnum occur frequently throughout this well-saturated soft substrate. Much of the understory in the wooded swamp around the golf course is fairly open, except where dense patches of sweet pepperbush occur. Alder, red-oisier dogwood, and sensitive fern are also frequent understory species. The continuous forest canopy is open in a few areas by ponds and small patches of cattail.

SECTION D:

The southern section of Tumbledown Brook south of Cottage Grove Road is primarily a wet emergent marsh, dominated by a variety of grasses and other herbaceous vegetation. The stream in this section is lined with purple loosestrife, alder, and mutifloral rose. A few large willows and red maples are scattered in this otherwise open field. The Tumbledown Brook Country Club extends onto part of this wetland. There was a heavy sediment load in the southern section of this stream, near Simsbury Road.

The wetland north of Cottage Grove Road is confined, for the most part, to the floodplain Limerick silty soils bordering the brook. Where the topography is flat, these wetland soils extend beyond the immediate streambank border; these treeless flat areas are dominated by cattail, or sometimes by patches of shrub thickets. Some of this wetland area has been converted to lawn.

A number of ponds have been created along this brook. A variety of ducks, mostly mallards and black ducks, use these open bodies of water. Flocks of Canada geese (literally hundreds of birds) were sited on the open lawn near Tumbledown Brook on CIGNA Corporation's property.

The tributary to Tumbledown Brook east of Hall Boulevard has been impacted in many areas, and is now mostly lawn, except where some of the remaining red maple borders the small stream.

Wetland # 21A

Wetland location east and west of Duncaster Road

MDC # 175 232

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts roads

manmade structures/disturbances roads, large trash

Wetland # 21B

Wetland location south of country club to intersection of Maple and Brown

MDC # 175 176 232

Hydrolgic Functions

groundwater exchange LOW

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts

Wetland # 21C

Wetland location Cold Spring Reservoir, Tumbledown Brook Golf Course

MDC # 85 126 175

Hydrolgic Functions

groundwater exchange HIGH

flood control HIGH

sediment trapping MEDIUM

pollution reduction HIGH

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness largest area of peat in Bloomfield

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts

manmade structures/disturbances flood dam

Wetland # 21D

Wetland location Tumbledown Brook

MDC # 85 86 87 127 128

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts

manmade structures/disturbances roads, Country Club golf course

Wetland # 22

Wetland location east of Duncaster Rd., north of country club

MDC # 232,297

This section of wetland, although still hydrologically connected to the larger wetland to the north, is treated individually here because of the separation caused by the subdivision. Most of the wetland in the subdivision has been filled and built on, and the connection between the larger wetland to the north and this southern section is limited to a channelized stream.

This section of wetland is located in the valley swale between two drumlins. This thin stretch of land is well-saturated throughout most of the year both because of its topographical position, and the presence of a compact till layer at 2-4 feet. The majority of this wetland is dominated by red maple saplings and has a thick shrub growth of alder and winterberry. Sedge hummocks are located throughout this very wet shrub swamp. The northern tip of this area is slightly less saturated; here patches of more mature red maple occur. Also in the more northern section of this wetland is a small patch of open water. The thick shrub cover and presence of open water provide shelter and food for wildlife, especially birds. The location of this wetland between two drumlins also affords some added seclusion and therefore protection for wildlife. This wetland is one of the few shrub swamp (SS-1) wetlands in Bloomfield.

Wetland # 22

Wetland location east of Duncaster Rd., north of the country club

MDC # 232,297

Hydrolgic Functions

groundwater exchange LOW

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness one of the few shrub swamps in Bloomfield

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts subdivision

manmade structures/disturbances fill for the country club

Wetland # 23

Wetland location Sunset and Valley Roads

MDC # 176, 233

This wetland is hydrologically separated from contiguous wetland soils to the north and south by sub-watershed divides. The water flowing through this wetland eventually enters Wash Brook. This wetland encompases a variety of classes including shallow marsh, wooded swamp, shrub swamp, and open water. Much of this wetland is well-saturated throughout most of the year.

South of Sharon Street, is an open shallow marsh dominated by a thick cover of cattail, interspersed with Phragmites and patches of open water. To the north of Sharon Street, the wetland is dominated by a mix of red maple saplings, thick patches of cattail and alder, and some open water. This area opens out into a well-saturated meadow, vegetated by Juncus, small patches of cattail, some burreed, and Panicum grass. The forested wetland to the north of this meadow is a red maple- Carex swamp, with a winterberry, maleberry, and spicebush shrub layer. The water flow through this, as well as most other sections of the wetland, is diffuse. Although some upland species are interspersed in the forested wetland, the well-saturated soils and the extent of the Juncus and Carex indicate that this area is wet most of the year.

The sediment load in the forested section is heavy; this wetland is protecting the quality of the stream water by filtering the runoff from the upland construction. Sections of this forested wetland were previously considered as a dumping site; old car remains, shopping carts, and other gar-

bage is scattered throughout the area.

The northern most section of this wooded swamp is a lawn fringed with highbush blueberry and sensitive fern, and a grassy wet meadow across Terry Plains Road.

Wetland # 23

Wetland location Sunset and Valley Roads

MDC # 176,233

Hydrolgic Functions

groundwater exchange MEDIUM

flood control HIGH

sediment trapping HIGH

pollution reduction MEDIUM

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness this wetland has three high ratings, and is one of the few wetlands with a high sediment trapping value

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts housing construction

manmade structures/disturbances roads

Wetland # 24

Wetland location across Mills Lane

MDC # 234

This wetland has been isolated from the contiguous wetland soils by development and a sub watershed drainage divide. For a small section of wetland, this area is fairly diverse, and contains three wetland classes: open water, wooded swamp, and shallow marsh. Much of the wetland soils around the pond have been disturbed; despite the numerous hay bales at the outlet, the sediment load in the wetland is heavy.

Just south of the pond is an open shallow marsh dominated by Panicum and Juncus. This marsh is in turn surrounded by a red maple wooded swamp. Red-oisier dogwood and alder are frequent understory species and buttonbush is present in small amounts. The railroad impoundment has created some ponding and stagnant conditions. .pp A common snipe was seen in this wetland.

Wetland # 24

Wetland location across Mills Road

MDC # 234

Hydrolgic Functions

groundwater exchange LOW

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts

manmade structures/disturbances soil disturbance, road, railroad

Wetland # 25

Wetland location behind Laurel School

MDC # 234

Most of this wetland has been converted to school lawn and playing fields. One small lobe of the wetland extends beyond the school and into the adjacent corn field. This relatively undisturbed section is vegetated with Panicum grass, purple loosestrife, goldenrod, Queen Anne's lace, and Juncus. A few pussy willows and alders also occur here. The proximity of this wetland to the school affords a good opportunity to study these ecosystems.

Wetland # 25

Wetland location behind Laurel School

MDC # 234

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts

manmade structures/disturbances impoundment, and fill

Wetland # 26

Wetland location Bloomfield Middle School

MDC # 129 178

This section of wetland ic composed of Beaman Brook floodplain soils and nearby Swanton and Scantic silts and clays. A variety of wetland classes (shallow marsh, wooded swamp, and shrub swamp) are included in this area. The Limerick soils surrounding Beaman Brook are vegetated by a red maple wooded swamp at the northern end, and in the middle section, by a dense alder-dominated shrub thicket. The remaining eastern section of the wetland is open. It has been mowed and kept clear for use by the school, or is open farmland. In the wetter patches, Typha and Juncus stand out among the surrounding grasses.

This wetland is just downstream from two large sub-watersheds (Blue Hills and Wintonbury Reservoirs) and so acts to funnel large amounts of water from these northern sections of town to the North Branch of the Park River.

Wetland # 26

Wetland location Bloomfiield Middle School

MDC # 129 178

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping LOW

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts housing developments

manmade structures/disturbances mowing

Wetland # 27 LOCATED ON CKNA NORTH

Wetland location ~~Farmington River Floodplain~~

MDC # ~~638 639~~ 86 & 127

This section of Walpole soils is located near the Farmington River floodplain. Although composed of moderately coarse to medium textured outwash soils, this wetland is poorly drained due to a seasonally high water table. This land is forested with a mixture of species such as red maple, ash, black birch, and a stand of white pines. The understory is dominated by spicebush and is consistently thick throughout.

DESCRIPTION SHOULD BE SIMILAR TO WETLAND NUMBER 11 IN THIS REPORT.

Wetland # 27 ? SAME AS 54

Wetland location Farmington River Floodplain

MDC # 638 639

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping LOW

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances dirt road

Wetland # 28

Wetland location behind Wintonbury School

MDC # 179,130

This section of wetland is isolated from the contiguous wetland areas by a subdrainage divide to the north and development (Norman Road) to the south. The majority of this wetland is an open field composed of a variety of grasses (most of it is mowed), milkweed, and goldenrod. Except for rows of red maple and pin oak along property borders and a section of open water, the wetland is a fairly homogeneous open field. The internal drainage in this area is slowed by the fine-grained nature of the subsoil.

Wetland # 28

Wetland location behind Wintonbury School

MDC # 179,130

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts none

manmade structures/disturbances mowing

Wetland # 29

Wetland location south of Wintonbury Rd., between Walker Lane and Blue Hills Ave

MDC # 179

Much of this wetland has been impacted by housing developments. The remaining unaffected wetland area is a wooded swamp, vegetated by red maple, white ash, and and white oak, with a thick arrowwood shrub understory. The saturation of this area during the wet seasons is due to the slow internal drainage of the underlying glacial lake silts and clays. Lack of a hardpan and a seasonally high water table allow for interaction and exchange between this wetland and the local groundwater. This area affords open space and diversity in this highly developed and otherwise homogeneous section of town.

Wetland # 29

Wetland location south of Wintonbury Rd., between Walker Lane and Blue Hills Ave $

MDC # 179

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts roads

manmade structures/disturbances housing developments

Wetland # 30

Wetland location School Street

MDC # 179

This wetland is a small section of poorly drained soil along School Street. The majority of this wetland is meadow, dominated by tufts of Juncus. The slow internal drainage of the silty soils is responsible for the saturated conditions which occur seasonally in this area.

