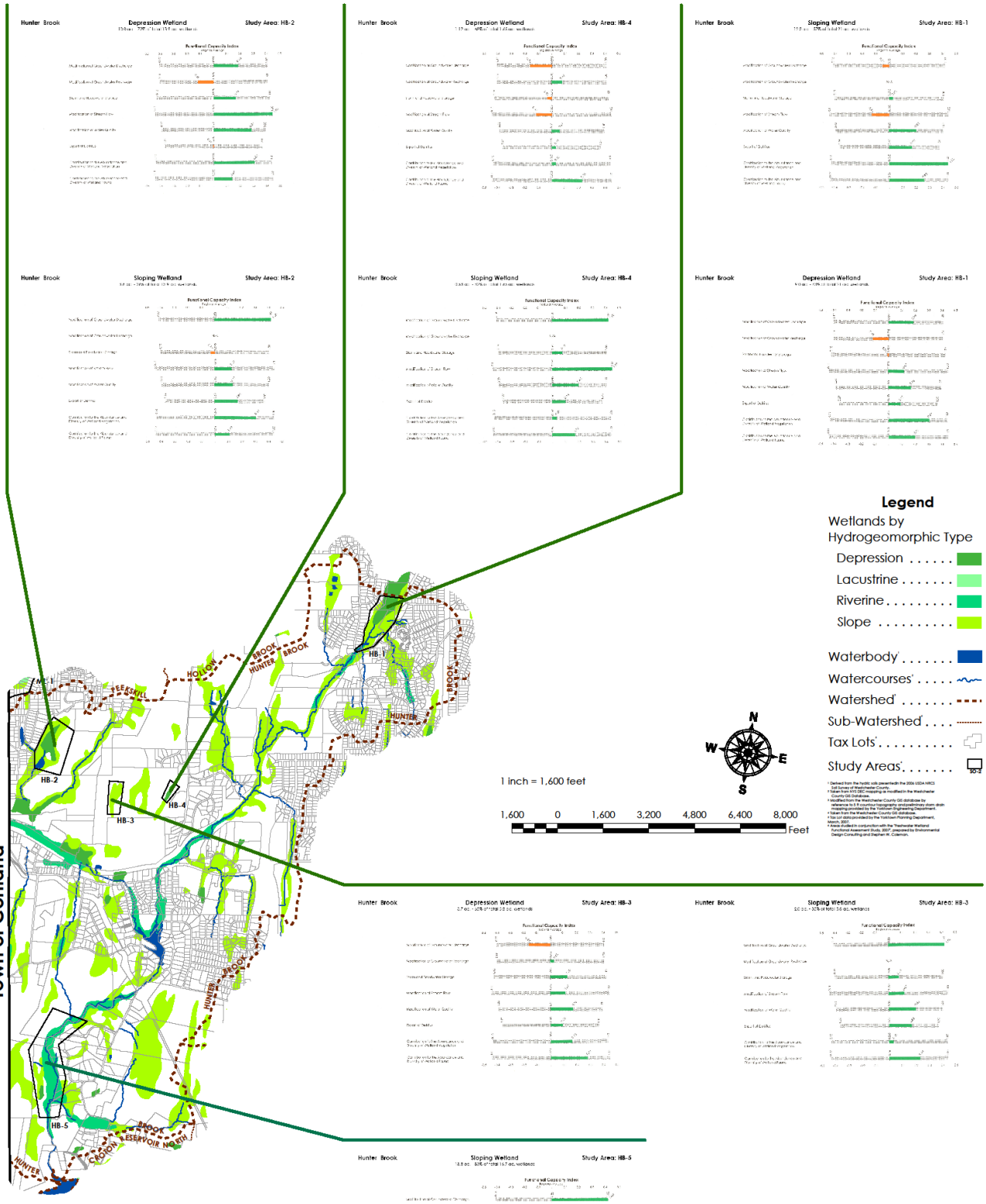
Town of Yorktown, New York

Wetland Functional Assessment Study

Hunter Brook Watershed



Prepared By:

Environmental Design Consulting

Bruce M. Donohue, Landscape Architect BLA, MLA, MS Ecology

As part of the Freshwater Wetlands Functional Assessment Study, 2007.