Accurate boundary delineations of this wetland should be field checked by a soil scientist. According to the town's official wetlands map, this wetland is bisected by School Street. Field observations, however, concur with the original areal photographs in the Hartford County Soil Survey; the wetland in the Survey occurs to the west of, rather than across School Street. Dryland tree species such as black oak and cherry, and goldenrod species are found among the red maple east of School Street, while the more typical wetland species such as Juncus dominate the land to the west.

Wetland # 30

Wetland location School Street

MDC # 179

Hydrolgic Functions

groundwater exchange HIGH

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness one of the few wetlands rated high for groundwater exchange

Cultural Function

recreation/education LOW

Disturbances

upstream impacts agricultural practices

manmade structures/disturbances grazing

Wetland # 31

Wetland location Privilege Lane

MDC # 236,237

This wetland is located in the Mill River watershed and is part of a larger wetland ecosystem which extends into Windsor (no. 24B in Windsors evaluation). The saturation of this wetland is due to the slow internal drainage of the former glacial-lake silts and clays. This wetland is a red maple-dominated wooded swamp; white oak shares the upper canopy, and arrow-wood, highbush blueberry, sedge tussocks, sphagnum, and skunk cabbage form the somewhat open understory. Tufts of sedge and sphagnum form a thick cover in the well-saturated areas. Patches of cattail occur at the impound-ment near the Windsor town line, where the flow of water is restricted to a 24" culvert. A seasonally high water table and lack of a hardpan allow for some exchange between this wetland and the underlying aquifer.

Wetland # 31

Wetland location Privilege Lane

MDC # 236,237

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances impoundment at the Windsor town line

The following are four sections of a large wetland ecosystem. Although still hydrologically connected, they are discribed and evaluated separately here because the intervening development keeps them somewhat isolated from each other. All four wetland sections are part of the Mill Brook ecosystem which extends into Windsor. This wetland has been singled out as one of the top ten wetlands in that town. Impacts on any of the four wetland sections in Bloomfield can affect this large and ecologically significant wetland in Windsor.

Wetland # 32A

Wetland location Barbers Pond Recreational Area

MDC # 373,374,375

This wetland is composed of Mill Brook, Barbers Pond, and the various small tributaries of Mill Brook. The floodplain soils surrounding Mill Brook are narrow or non-existent in the areas where the adjacent slopes are at the river's edge. This clearly defined stream channel becomes more diffuse where the slopes are further back from the water, and the land immediately surrounding the stream flattens out. These broad floodplain areas are vegetated with cattail and sedge tussocks, alder, sweet pepperbush, highbush blueberry, and arrowwood. The sinuous stream shape, and the vegetation within and along the stream acts to filter and slow the flood waters passing through the wetland.

The northern section of the pond is surrounded by a cattail-dominated shallow marsh. The variety in wetland classes and vegetation, and presence of open and running water enhance this area as a wildlife habitat. The birds sited at Barbers Pond include a great blue heron, a pair of kingfishers, black ducks, and mallards. Trails along the western edge of the pond make this area accessible to bird watchers and hikers. This is one of the largest, accessible bodies of water in Bloomfield.

Wetland # 32A

Wetland location Barbers Pond Recreational Area

MDC # 373,374,375

Hydrolgic Functions

groundwater exchange MEDIUM

flood control HIGH

sediment trapping MEDIUM

pollution reduction LOW

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness large and accessible open bodies of water

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts none

manmade structures/disturbances roads, lawn

Wetland # 32B

Wetland location north of East Dudley Town Rd east of Iron Ore

MDC # 301 302

Parts of the southern edge of this wetland have been filled or otherwise impacted, and the vegetation here reflects the change in hydrology caused by the fill. Except for these small areas, this wetland is intact and buffered along its untouched borders by forestland. This is a typical wooded swamp red maple - sedge wetland, which is well-saturated throughout most of the year. The topography is very irregular, due to the small hills and numerous sedge hummocks within the wetland. The shrub strata is dense and fairly continuous throughout. Winterberry, highbush blueberry, alder, and spicebush, are frequent. Red maple and white oak dominate the upper canopy. Dead standing trees (important to wildlife) are also found within this wetland. Two water snakes were observed during field inspection.

The water flowing through this wetland was clean, clear, and free of sedimentation. This wetland is functioning to affect the quality of water passing through it. The presence of organic soil and a diffuse flow of water are two physical properties of this wetland which enhance its ability to improve water quality. Discharge from the upstream industry empties directly into this wetland. It is important to note that there is significant interchange between the wetland and local groundwater. This wetland is serving an important function of filtering the surface waters and protecting the quality of the underlying aquifer.

Wetland # 32B

Wetland location north of East Dudley Town Rd, east of Old Iron Ore

MDC # 301, 302

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction HIGH

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts industrial runoff and discharge

manmade structures/disturbances fill

Wetland # 32C

Wetland location north of East Dudley Town Rd, west of #64

MDC # 301 302

This wetland, although small and broken up by fill and the road, is unusually diverse for its size. Within it, there are patches of various vegetative forms, such as: a section of dense red-osier dogwood shrub cover, open patches of cattail and Phragmites, or cattail and burreed, wooded areas dominated by red maple saplings, or by a mix of mature upland/wetland forest species including: red maple, white oak, white pine, white birch, some dead standing trees, with a highush blueberry, sheep and mountain laurel, and princess pine understory. This diversity in kind as well as growth form of vegetation allows this wetland to support diverse wildlife populations.

The surficial geology of this wetland is composed of fine-grained stratified drift. This, along with the absence of a fragipan in the soil, allows for significant interaction between the underlying aquifer and surface waters. This wetland, due to its topographically low position and the composition of soil and vegetation, is acting as a filter for the surrounding runoff, and protecting the local groundwater.

Wetland # 32C

Wetland location north of East Dudley Town Rd., west of #64

MDC # 301 302

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping HIGH

pollution reduction MEDIUM ~~HIGH~~

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness one of the few wetlands which rates high for sediment trapping

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts _____

manmade structures/disturbances fill and road

Wetland # 32D

Wetland location south of East Dudley, east of Blue Hills

MDC # 301 & 236

This wetland is composed mostly of moderately-coarse to medium-textured soils, underlain by glacial lake silts and clays. A fragipan is absent, and there is the possibility for interaction and exchange between the ground and surface waters. Sections of this wetland are much wetter than others, and have water on the surface of the ground for most of the year. These are the typical red maple-sedge wooded swamp areas, dominated primarily by sensitive fern and white oak in addition to the red maple and sedge. The remaining wetland is forested (red maple is dominant throughout), except in small localized areas, opened by windthrows or other disturbances. These open areas are vegetated with sedge, burreed, and other herbs, or by thickets of alder, highbush blueberry, and dogwood. Signs of deer were present throughout this area. Grouse and downy woodpeckers were sited.

Wetland # 32D

Wetland location south of East Dudley Road, east of Blue Hills Ave

MDC # 301 & 236

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction ~~MEDIUM~~ HIGH

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness one of the few wetlands rated high for pollution reduction

Cultural Function

recreation/education LOW

Disturbances

upstream impacts

manmade structures/disturbances road

Wetland # 33

Wetland location south of 99 Old Windsor Road

MDC # 374

This small area is composed of fine-sandy loam over former lake-bottom silts and clays. It becomes seasonally wet due to both a high water table and slow internal drainage of the fine-grained underlying soils. This forested wetland is abutted by a small intermittent stream. Both upland (black oaks) and wetland (alder, red maple) dominate the wetland. The condition of the water in the stream at the time of the field investigation was poor. There were no visible signs of floral or faunal stream life. The bottom of the stream bed was covered with a fuzzy thick soft orange growth.

The lack of a fragipan and occurrance of a seasonally high water table allow for significant interchange between the wetland and the local groundwater. It is most likely that, depending on the season, this wetland acts as both a discharge and recharge area.

Wetland # 33

Wetland location south of 99 Old Windsor Road

MDC # 374

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness poor water quality

Cultural Function

recreation/education LOW

Disturbances

upstream impacts poor water quality in the stream indicates a strong possibility of upstream discharge

manmade structures/disturbances none

Wetland # 34

Wetland location Blue Hills Reservoir

MDC # 178,179,235,236,300,301,373,374

This wetland encompasses a variety of wetland classes and extends over a large area. For purposes of description, this large wetland is broken down into three main sections: the areas to the north and south of the Reservoir, and the Reservoir itself.

The northern wetland sections consist of narrow strands of floodplain soil flanking the tributaries entering the Reservoir. These northern wetland sections include open grassy sedge tufts in standing water, open Juncus meadows with small patches of cattail and Phragmites, and a thickly-wooded streambelt wetland. The tip of one of these northern streambelt wetlands is composed of deep peat, and is dominated by cattail and tufts of Juncus. This patch of deep peat, although very small, is ecologically important; these organic soils are able to absorb and later slowly release many times its weight in water, as well as bind and immobilize pollutants. Sections of these streambelt wetlands show signs of heavy streambank erosion, indicating that large volumes of water pass through these sinuous, deep stream channels during times of floods. Spicebush, arrowwood, and tufts of sedge and sensitive fern are frequent under the taller canopy of red maple, yellow birch, and american elm. Phragmites accentuate the fringe of encroachment (along Southwood and Northwood Drive), where fill has altered the local ecology of the wetland. Raccoon tracks are frequent in the streambed and along the stream banks.

The area of wetland within the Blue Hills Reservoir is diverse; wooded swamp, shallow marsh, open water, as well as sections of upland all occur within this large area. These sections of upland are reflected by patches of dryland vegetation such as white pine, white birch, and ironwood. The open herbaceous areas are well-saturated throughout the year, and are dominated by thick stands of purple loosestrife, cattail, and sedge and Juncus hummocks. Buttonbush, winterberry, highbush blueberry, and Phragmites occur in clumps in the wetter sections of the wetland. The wooded, less wet, areas are dominated by red maple and white oak and have a highbush blueberry, spicebush, sensitive fern understory. This area houses a diversity of wildlife; a number of small birds were sited during the field study including thrushes, yellow-throated warbler, wrens, jays, brown creeper, and a variety of sparrows. Pileated woodpecker holes were evident in the forested section of the wetland. Deer browse was also present.