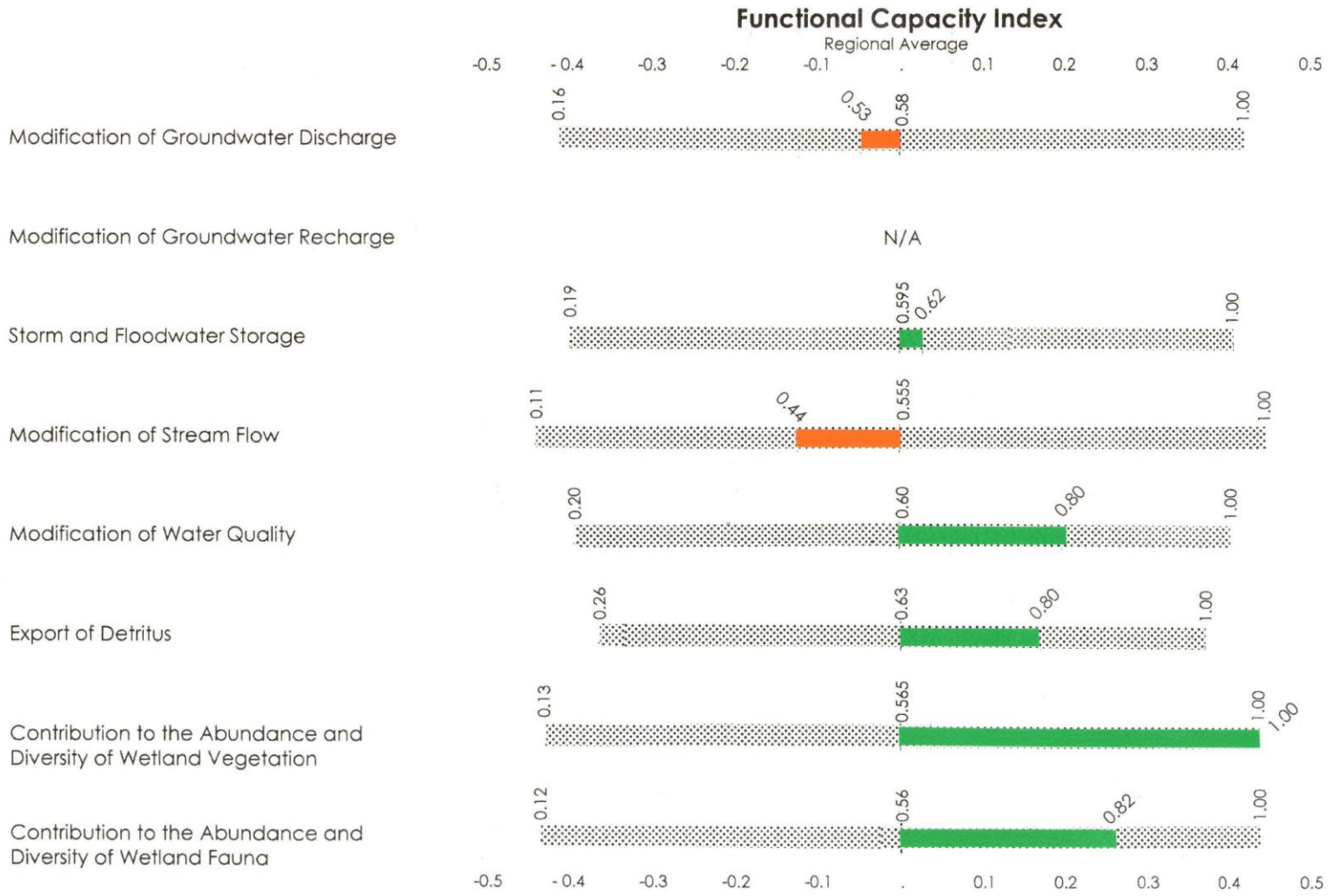
Additional GIS map production assistance provided by:

JAM GIS CONSULTING

JAIME A. MARTINEZ - 718-501-8332

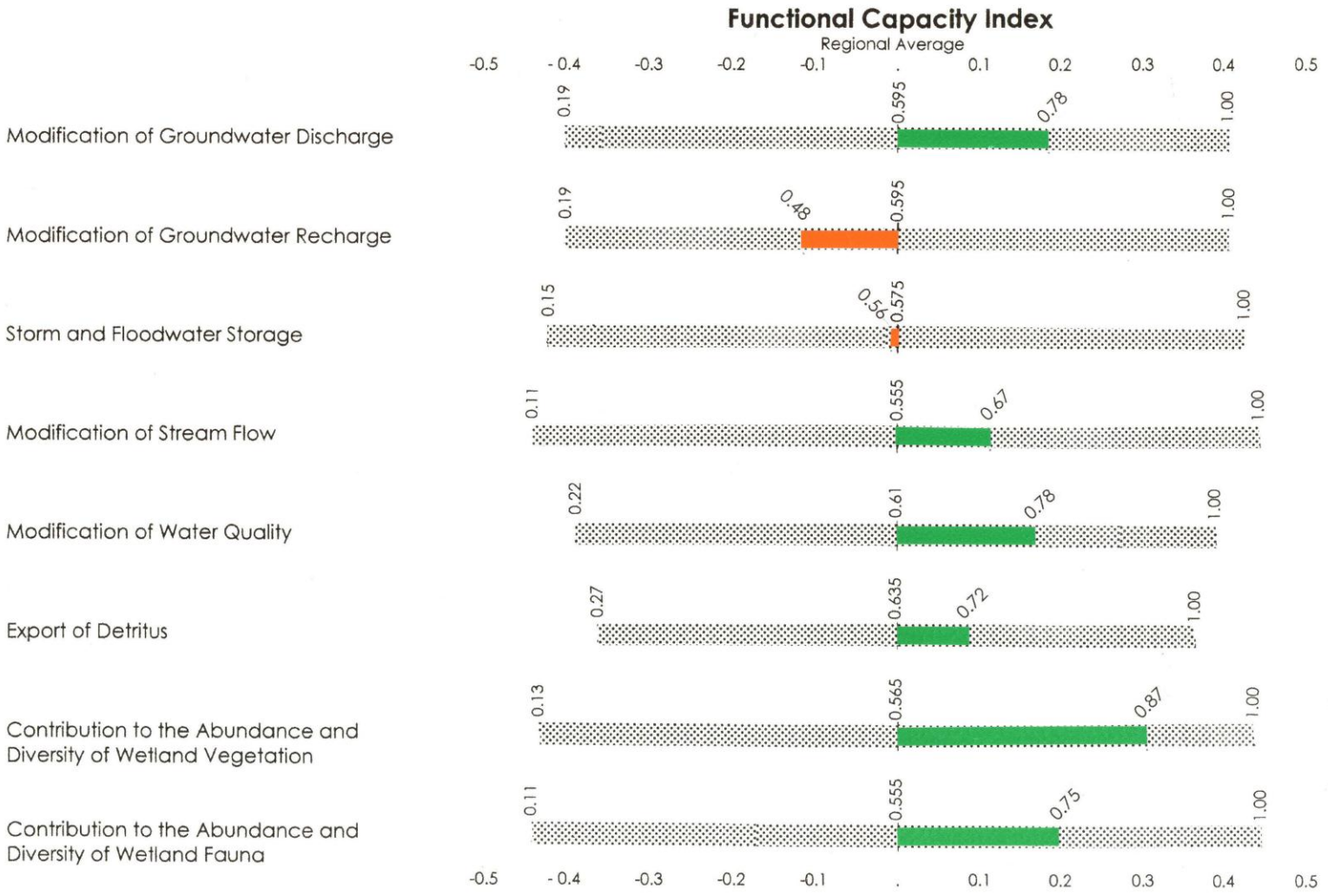
Hunter Brook **Sloping Wetland** **Study Area: HB-1**

12.3 ac. - 57% of total 21 ac. wetlands



Hunter Brook **Depression Wetland** **Study Area: HB-1**

9.0 ac. - 43% of total 21 ac. wetlands



WETLAND INVENTORY DATA

SLOPE 11.99 ac (57%)
DEPRESSION 9.00 ac (43%)