The southern sections of this wetland are composed of the somewhat poorly drained Scantic soils, which include the open fields behind the Wintonbury School, and the farmland across Wintonbury Avenue. Where this road transects the wetland, a small shallow marsh has formed as a result of the impounded water. Purple loosestrife, cattail, and Scirpus are abundant in this small patch of shallow marsh.

The area north of Wedgewood Avenue is a post-agricultural field, dominated by young red maples. This section has a variety of specied interspersed among the maples such as arrowwood, Americam elm, dogwood, Phragmites, and purple loosestrife.

A few errors occur in the town's official wetlands 1983 map. Patches of Elmwood (EnA) Agawam (AbA) and Ninigret (NnA) soils (not marked on the town

map) are scattered in the Reservoir. These three soil types are classified as upland, not wetland, soils.

Wetland # 34

Wetland location Blue Hills Reservoir

MDC # 178,179,235,236,300,301,373,374

Hydrolgic Functions

groundwater exchange MEDIUM

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness this is an excellent birding area, as well as a large and diverse wetland ecosystem

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts roads

manmade structures/disturbances flood impoundments

Wetland # 35

Wetland location Wintonbury Reservoir and wetland north of Reservoir

MDC # 300 373

This is a large sinuous wetland system which includes the Wintonbury Reservoir and its continuation to the north. It is composed of a variety of soil types (including the poorly drained Wallington, Swanton, and Walpole series, organic deep peat and muck, the very poorly drained Scarboro series, and the floodplain Saco and Limerick soils), as well as a variety of distinct wetland classes. This area is wet due to its topographically low position, slow internal drainage of the soils, and the occurence of former and present streams and ponds. (Old deep lakes are now areas of organic peats and muck; former oxbows and rivers are now floodplain soils). The surficial geology in this area is composed of fine-grained stratified drift. This, and a lack of a fragipan, allow for significant exchange between the underlying aqufier and the wetland.

The section of wetland to the north of the Reservoir includes a pond and wooded swamp. The wooded area is fairly continuous throughout; black gum, American elm, and red maple dominate the upper canopy. The floodplain soil immediately surrounding the stream south of the pond is extremly soft and remains well-saturated for long periods of time. A contiguous area of deep peat is also soft and very well saturated throughout the year. The understory in this peaty section of wetland is sparse. Exposed roots and a moss groundcover dominate the lower strata.

The stream flowing through this section of wetland is well-defined and very sinuous. Despite an oily seepage near the beginning of the stream at the impoundment, the water flowing through the wetland was clean and clear.

The north end of the pond is a flat herbaceous marsh. Fringing the remaining steep edges of the pond are alder, cattail, swamp azalea, Juncus, and water willow. Mallards, deer, and racoons frequent the pond and surrounding wetland. An osprey was sighted overhead as well. The pond itself is receiving overland seepage directly from the surrounding upland.

The Wintonbury Reservoir area is composed of a number of different and fairly distinct wetland classes. Part of this area is currently farmed, and can be classified as wet meadow. Much of this area is planted with corn, and has purple loosestrife, goldenrod, cattail, other grasses, and alder and willow along the uncultivated wetter periphery. Other wetland classes in this area include: wooded swamp (dominated by red maple and a fairly thick and continuous understory), shallow marsh (open flat herbaceous areas dominated by cattail and Juncus, where the water flow is diffuse, undefined, and the ground is well-saturated throughout most of the year), open agricultural fields, very wet areas of ponded water inhabited by sedge hummocks, and well-saturated shrub swamps dominated by alder and red maple saplings.

The designated recreational area south of the proposed Colonial Lane is composed of moderately coarse to medium textures soil underlain by silts and clays at 2 to 4 feet. The internal drainage here is very slow, and the area is covered with standing water throughout most of the year. Phragmites occurs where a road has been built, indicating the change in hydrology caused by the road fill. Equisetum, pussy willow, and cattail occur

throughout this small section of red-maple dominated wooded swamp.

This wetland, because its size, location, soil types, and the constructed berm, is an important flood retention area. The nature of the soil and lack of fragipan allows for significant groundwater/surface water interchange; whatever enters the wetland through its surface waters has the potential to be exchanged with the local aquifer, after passing through the natural filtering system of the wetland. The diversity of this area in terms of wetland species as well as wetland classes enhance its ability to serve as an important wildlife habitat. A number of birds were seen in this wetland, including a large population of sparrows, goldfinch, mockingbirds, and a broad-winged hawk.

Wetland # 35

Wetland location Wintonbury Reservoir and wetland north of Reservoir

MDC # 300 373

Hydrolgic Functions

groundwater exchange MEDIUM

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts direct runoff from surrounding industries into pond

manmade structures/disturbances flood control dam

Wetland # 36

Wetland location Windsor town line south across West Newberry Rd. to Tunxis and Mills Rd. intersection

MDC # 233 298 299 372 ~~473~~ & 453

This section of wetland is hydrologically connected to many of the inland wetlands which occupy the north-central section of Bloomfield. Unlike the broad, flat valley wooded swamps, this section of wetland is typical of the many ribbons of floodplain soil which border the streams and brooks in town. Except for a few areas of contiguous Swanton soils, this wetland is confined to the frequently flooded Saco floodpalin soils which border the brook. These floodplain soils represent the outer boundaries of the brook, whose size shrinks and swells with the seasonal fluxes in water flow.

This stream travels through forested land, periodically opening out into herbaceous flats dominated by sedge, with some Juncus, Typha, and a few isolated patches of Phragmites. Here the water flow is slow, as this herbaceous vegetation tends to impede and filter the water. The majority of this wetland is wooded; red maple is the dominant tree, forming a dense canopy under which highbush blueberry, winterberry, and spice bush contribute to the thick shrub layer. A few isolated sections of the wooded swamp are well-saturated; sedge hummocks surrounded by water are frequent in these wetter sections.

The thick shrub underbrush harbors many birds: juncos, titmice, chick-a-dees, and cardinals were seen at the time of the study. Numerous raccoon tracks were found in the mud flats along the railroad. Deer browse as well as tracks were also common in this section of wetland.

tracks were found in the mud flats along the railroad. Deer browse as well as tracks were also common in this section of wetland.

Wetland # 36

Wetland location Windsor town line south across West Newberry Rd. to Tunxis and Mills Rd. intersection.

MDC # 233 298 299 372 ~~473~~ & 453

Hydrolgic Functions

groundwater exchange LOW

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts houses lawns roads

manmade structures/disturbances railroad, impoundment south of West Newberry Road

Wetland # 37

Wetland location immediately south of Capewell Dr., along Tunxis Ave.

MDC # 452

This is a very small round wetland composed entirely of shallow organic soil. It is a thickly-vegetated shrub swamp dominated by button bush (Cephlanthus occidentalis) with a small scattering of red-osier dogwood sprinkled in between the dense buttonbush growth. Buttonbush is one of the few plant species able to tolerate and thrive in this extremely wet and peaty substrate. Although not large or vegetatively diverse, this wetland, because of its organic composition and diffuse water flow, is able to effectively adsorb pollutants and improve the quality of the water passing through it. This is an important attribute in an area such as this, where the water table is at the surface most of the year, and the underlying aquifer is directly connected to, and exchanges with the surface waters. Also, although small, this area (again because of its organic substrate) acts as a sponge for the surrounding runoff. Peats and mucks are able to absorb up to ten times its volume in water.

This wetland was most likely a kettlehole pond, created when a block of ice lodged in the landscape, and, after it melted, formed a depression filled with meltwater. Organic plant and animal remains, as well as sediments from the surrounding uplands continued to fill the pond, changing the area from an open body of water to a wetland.

Wetland # 37

Wetland location immediately south of Capewell Dr., along Tunxis Ave.

MDC # 452

Hydrolgic Functions

groundwater exchange HIGH

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness this is one of the few kelltehole wetlands in Bloomfield, and one of the few areas which rates high for groundwater exchange

Cultural Function

recreation/education LOW

Disturbances

upstream impacts

manmade structures/disturbances Tunxis Ave. abuts this wetland

Wetland # 38

Wetland location roughly, within Duncaster, Tunxis, Wadhams, and Scotland Roads

MDC # 298 370 371 452 541

This section of wetland is part of a larger ecosystem running the north-south length of Bloomfield, and lies within the Wash Brook watershed. This is a rather large, diverse section of wetland, containing a variety of micro ecosystems and soil types. Generally coarse-grained stratified drift overlies fine-grained stratified drift in the north section; the southern part od composed of fine-grained stratified drift. A combination of topography and surficial geology create this wet environment. Wet conditions in the spring result from the intersection of this topographically low land with a seasonally high water table. These wet conditions are then prolonged, in some sections, where drainage is impeded by a compacted till layer at about 24 inches. These prolonged wet conditions are reflected in the irregular micro topography (surface tree and shrub roots, Sphagnum moss mounds, and sedge hummocks) and by the vegetation: highbush blueberry, Sphagnum, red maple, and a variety of other plants able to tolerate prolonged wet conditions. Even as late as November, the surface of the ground was saturated over much of the area.

The water flow in this area is somewhat unique. Located in the middle of this wetland is a drumlin composed predominantly of Wethersfield soils. In order to drain southerly (eventually into Wash Brook), the water on the west side of this drumlin must first flow northerly, around the drumlin,

before it joins with two other streams which all then flow into the reservoir.

This wetland is ecologically diverse -- it contains a variety of wetland classes including wooded swamp, shallow marsh, and open water. These various ecosystems are irreegularly shaped, such that a large 'edge' area (interface of different wetland classes) is created. These diverse and irregularly-shaped ecosystems, coupled with the presence of open and running water, create a habitat which can support large and diverse wildlife populations. Deer and raccoon tracks were found in the wetter sections of the swamp. The combination of dead standing trees and open water is a favored habitat for wood ducks. Much of the wetland lies in a well-buffered valley between two ridges, which afford protection and some seclusion for animals.

The water flowing through this wetland was clean and clear, and free of any noticable sediment load. This area is one of the most diverse and relatively undisturbed areas in Bloomfield.

Wetland # 38

Wetland location roughly within Duncaster, Tunxis, Wadhams, and Scotland Rds.

MDC # 298 370 371 452 541

Hydrolgic Functions

groundwater exchange LOW

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness relatively unimpacted, diverse

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts roads

manmade structures/disturbances Walt's Hill construction, reservoir

Wetland # 39

Wetland location Wadhams/Terry Plains Road intersection

MDC # 298

This small wetland section is separated from the nearby larger wetland ecosystem by only a thin strip of Merimac soil. Because of the somewhat finer texture of the Walpole soils, this area tends to dry out more slowly in the spring. Presently this wetland is cultivated, and is part of a larger corn field.

Wetland # 39

Wetland location southwest of Wadhams/Terry Plains Rd. intersection

MDC # 298

Hydrolgic Functions

groundwater exchange MEDIUM

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts agricultural practices

manmade structures/disturbances this land is presently farmed

Wetland # 40

Wetland location Griffin Brook

MDC # 297,370,451,540,637

The majority of this area is covered by the Whately soil series, which consists of fine-grain silts and clays under water-lain and wind-blown deposits. Most of this area is well-saturated during most of the year. This is due to both the fine textured soils and to fragipans in some sections of the wetland.

Sedge hummocks surrounded by water are numerous. Red maple, ash, and American elm aer the dominant tree species. Clumps of highbush blueberry, and alder, are scattered throughout the understory. Winterberry and dogwood are also present in large numbers. The tree canopy is fairly continuous throughout this wetland, except except where patches of open water and herbaceous vegetation occur.

Except where paved and dirt roads interrupt this area, it is mostly undisturbed and fairly well protected by upland basalt ridges to the east and west. This buffer contributes to the value of this area as a wildlife habitat. Deer frequent this area, as do a number of other animals such as downy and pileated woodpeckers and small mammals such as mice and voles.

Many tributaries drain off Talcott Mountain into the Griffin Brook, which flows northward and eventually empties into the Farmington River. The waterflow off this ridge is heavy at times as is evidenced by the deeply cut stream channelsin the mountainside. Griffin Brook wetland is the 'sink' which detains, slows and filters this water.

'sink' which detains, slows and filters this water.

Wetland # 40

Wetland location Griffin Brook

MDC # 297,370,451,540,637

Hydrolgic Functions

groundwater exchange LOW

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat HIGH

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts

manmade structures/disturbances roads

Wetland # 41

Wetland location Penwood Park (north of parking lot)

MDC # 296, 369

This wetland is typical of the few hillside wetlands scattered in Tallcott Mountain. It is composed of Walpole soils which have a hardpan at 24", and occurs in a relatively flat area in this otherwise steep hillside. Due to the steep slopes and shallow soils (rock outcrops are frequent) of the surrounding hill, infiltration is minimal and runoff is heavy. This wetland, although relatively small, holds and filters some of this runoff, and temporarily detains what would otherwise be heavier runoff from the upland ridges.

This wetland includes both open water and wooded swamp dominated by red maple, willow, and hemlock. The understory in the wooded section is fairly open; in many places herbaceous vegetation dominates. Turtlehead, jewelweed, burreed, ragweed, nettle, and Juncus are some of the herbs found in this wetland. Duckweed and lily pads fringe the pond.

Wetland # 41

Wetland location Penwood Park (north of parking lot)

MDC # 296, 369

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping LOW

pollution reduction LOW

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 42

Wetland location Penwood Park (Lake Louise)

MDC # 369

This wetland is the only classic "textbook" bog in Bloomfield. The vegetation reflects the stagnant, acidic conditions typical of bog environments. This wetland is a depression of deep peat within the steep Holyoke soil and rocky basalt ridges which form the crest of Talcott Mountain. Runoff from the surrounding steep ridges is stored in this wetland and released slowly across the town line into Simsbury via Lucy Brook.

Some of the plants occurring here are infrequent or absent in any of the other wetlands in Bloomfield. This is especially true for the ericaceous plants such as leatherleaf, and cranberry. Alder, highbush blueberry, red maple, hemlock, water willow, male berry, swamp azalea, and sphagnum are also found in this wetland.

The organic soils in this bog enable it to absorb (and later slowly release) large quantities of runoff from the two surrounding peaks of Talcott Mountain. This area provides excellent educational opportunities because of its classic bog formation, and presence (and accessibility) of unique (to Bloomfield) plants.

This area was most likely a larger lake which once occupied the depression that has since filled in with plant and animal material. Constricted drainage contributes to the stagnant and anaerobic water conditions, preserving, rather than decomposing this organic material. The classic 'quak-

ing mats' characteristic of bogs are present here. These mats are formed as the vegetation creeps along the top of the water toward the center of the pond, contributing to the eventual filling in of the open water.

Wetland # 42

Wetland location Penwood Park (Lake Louise)

MDC # 369

Hydrolgic Functions

groundwater exchange MEDIUM

flood control HIGH

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness classic bog wetland, plants not found in other wetlands

Cultural Function

recreation/education HIGH

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 43

Wetland location Penwood Park (northeast of Lake Louise)

MDC # 451

This wetland is composed of a small section of Wilbraham soil nestled in the side of Talcott Mountain. It occurs in a relatively flat, small section of an otherwise steep slope. The Holyoke soils surrounding this wetland are extremely shallow and rocky. Basalt outcrops and loose pieces of trap rock are frequent; the bedrock in this hillside is generally no deeper than 14". These conditions result in fast and furious runoff after heavy rains. Hillside wetlands such as these (although relatively small) store and filter some of this runoff. The wetland vegetation reflects the somewhat stagnant conditions: 8-12" tall hummocks of Carex and Sphagnum and clumps of highbush blueberry are frequent. This wooded wetland is dominated by red maple, hemlock, and American elm. The common understory species include: spicebush, winterberry, alder, skunk cabbage, sensitive fern, burreed, Polygonum spp. and catbriar.

Wetland # 43

Wetland location Penwood Park (northeast of Lake Louise)

MDC # 451

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction LOW

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 44

Wetland location Marion Wilcox Park

MDC # 540

This is a hillside till wetland located in a swale on Talcott Mountain. An impervious soil layer at 24 inches and the flat topography are responsible for the wet conditions here. This area is hydrologically connected to the Griffin Brook wetland ecosystem. This wetland is a wooded swamp; red maple, American elm, hemlock, and yellow birch are dominant tree species. Alder, spicebush, highbush blueberry and a host of herbaceous vegetation such as sensitive fern, jack-in-the-pulpit, trillium, and sedge hummocks compose the understory. Water running off the mountain collects and is temporarily stored in this relatively flat area. This wetland is very well-saturated in the spring season. Its location in the park and its proximity to the park road enhance the recreational and educational qualities of this wetland.

Wetland # 44

Wetland location Marion Wilcox Park

MDC # 540

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 45

Wetland location south of Tariffville Road

MDC # 541,638

This wetland is located in the valley between two steep bedrock outcrops of shale. This flat valley wooded swamp is composed of Walpole soils which, because of the fine-grain textures, are slow to drain in wet seasons. Red maple and American elm are abundant tree species; windthrows and dead standing trees are also present. A few shrubs are scattered throughout the open understory, such as highbush blueberry and alder. Skunk cabbage, sedge and Sphagnum moss cover the ground.

This wetland collects and stores runoff from the bordering upland outcrops. These ridges provide a sunstantial buffer for wildlife. A pileated woodpecker was observed in this wetland during the field investigation.

Wetland # 45

Wetland location south of Tariffville Road

MDC # 541, 638

Hydrolgic Functions

groundwater exchange LOW

flood control MEDIUM

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances NONE

Wetland # 46&47

Wetland location east of Hoskins Road

MDC # 540

These are two small sections of dense till soils, kept wet by a fragipan at 24 inches. These two areas are very similar. They occur as patches in abandoned farmland, and are now vegetated solely by young ash trees. The lack of other species in this area might be the result of controlled burning. Fire scars on trees and burned grassland occurs in the surrounding area.

Wetland # 46&47

Wetland location east of Hoskins Road

MDC # 540

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts roads

manmade structures/disturbances possible controlled burning

Wetland # 48

Wetland location northern section of Talcott Mountain

MDC # 742

This wooded swamp is located in the northern section of Talcott Mountain State Park, in a relatively flat section of the steep hillside. Dead and fallen trees throughout this wetland are indicative of the shallow and well-saturated soil conditions. Water draining off the surrounding ridges sits in this swale for long periods of time. The ground is soft and covered with sedge hummocks. Moss, skunk cabbage, and exposed tree and shrub roots occur throughout the area. Red maple, American elm and hemlock dominate the tree canopy. The shrub understory is scattered; spice bush, winterberry and highbush blueberry are common.

Wetland # 48

Wetland location northern section of Talcott Mountain

MDC # 742

Hydrolgic Functions

groundwater exchange LOW

flood control LOW

sediment trapping MEDIUM

pollution reduction MEDIUM

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 49

Wetland location north of Tariffville and Hoskins Road

MDC # 638,743

This land is owned by H.E.L. Co. and except for a few small areas, has been cleared and is now mostly lawn. This section of coarse-textured outwash is fairly easily drained, but becomes saturated during the wet seasons by a high groundwater table. The stream has been ditched, and only a few patches of woody vegetation are present.

Wetland # 49

Wetland location north of Tariffville and Hoskins Road

MDC # 638,743

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping MEDIUM

pollution reduction LOW

Biologic Functions

wildlife habitat LOW

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts road

manmade structures/disturbances ditching, clearing, and road impoundments

Wetland # 50 and 51

Wetland location Farmington River floodplain

MDC # 743

These are two small areas of outwash soil which were previously connected to the wetland soils to the south (wetland # 34). These soils have been isolated by the highway. They are part of the Farmington river floodplain, and act as drainageways from the upland to the river. The ephemeral streams in these sections of wetland are heavily ladden with upland sediments and road sand. Typical floodplain trees such as silver maple, sycamore and poplar inhabit these areas. Sumac and alder are also frequent.