Project Number: Yorktown **Date:**

Wetland Number: HB-1

Aerial Photo Numbers:

USGS Quadrangle: Mohegan Lake

Field Investigators: BD

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	43%	Depressional
	57%	Slope
		Flat
		Extensive Peatland
		Lacustrine Fringe
		Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	
Deciduous	
Broad-leaved	80 60
Needle-leaved	
Scrub Shrub	
Evergreen	
Broad-leaved	
Needle-leaved	
Deciduous	
Broad-leaved	20 40
Needle-leaved	
Emergent Wetland	
Persistent	
Non-persistent	
Aquatic Bed	
Total	

SOIL TYPES

Histosol
- Fibric ☐
- Hemic ☐
- Sapric ☑

Mineral Hydric Soil
- Gravelly ☐
- Sandy ☑
- Silty ☐
- Clayey ☐

GEOLOGY

Surficial:

Bedrock:

Comments: EFFECTIVENESS OF CULVERT CONNECTION ACROSS OAKSIDE NOT CLEAR. OAKSIDE IS DESIGNATED AS THE WATERSHED DEVIDE BETWEEN SHRUB OAK BROOK & HUBBARD BROOK

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
SKUNK CABBAGE						■							■
SPICEBUSH							■				■		
SENSITIVE FERN							■						■
RED MAPLE						■			■				
GRAPE							■						■
WINTERBERRY						■					■		
SILKY DOGWOOD						■					■		
BLACK CHERRY								■	■				
FORSYTHIA								■				■	
GREEN ASH							■		■				
PUSSY WILLOW							■				■		
HONEY SUCKLE								■			■		
SUGAR MAPLE								■	■				
AMERICAN ELM							■		■				
MULTIFLORA ROSE							■				■		
PHRAGMITES						■							■
MUSTARD GARLIC								■					■
JACK-IN-THE-PULPIT								■					■
DAFFODIL								■					■
ORIENTAL BITTERSWEET								■					■
JEWELWEED							■						■
ARROWWOOD VIBURNUM							■				■		
VIRGINIA CREEPER							■						■
RUE								■					■
MARSH MARIGOLD								■					■
SPECKLED ALDER							■				■		

OW	Obligate Wetland	COM	Common
FW	Facultative Wetland	OCC	Occasional
F	Facultative	C	Canopy
FU	Facultative Upland	S	Sapling
OU	Obligate Upland	TS	Tall Shrub
DOM	Dominant	LS	Low Shrub
		H	Herb

PRE-EMPTIVE STATUS

- ____ Public ownership
- ____ Wildlife management area
- ____ Fisheries management area
- ____ Designated State or Federal protected wetland
- ____ Documented habitat for state or federal listed species
- ____ Regionally scarce wetland category
- ____ Historic/archaeologic area

WETLAND INVENTORY DATA (continued)

PART 2 - CHARACTERIZATION of MODEL VARIABLES

LANDSCAPE VARIABLES

Size:
- [ ] Small (<10 acres)
- [ ] Medium (10-100 acres)
- [ ] Large (>100 acres)

Wetland Juxtaposition:
- [ ] Connected Upstream and Downstream
- [ ] Only Connected Above
- [ ] Only Connected Below
- [ ] Other Wetlands Nearby but not Connected
- [ ] Wetland Isolated

Fire Occurence and Frequency:
- [ ] Natural; Predictable Frequency
- [ ] Natural; Sporadic Frequency
- [ ] Human-caused; Predictable
- [ ] Human-caused; Sporadic
- [ ] Rare Event
- [ ] No Evidence

Regional Scarcity:
- [ ] Not Scarce (>5% of total wetland area of region)
- [ ] Scarce (<5% of total wetland area of region)

Watershed Land Use:
- [ ] > 50% urbanized
- [ ] 25-50% urbanized
- [ ] 0-25% urbanized

HYDROLOGIC VARIABLES

Surface Water Level Fluctuation of Wetland:
- [ ] High Fluctuation
- [ ] Low Fluctuation
- [ ] Never Inundated