Wetland # 50 and 51

Wetland location Farmington River floodplain

MDC # 743

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping LOW

pollution reduction LOW

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts roads

manmade structures/disturbances highway, riprap

Wetland # 52

Wetland location Farmington River floodplain

MDC # 743

This wetland is composed of the Farmington River floodplain Saco soils which surround the mouth of Griffin Brook. Most of the land surrounding the Brook is steep and rocky, except for this small section of flat wetland soils. Poplar, elm, silver maple, and sycamore occur along this stretch of the floodplain. This small wetland is traversed frequently by bikers and hikers.

Wetland # 52

Wetland location Farmington River floodplain

MDC # 743

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping LOW

pollution reduction LOW

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education MEDIUM

Disturbances

upstream impacts roads

manmade structures/disturbances highway

Wetland # 53

Wetland location Farmington River

MDC # 638

This wetland occurs as coarse-textured sand and gravel river deposits in the middle of the Farmington River. These alluvial soils are excessively drained, and experience extremes of alternating wet and dry conditions, depending on the level of water in the river. Silver maple, red ash, American sycamore, and black willow all inhabit this unstable ecosystem.

The evaluation methodology is not particularly suited to river island communities. It is fairly obvious, however, that these unstable soils are best left undisturbed. Island ecosystems are important to wildlife (especially migrating birds) for food and shelter.

Wetland # 53

Wetland location Farmington River

MDC # 638

Hydrolgic Functions

groundwater exchange n/a

flood control LOW

sediment trapping LOW

pollution reduction LOW

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness this is the only island ecosystem in Bloomfield

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances none

Wetland # 54

Wetland location Farmington River Floodplain

MDC # 638 639

This section of Walpole soils is located near the Farmington River floodplain. Although composed of moderately- coarse to medium-textured soils, this wetland is poorly drained due to a seasonally high water table. This land is forested with a mixture of species, such as red maple, ash, black birch, and a stand of white pines. The spice bush and viburnum shrub understory is consistently thick throughout.

Wetland # 54

Wetland location Farmington River Floodplain

MDC # 638 639

Hydrolgic Functions

groundwater exchange MEDIUM

flood control LOW

sediment trapping LOW

pollution reduction MEDIUM

Biologic Functions

wildlife habitat MEDIUM

rare/endangered species n/a

uniqueness n/a

Cultural Function

recreation/education LOW

Disturbances

upstream impacts none

manmade structures/disturbances none

Bloomfield's Inland Wetlands

Descriptions and Conclusions

Bloomfield's Wetlands

Geologic and Glacial Histories

The present-day topography of Bloomfield is the result of geologic, glacial, and climactic events. The geologic history is dominated by a basic structure initiated by multiple volcanic occurences. Lava, flowing up from cracks and fissures, spread out over the surface of this region, cooling to form a hard impervious layer of rock. The particular mineral elements of this igneous material formed basalt and dolorite.

Geologists believe that there were three major eruptions. Between each successive lava flow, sands and clays weathered from the surrounding highlands and were deposited on top of the basalt. This action formed horizontal layers of sandstone and basalt which, over time, were uplifted and tilted by subtle shifts in the earth.

Of the outstanding characteristics of the Connecticut Valley, the basalt ridges are remarkable. Talcott Mountain is a local example of this process in the earth's topographic evolution. Because of the rock's resistance to weathering relative to the companion layers of sandstone, it remains as long protruding ridges in the landscape.

Following the major structural geologic events, a period of glaciation affected the region. During this time, water was rerouted, drainageways dammed, depressions scoured out of the landscape, and rocks and soils were transported over long distances. New England's wetlands owe their existence to these processes.

Wetland Soils

New England's geologic and glacial histories are intracately linked to the origin and existence of Bloomfield's wetlands. Much of the town's soil is composed of former lake-bottom fine-grained silts and clays. As the glacier began to melt, a dam of rock and boulder debris formed in what is now the town of Rocky Hill. Meltwater from the huge ice mass was temporarily blocked from draining southward. Bloomfield was one of the many towns north of Rocky Hill covered by an enormous stagnant body of water called Lake Hitchcock. As a result of this lake, many large sections of the North Central Connecticut Valley Lowlands were covered with fine sediments which settled out of the slow-moving lake water.

By nature, fine-grained soils, have a slow internal drainage rate. When combined with a high water table, they remain wet for long periods of time throughout the year. Wetlands with these soils tend to lack a fragipan, be in topographically low areas and become part of the regional groundwater system during wet seasons. Generally, these wetlands are areas of discharge -- areas where groundwater flows into depressions and onto the surface of the ground. The extent to which this process is reversed and these areas act as recharge zones is not clearly understood; however, it is extremely significant that there is an exchange between the wetland and the underlying groundwater.

Of the ten major wetland soils occurring in Bloomfield, three -- Scantic (ScA, SdA), Swanton (SyA, SzA), and Whately (WoA) -- are glaciolacustrine soils. They predominate in acreage and occur most frequently in the eastern half of town. Some of the larger wetlands containing these soils include the Wintonbury and Blue Hills Reservoirs, and the wetland area east of Blue Hills Avenue across from Blue Hills Reservoir.

Lacustrine soil conditions are very different from till and bedrock, Bloomfield's second dominant wetland soil type. In this case, a perched water table is responsible for the saturated conditions. Two different till and bedrock wetlands occur in Bloomfield: hillside and bottomland wetlands.

The hillside wetlands are most numerous on the Talcott Mountain, a typical Valley ridge. The hard and impervious layer of basalt is very near the surface and the soils on its steep hillside are shallow and rocky. Because vertical drainage in the relatively flat sections of the ridge is minimal, water is temporarily trapped, and hillside wetlands are formed. Runoff from the hillside can be heavy, especially during times of long or hard rains. Intense runoff is evidenced by a few heavily eroded stream channels such as the one coming off the mountain that crosses Gun Mill Road. Hillside wetlands trap, filter, and temporarily detain the runoff as it travels downslope.

Bottomland till wetlands are not totally dissimilar to hillside wetlands. They occur in lowland areas where the soil has been compacted just below the surface. This compacted layer, called a hardpan or fragipan, impedes vertical drainage, prevents exchange between the wetland and local groundwater and, in effect, creates perched groundwater conditions. In Bloomfield, two soil series exhibit these characteristics. They are the Menlo (MpA, MoA) and Wilbraham (WrA, WsA, WtA) series, and are frequently located around drumlin formations.

Geologists are not certain how drumlins evolved, but they hypothesize that these oval-shaped hills resulted from the glacier compressing and overriding underlying soil material. Many bottomland till wetlands seem to occur at the base of these hills. An example of this is the northern sec-

tion of the Cold Spring Reservoir, where elongated strands of wetlands are sandwiched between drumlins.

As the climate warmed, the melting glacier sent torrential waters down the valleys. The velocity and strength of the water is recorded in the characteristics of the present day mantle. Large banks of debris acted as dams, turning whole valleys into lakes. For watercourses to find their way over these rocky masses, they had to drop out the heavier sands and gravel; what was created were the coarse gravelly soils known as outwash. Generally, outwashes dry out quickly because they are largely deficient in smaller water-holding particles and so quite porous. Wetlands that occur on outwash are accounted for by associated high watertables.

Another wetland soil type is derived from stream and river overflow sediments. These are the floodplains which occur along streams, rivers and channels, marking their high water boundaries. Ranging in texture from silt to coarser loams and sands, they are frequently inundated and slow to drain. Floodplain soils are very fertile and so are often cultivated. Much of the Connecticut River floodplain was and still is used as tobacco farmlands.

The fourth, uncommon--but extremely important--wetland soil type in Bloomfield is the peat and muck (PkA, PmA). Peat soils are ecologically significant for a number of reasons. One important characteristic is that it is able to absorb many times its weight in water, thereby significantly affecting the timing and degree of flooding downstream. Organic soils are also able to adsorb potential pollutants (such as nitrogen and phosphorus) and incorporate them into plant material via nutrient uptake.

Peat is an indication of former ponds, many of which were created during glaciation when blocks of ice became lodged in the surrounding landscape. They melted, ponded and eventually filled in with plant and animal debris to form the present day wetland. Examples of organic soils include the shrub swamp along Tunxis Avenue, just south of Capewell Drive, the small sections of peat at the head of Blue Hills and Tunxis Reservoirs' tributaries and the large area of peat which occurs in Cold Spring Reservoir.

Wetland Vegatation

Soil type and hydrology significantly affect the plants and animals which inhabit an area. Not to be neglected is the reverse of this cause and effect: plants can affect hydrology by transpiring large quantities of water, and affect soil type, as is evidenced by organic deposits of peat and muck; beavers can have a visible and drastic affect on the hydrology of an area by damming drainage ways.

In the northeast, red maple is the most common wetland plant and the the red maple swamp is the most common wetland class. It inhabits all soil types and tolerates a wide range of hydric conditions. Red maple occurs both as an older tree in forested wetlands and as a sapling in the wetter shrub swamp wetlands (e.g. wetland no. 22 north of the country club). Other trees are likely to be associated with it, the species dependent on the degree and frequency of soil saturation. (e.g. American elm, white oak, hemlock, and willow.)

The association of red maple with sedge hummocks, Sphagnum moss, or Juncus is a fairly reliable indicator of prolonged wet condiitons.

Isolated openings in the forest may be the result of localized disturbances such as windthrows or significantly wetter conditions due to topographical irregularities and soil characteristics. Shallow marshes and shrub swamps are opportunistic of this condition. Shallow marshes usually indicate wetter areas and are visibly marked by the predominance of herbaceous vegetation such as cattail, purple loosestrife, burreed, sedge, Juncus, Phragmites, and by the absence of trees. Shrub swamps are vegetated with thickets of alder, highbush blueberry, red oisier dogwood, red maple saplings, and buttonbush. (Buttonbush is one of the few shrubs able to withstand the stress of the constant or near constant saturation of peat and muck substrates or water logged depressions. Two examples of this situation are wetland 37, south of Capewell Drive, and the depressions in the wetland west of the shopping mall on Cottage Grove Road.)

Shrub swamps are frequently found along streams, as well. Thick patches of wetland shrubs--especially alder and red oisier dogwood--border parts of Beamans Brook (near the school) and Tumbledown Brook north of the Cigna building.

In addition to wooded swamp, shrub swamp, and shallow marsh, another wetland class occurring in Bloomfield is the meadow. Characteristically, meadows are part of the agricultural lands kept open by grazing and mowing, but may exist on abandoned farmlands as well. Juncus, sedge, and cattail tend to be the meadows' inhabitants. Examples can be seen in back of Bloomfield Middle School and west of School Street.

Human activity has an important influence on wetlands and wetland vegetation. For instance, many of Bloomfield's wetlands have been impacted by housing, industrial developments, or roads.

Phragmites frequently indicates areas of disturbance. This plant is not only able to withstand but is often encouraged by the changes in hydrology caused by filling and impounding. Because it is so tenacious, once established it often quickly takes over wetlands, drastically reducing species diversity.

Wetland Data

The system for this report was developed to produce a body of knowledge on Bloomfield's wetlands. It is based on a six function evaluation process which is applied to every wetland individually and on-site. (For details of the system, refer to the section on methodology.) Briefly, the six functions evaluated are groundwater exchange potential, flood control, sediment trapping, pollution reduction, wildlife habitat and recreation/education, and the rating system is on a high, medium, low basis. One way of reading the information produced by the evaluation is to group numbers of high functions together; however, it should be noted that this may not always lead to conclusions that are useful to Bloomfield in particular cases. Each wetland needs to be examined for its own merits when challenged for alternative use.

The data collected are presented from two different perspectives: by function and by wetland. (This information is depicted graphically in figures 1 and 2.) Remarkable data are noted. Priority wetlands in Bloomfield were determined from the field studies and data combined, and are given in this section of the report.

Tables 1 and 2 show a list of high and medium ranking wetlands by function. In table 1 the six functions are listed at the top; under each function is a list of those wetlands which have a high rank. It can be seen from this table that relatively few wetlands are exceptionally important for groundwater exchange, sediment trapping, and pollution reduction. In fact only 3 wetlands have a high function for groundwater exchange, only 3 rank high for sediment trapping and only 3 rank high for pollution reduction. For many of these wetlands (the ones with high ranks for pollution

reduction, sediment trapping, and groundwater), it is the only high rank it received. In these cases, if wetlands were assigned a single value, these high ratings would most likely get averaged downward, and the wetland would not be particularly outstanding. But, quite to the contrary, these wetlands are rather significant; they are some of the few in Bloomfield which are performing exceptionally well in these three water quality functions.

Table two lists the wetlands which have received medium values for each of the six functions.

The following are wetlands for which preservation and protection should be a priority, because of their importance in maintaining acceptable water quality standards, providing open space and wildlife habitats, and protecting lands from floods.

Priority Wetlands

Water Quality: Groundwater

Few wetlands in Bloomfield have a high potential for groundwater interchange though many have a moderate exchange potential. (See Tables 1 and 2 for a list of these wetlands.) The potential for groundwater interaction indicates wetlands which are inextricably linked to the underlying aquifer to varying degrees. Depending on the individual situations, wetlands can be places where the groundwater is 'exposed' and vunerable to contamination. They are often areas that filter and therefore protect the aquifer.

Much about the groundwater system is not well understood. Groundwater movement is extremely slow; contamination, apart from being very costly and

difficult to remove from an aquifer, is often not detected until long after it occurs. Given the lack of data, difficulty in clean up, and importance of water as a drinking source, great care should be taken in areas which may be associated with aquifers.

The following briefly describes the wetlands which have a high groundwater interaction potential:

School Street no. 30 This small and seemingly inconsequential wetland has a high potential for groundwater interaction. Its saturation during the wet season is most likely the result of groundwater seepage. The contiguous road is a source of potential pollutants (salt, oil and other hydrocarbons) which, if and when recharge occurs, could pose a hazard to the underlying groundwater.

Cold Spring Reservoir no. 21C Much of this area is underlain by coarse-grained stratified drift, substrate through which groundwater is able to flow relatively easily. Much of this wetland is composed of peat (the areas within the Reservoir and south, near the golf course); since this substrate has the ability to retain and later release large quantities of water, this wetland may act as a recharge area during dry seasons. This wetland also rates highly in pollution reduction, and therefore serves an important function of protecting the quality of both the regional groundwater and surface water in this area. The northern sections of this wetland are composed of fine-grain sediments and contain a fragipan, and therefore do not have this high potential to interact with the groundwater.

Capewell no. 37 This wetland is also composed of peat, and may also have recharge capabilities during dry seasons. Also, because of the adsorptive

qualities of organic material, this wetland also has the ability to protect the quality of the groundwater from contamination.

Water Quality: Sediment Trapping and Pollution Reduction

The 'breaking point' for wetlands -- the point at which they can no longer incorporate additional sediments or pollutants -- is not clearly understood for most wetland ecosystems. At some rate and amount of loading, their assimilative capacities will be impaired, and the quality of the wetland will deteriorate dramatically. Table 1 lists the wetlands which have a high sediment trapping value. The following is a brief description of these wetlands.

east of Cigna pond no. 7 Although the only high rating this wetland received was for its ability to filter sediments, few other wetlands function in this capacity as well. The broad flat herbaceous depression near the southern end of this wetland provides a flat, wide surface over which surface water can be filtered.

East Dudley no. 32C This wetland, although small and impacted, is singled out here because of its capacity to filter sediments. Few other wetlands in Bloomfield function as well in this capacity. The characteristics which make this wetland an effective filter are the fine herbaceous vegetation, as well as the presence of open standing water, and the broad area over which the water can be filtered.

Sunset and Valley Roads no. 23 Also important for its abilities to filter and retain sediments is the wetland west of Sunset Road. At the time of the evaluation, construction upslope was contributing to the sediment load in the watercourse. The diffuse flow of water and fine dense herbaceous vege-

tation, both in the red maple-sedge swamp and in the open meadow areas, enhance the ability of this wetland to filter water. As building and development increases in the adjacent uplands, this wetland will continue to protect the water quality by reducing the effects of an increased sediment load. This wetland is also important as a wildlife habitat and as an area that stores floodwaters.

A list of the wetlands with moderate sediment trapping values appears in Table 2.

The following wetlands have a high potential for adsorbing and removing pollutants from surface waters. (These are listed in Table 1.)

north of East Dudley, east of Iron Ore no. 32B This wetland (because it is partially composed of peat, has a diffuse flow of water, and an on-site possible pollution source) has a high potential to improve and protect the quality of the surface and ground waters. (This area lacks a fragipan, and has a moderate potential for groundwater interaction.) This area is also rated highly as a wildlife habitat.

Cold Spring Reservoir wetland no. 21C See the previous section on groundwater exchange potential.

east of Blue Hills Ave, south of East Dudley no. 32D This large wetland ecosystem rates high for both pollution reduction potential and wildlife habitat. It is a relaitvely unimpacted wetland -- one of the few that has a high potential to adsorb pollutants and improve the quality of the surface water.

A list of the wetlands with moderate pollution reduction values occurs in Table 2.

Flood Control, Wildlife Habitat, Recreation/Education

A number of Bloomfield wetlands received high ratings for flood control, wildlife habitat, and recreation/education (see table 1). These wetlands are priority areas, as they provide valuable open space, house large and diverse populations of wildlife, and affect the timing and levels of floodwater. They are usually large, and offer visual and ecological diversity. Many are currently protected since they are town or state owned lands (such as the Blue Hills, Tunxis, Wintonbury and Cold Spring Reservoirs, Lake Louise, the hillside wetlands in Penwood Park, and Barbers Pond Recreational area). The three functions which received the largest number of high values were flood control, recreation and education, and wildlife. Even though the evaluation criteria for these three functions are very different, many of the wetlands which received high values for one of these three functions also recieved a high value for at least one of the other two. For example, eight of the eleven wetlands which received high ratings for wildlife habitat also were rated high for flood control. Similarly, eight of the eleven wetlands with high recreational/educational values received high ratings for flood control.

Wetlands with moderate ratings for flood control, wildlife habitat, and recreation/education occur in Table 2.

Other valuable areas

There are a few other areas which, because they are part of larger wetlands, are important but do not stand out in an evaluation such as this. These are the small areas of peat that are incorporated in larger wetlands.

As was mentioned previously, peat is ecologically valuable because of its absorptive and adsorptive qualities.(This organic substrate enhances the potential of a wetland to absorb and delay floodwaters, adsorb potential pollutants, and store water for later release to the underlying aquifer.) Also, this soft and well-saturated substrate poses severe use limitations; it is unsuitable for most uses other than open space. These areas of peat are listed below:

--tip of the northeast arm of wetland no. 38

--the northern portion of Wintonbury Reservoir, south of the pond

--east of Iron Ore Road (wetland no. 32B)

--north of Blue Hills Road, above Blue Hills Reservoir

--Griffin Brook wetland, west of Terry Plains/ Duncaster Rd. intersection

--Tumbledown Brook Golf Course/Cold Spring Reservoir

GW	FC	ST	PR	WL	R/E
21C	1	7	21C	2	21B
30	14	23	32B	14	21C
37	21B	32C	32D	21C	26
	21C			23	28
	22			32A	32A
	23			32B	34
	24			32D	35
	32A			34	38
	34			35	40
	35			38	41
	36			40	42
	38				
	40				
	42				

TABLE 1. A list of wetlands by high-ranked function.

GW groundwater exchange potential, FC flood control, ST sediment trapping, PR pollution reduction, WL wildlife habitat, R/E recreation/education

The numbers listed under each function identify those wetlands which received a high rating for that particular function. It is apparent from this table that relatively few wetlands are functioning exceptionally well in water quality capacities (groundwater exchange, pollution exchange, sediment trapping). Many of Bloomfield's wetlands, on the other hand, provide valuable wildlife habitats, recreational sites, and flood control areas.