Frequency of Overbank Flooding:
- [ ] Return Interval > 5 yrs.
- [ ] Return Interval 2-5 yrs.
- [ ] Return Interval 1-2 yrs.
- [ ] No Overbank Flooding

pH:
- [ ] Acid <5.5
- [ ] Circumneutral 5.5-7.4
- [ ] Alkaline >7.4
- [ ] No Water

Surficial Geologic Deposit Under Wetland
- [ ] Low Permeability Stratified Deposits
- [ ] High Permeability Stratified Deposits
- [ ] Glacial Till

Wetland Land Use:
- [ ] High Intensity (ie. agriculture)
- [ ] Moderate Intensity (ie. forestry)
- [ ] Low Intensity (ie. open space)

Wetland Water Regime:
- [ ] Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded
- [ ] Drier: Seasonally Flooded, Temporarily Flooded, Saturated

Basin Topographic Gradient:
- [ ] High Gradient >2%
- [ ] Low Gradient <2%

Degree of Outlet Restriction:
- [ ] Restricted Outflow
- [ ] Unrestricted Outflow
- [ ] No Outflow

Ratio of Wetland Area to Watershed Area:
- [ ] High >10%
- [ ] Low <10%

Microrelief of Wetland Surface:
- [ ] Pronounced >45 cm
- [ ] Well Developed 15-45 cm
- [ ] Poorly Developed <15 cm
- [ ] Absent

Inlet/Outlet Class:
- [ ] No Inlet/No Outlet
- [ ] No Inlet/Intermittent Outlet
- [ ] No Inlet/Perennial Outlet
- [ ] Intermittent Inlet/No Outlet
- [ ] Intermittent Inlet/Intermittent Outlet
- [ ] Intermittent Outlet/Perennial Outlet
- [ ] Perennial Inlet/No Outlet
- [ ] Perennial Inlet/ Intermittent Outlet
- [ ] Perennial Inlet/Perennial Outlet

Nested Piezometer Data:
- [ ] Recharge
- [ ] Discharge
- [ ] Horizontal Flow
- [ ] Not Available

Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:
- [ ] Piez. Surface Above or at Substrate elev.
- [ ] Piez. Surface below Substrate elev.
- [ ] Not Available

Evidence of Sedimentation:
- [ ] No Evidence Observed
- [ ] Sediment Observed on Wetland Substrate
- [ ] Fluvaquent Soils

Evidence of Seeps and Springs:
- [ ] No Seeps or Springs
- [ ] Seeps Observed
- [ ] Perennial Spring
- [ ] Intermittent Spring

SOIL VARIABLES

Soil Lacking:
- [ ]

Histosol:
- [ ] Fibric
- [ ] Hemic
- [ ] Sapric

Mineral Hydric Soil:
- [ ] Gravelly
- [ ] Sandy
- [ ] Silty
- [ ] Clayey

VEGETATION VARIABLES

Vegetation Lacking:
- [ ]

Dominant Wetland Type:
- [ ] Forested - Evergreen - Needle-leaved
- [ ] Forested - Deciduous - Broad-leaved
- [ ] Forested - Deciduous - Needle-leaved
- [ ] Scrub Shrub - Evergreen - Broad-leaved
- [ ] Scrub Shrub - Evergreen - Needle-leaved
- [ ] Scrub Shrub - Deciduous - Broad-leaved
- [ ] Scrub Shrub - Deciduous - Needle-leaved
- [ ] Emergent - Persistent
- [ ] Emergent - Non-persistent
- [ ] Aquatic Bed

Number of Types & Relative Proportions:

Number of Types	Evenness of Distribution
[ ] Actual #	[ ] Even Distribution
[ ] 5	[ ] Moderately Even Distribution
[ ] 4	[ ] Highly Uneven Distribution
[ ] 3	
[ ] 2	
[ ] 1	

Vegetation Density/Dominance:
- [ ] Sparse (0-20%)
- [ ] Low Density (20-40%)
- [ ] Medium Density (40-60%)
- [ ] High Density (60-80%)
- [ ] Very High Density (80-100%)