GW	FC	ST	PR	WL	R/E
1	2	1	1	1	4
2	3	2	2	2	7
3	4	3	3	3	14
4	5	4	4	4	15
5	6	5	5	6	16
6	7	6	6	7	17
7	8	8	7	8	18
9	13	9	8	11	20
10	16	10	9	15	21A
11	17	11	10	16	21D
12	18	12	11	17	22
13	20	13	12	18	23
19	21A	14	13	21A	24
20	21D	15	14	21B	25
21D	26	16	15	21D	32C
23	27	17	16	22	36
25	28	19	19	24	40
26	29	20	20	26	44
27	30	21A	21A	27	48
28	31	21B	21B	31	50
29	32B	21C	21D	32B	51
31	32C	21D	22	32C	52
32A	32D	22	23	33	
32B	33	24	24	36	
32C	37	25	25	41	
32D	39	27	26	42	
33	41	28	27	44	
34	43	29	28	45	
35	44	30	29	50	
39	45	31	30	51	
42		32A	31	52	
46		32B	32C	53	
47		32D	32D	54	
49		33	33		
50		34	34		
51		35	35		
52		36	36		
54		37	37		
		38	38		
		39	39		
		40	40		
		42	42		
		43	44		
		44	45		
		45	46		
		46	47		
		47	48		
		48	54		
		49			

Table 2. A list of the wetlands by moderate-rated functions.

GW groundwater exchange potential, FC flood control, ST sediment trapping, PR pollution reduction, WL wildlife habitat, R/E recreation/education

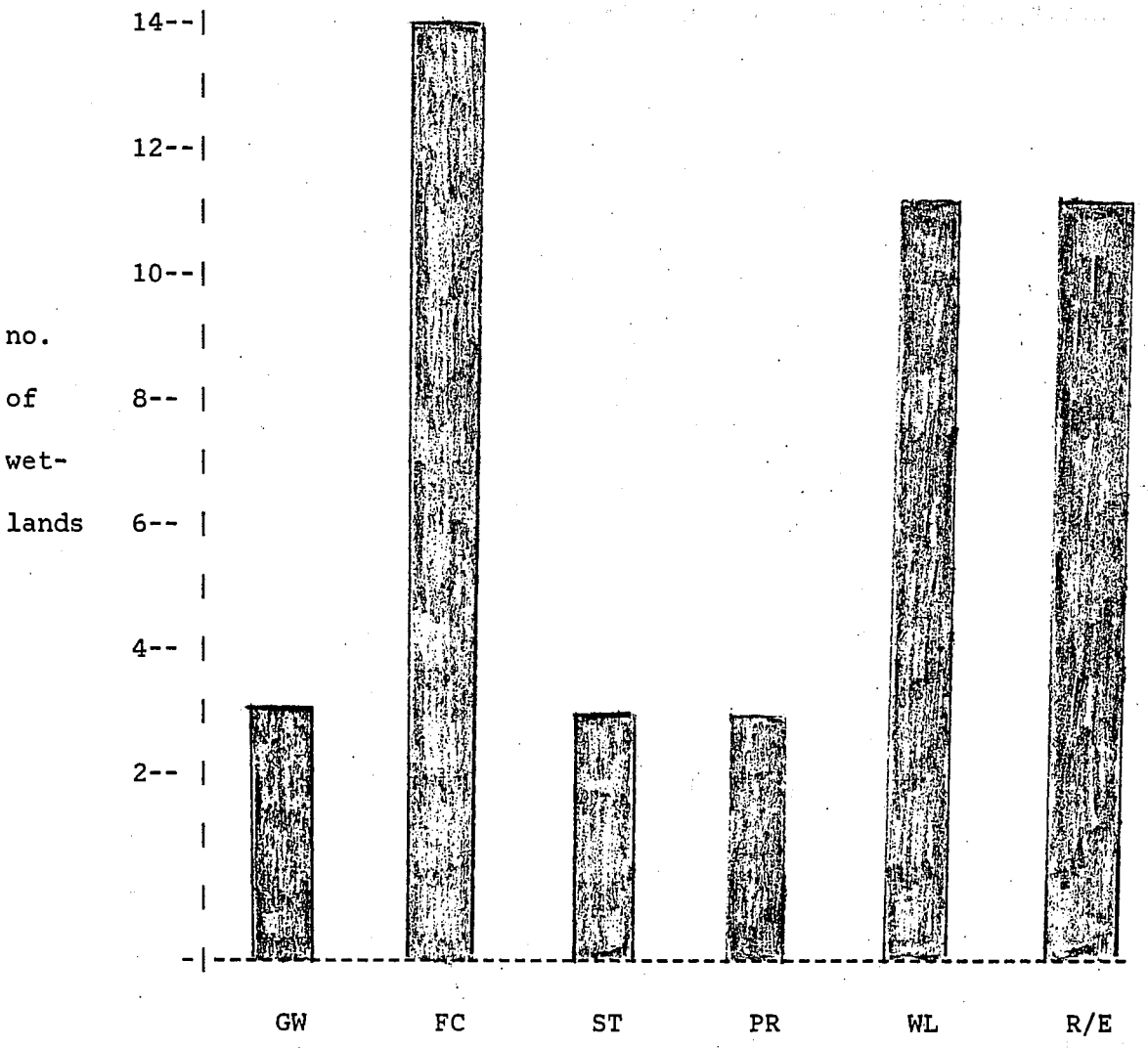


Figure 1. Number of wetlands per high ranking function. (Only three wetlands received high ratings for groundwater exchange potential, while 14 wetlands received high ratings for flood control, and so on...)

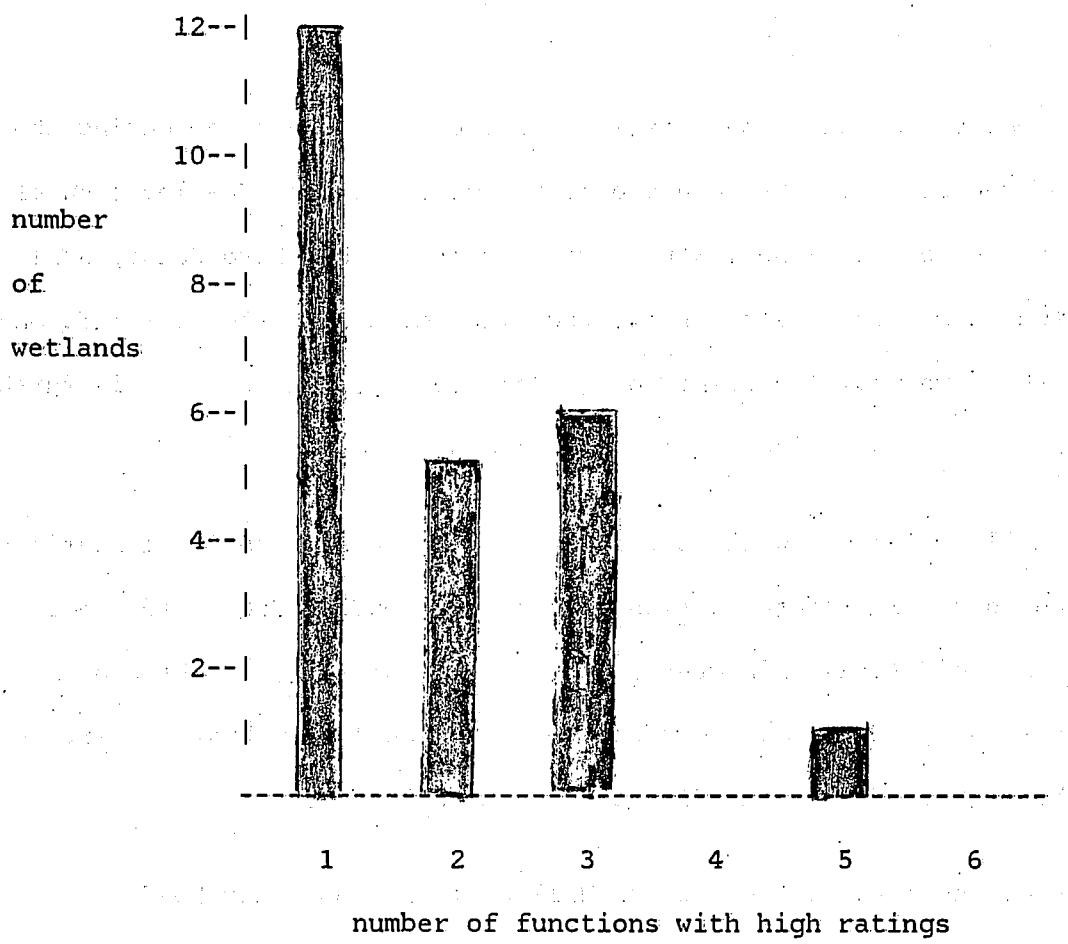


Figure 2. Number of high ranking functions per wetland. (12 wetlands have only one high rank, 5 wetlands have two high ranks, 6 wetlands have three high ranks, no wetlands have four high ranks, only 1 wetland has five high ranks, and none of BLoomfield's wetlands function high in all six capacities.)

Appendix 1. Wetland Map Errors

A few omissions, discrepancies and other errors were found during the course of the study in the town's official wetlands map. The location of the boundaries of the School Street wetland in the Hartford County Soil Survey (which was the basis for the town map) does not match the information on the town map. According to the Soil Survey, this wetland is further to the west than is indicated on the town map.

Blue Hills reservoir wetland contains some errors in soil delineations. In the north section of the wetland, below West Dudley Town Road, three soils -- Elmwood (EnA), Ninigret (NaA), and Agawam (AfB) -- have been included as wetland soils. According to a 1984 Soil Conservation Service list, these three do not qualify as wetland soils.

South of the intersection of Gun Mill Road and Duncaster Road is an area which, according to the town wetland map, has been developed. A pond has been created in this section of Menlo soils, but otherwise, the area is as yet undeveloped, and remains a red maple, white oak, sedge dominated wooded swamp.

Another area which is indicated on the town map as developed land, but in fact is undeveloped designated open space, is the wetland section across High Hill Road. This land is part of the surrounding red maple forest.

Appendix 2: Boundary Recommendations

A common problem regarding the enforcement of wetland regulations in Connecticut is mapping and boundary inaccuracies. In Connecticut, wetlands are delineated soley on the basis of soils (floodplain, alluvial, poorly drained, and very poorly drained). In Massachusetts and other states, wetlands are defined by plant communities as well as soil type. On site investigations help clarify the outer extensions of wet areas. Given that the soils information for Hartford County is somewhat outdated, and in the process of revision, vegetation can be an important aid in the determination of wetland boundaries. Soil definition and interpretation, however, is variable, so that, even with the updated soils information, vegetation can be an important supplement in the determination of boundaries.

Not only are there problems inherent in transposing boundary information from one map to another, but wetland edges are, by nature, often indistinct. Rather than a sharp or fairly obvious line between upland and wetland, wetland boundaries are, instead, a gradient from wet to drier soils which can extend over a wide area. It is often more accurate to delineate a wetland with a band or buffer many feet wide. This more accurately represents what actually happens in nature, recognizes that the effects of activities can extend over wide areas (especially downslope and downstream), and, perhaps most importantly, shifts the focus of attention from boundary placement to the effects of impacts on wetlands. A variable boundary width, adjusting for the realities of topography in individual cases, is recommended. A one hundred foot buffer around wetlands is commonly used as a buffer width. This can be adjusted, depending on slope and soil characteristics. Where the slope is gradual and the soils highly erodible, the

full width of the boundary is used. For wetlands sorrounded closely by less gradual and less erodible soils, buffer widths can be reduced to fifty or thirty feet. As a general rule sopurces of drinking water are protected by a 75 foot buffer, and watercourses by a 100 foot buffer.

Appendix 3: Golet's Wetland Classification System (From Golet, 1976)

CLASS Open Water (OW):

These wetlands are dominated by submergent and surface vegetation and are covered by 3 to 10 feet of water.

SUBCLASS vegetated (OW-1) Submergent and surface vegetaton is present.

SUBCLASS non-vegetated (OW-2) Submergent and surface vegetation are absent.

CLASS Shallow Marsh (SM):

The depth of water in shallow marshes is usually less than 6 inches. Herbaceous vegetation is dominant.

SUBCLASS robust shallow marsh (SM-1): Robust emergents such as cattail are dominant.

SUBCLASS narrow-leaved shallow marsh Narrow-leaved emergents such as burreed are dominant.

SUBCLASS broad-leaved shallow marsh (SM-3) Broad-leaved emergents such as pickerelweed are dominant.

CLASS Seasonally Flooded Flats (SF):

These are the wetlands which fringe the large rivers and are intermittently flooded. They are distinguished on the basis of floodplain soil designation.

CLASS MEADOW (M):

These wetlands are found most commonly on agricultural land where farming and grazing practices prevent the establishment of woody vegetation. These areas are regularly inundated with up to 6 inches of water except during the growing season, when the soil is usually saturated and depressions filled with surface water. This wetland class also includes abandoned farmland dominated by pioneer species.

SUBCLASS ungrazed meadow (M-1) Farming and grazing practices are no longer applied to these wetlands. Tall meadow emergents are abundant.

SUBCLASS grazed meadow (M-2) Short emergents such as sedges are abundant, as a result of grazing activities.

CLASS Shrub Swamp (SS):

These wetlands are dominated by shrub species and are either seasonally or permanently flooded.

SUBCLASS bushy shrub swamp (SS-2) Bushy shrubs such as highbush blueberry are dominant.

SUBCLASS aquatic shrub swamp (SS-4) Aquatic shrubs such as buttonbush dominate these wetlands. Of all the shrub swamp subclasses, the aquatic shrub swamp has the deepest and most persistent water regime.

CLASS Wooded Swamp (WS):

Wooded swamps are characterized by tree, shrub and herbaceous strata, with the tree as the dominant plant form. Wooded swamps are the most abundant

wetland class in Bloomfield.

SUBCLASS deciduous wooded swamps (WS-1) Deciduous trees such as red maple are dominant.

SUBCLASS evergreen wooded swamp (WS-2) Evergreen trees such as hemlock are dominant.

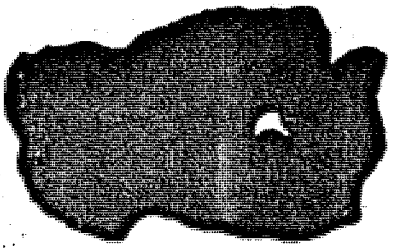
CLASS Bog (BG):

This wetland class is characterized by an accumulation of peat and muck and by species tolerant of slightly acidic and nutrient-poor environments, such as leatherleaf and Sphagnum moss.

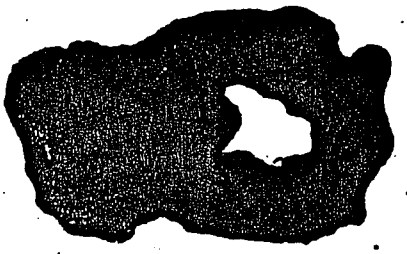
SUBCLASS bushy shrub bog (BG-1B) Bushy shrubs, such as highbush blueberry are dominant.

Appendix 4: Cover Type and Vegetative Interspersion (from Golet, 1976)

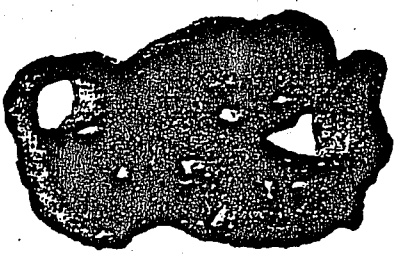
Wetland cover types. White areas indicate water, black areas indicate vegetation cover. From Golet (1976).



COVER TYPE 1



COVER TYPE 2



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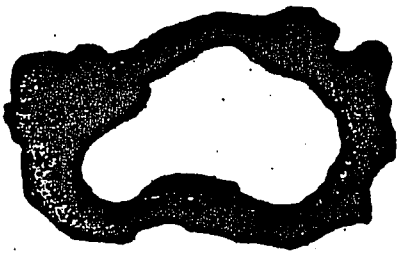
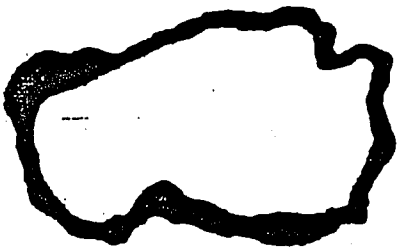
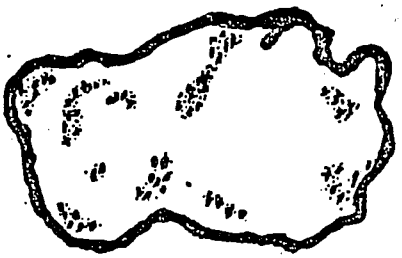


COVER TYPE 4

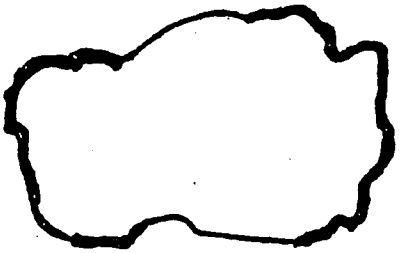
COVER TYPE 5



COVER TYPE 6

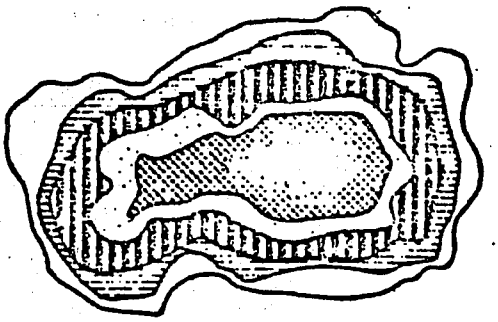


COVER TYPE 7

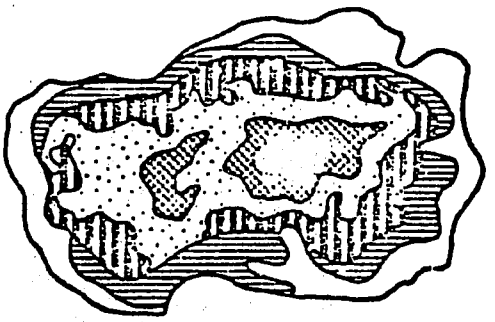


COVER TYPE 8

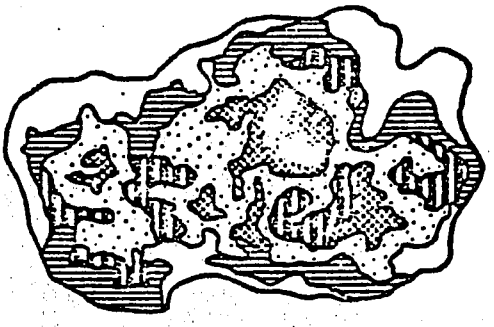
Examples of three vegetative interspersion types. From Golet (1976).



INTERSPERSION TYPE 1



INTERSPERSION TYPE 2



INTERSPERSION TYPE 3

DECIDUOUS TREES

TALL SLENDER SHRUBS

BUSHY SHRUBS

TALL MEADOW EMERGENTS

ROBUST EMERGENTS

BROAD-LEAVED EMERGENTS

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MAPS

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Department of Environmental Protection, CT

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Water Resources Bulletin no. 24 Plate B. Connecticut D.E.P. U.S. Geological Survey. Map of Surficial Geology. (Available from D.E.P.).

ORGANIZATIONS

Connecticut Department of Environmental Protection, Hartford, CT. (Natural Resources Center)

Inland Wetlands and Watercourses Commission, Town of Bloomfield.

Soil Conservation Service (Office for Hartford County is located in Windsor, CT.)