Vegetative Interspersion:
- [ ] High (small groupings, diverse and interspersed)
- [ ] Moderate (broken irregular rings)
- [ ] Low (large patches, concentric rings)

Number of Layers and Percent Cover:

Number of Layers	% Cover
[ ] 6 or > (actual #)	1. submergents:
[ ] 5	2. floating:
[ ] 4	3. moss-lichen:
[ ] 3	4. short herb:
[ ] 2	5. tall herb:
[ ] 1	6. dwarf shrub:
	7. short shrub:
	8. tall shrub:
	9. sapling:
	10. tree:

Plant Species Diversity:
- [ ] Low 1-2 plots sampled
- [ ] Medium 3-4 plots sampled
- [ ] High 5 or more plots sampled

Proportion of Animal Food Plants:
- [ ] Low (5-25% cover)
- [ ] Medium (25-50% cover)
- [ ] High (>50% cover)

Cover Distribution:
- [ ] Continuous Cover
- [ ] Small Scattered Patches
- [ ] 1 or More Large Patches; Parts of Site Open
- [ ] Solitary, Scattered Stems

Dead Woody Material:
- [ ] Abrundant (>50 of wetland surface)
- [ ] Moderately Abrundant (25-50% of surface)
- [ ] Low Abrundance (0-25% of surface)

Interspersion of Cover and Open Water:
- [ ] 26-75% Scattered or Peripheral
- [ ] >75% Scattered or Peripheral
- [ ] <25% Scattered or Peripheral
- [ ] 100% Cover or Open Water

Stream Sinuosity:
- [ ] Highly Convoluted (index 1.50 or >)
- [ ] Moderately Convoluted (index 1.25-1.50)
- [ ] Straight/Slightly Irreg. (index) 1.10-1.25

Presence of Islands:
- [ ] Several to Many
- [ ] One or Few
- [ ] Absent

HB-1 SLOPE 11.99 ac (57%)
DEPRESSION 9.00 ac (47%)
13.0 ac

2.9.1 Modification of Ground Water Discharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
Indicators of Disfunction					
• Inlet/Outlet Class	• perennial inlet/no outlet	0	0	0	0
• Nested Piezometer Data	• recharge condition	0	0	0	0
• Relationship to Regional Piezo-metric Surface	• wetland substrate elevation above piezometric surface	0	0	0	0
Direct Indicators of Function					
• Presence of Springs and Seeps	• evidence of perennial seeps or springs	18	15	15	18
• Nested Piezometer Data	• discharge condition	18	15	15	18
• Relationship to Regional Peizometeric Surface	• wetland substrate elevation below piezometric surface	18	15	15	18
• Inlet/Outlet Class	• no inlet/perennial outlet	18	15	15	18
Primary Variables					
• Microrelief of Wetland Surface	• pronounced	3	3	3	3
	• well developed	2	2	2	2
	• poorly developed	1	1	1	1
	• absent	0	0	0	0
• Inlet/Outlet Class	• perennial inlet/perennial outlet	3	3	0	3
	• intermittent inlet/perennial outlet	2	2	0	2
	• all other classes	0	0	0	0
• pH	• alkaline	3	3	3	3
	• circumneutral	2	2	2	2
	• acid	0	0	0	0
	• no water present	0	0	0	0
• Surficial Geologic Deposit Under Wetland	• high permeability stratified deposits	3	3	3	3
	• low permeability stratified deposits	2	2	2	2
	• glacial till	1	1	1	1
• Wetland Water Regime	• wet; permanently flooded, inter-mittently exposed, semipermanently flooded	3	0	3	3
	• drier; seasonally flooded, tempo-rarily flooded, saturated	1	0	1	1

(continued)

2.9.1 Modification of Ground Water Discharge (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	R	F
• Soil Type	• histosol		3	3	3	3
	• mineral hydric soil		1	1	1	1
			–	–	–	–
		Total Score:	14	8		
		Model Range:	3-18	2-15	3-15	3-18
		Functional Capacity Index:	Total Score 14	8		
			18	15	15	18
				14=0,78	8=0,53	
		Index Range:	0.19-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model can be applied to both year long and seasonal discharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a discharge mode for roughly half the year.

2.9.2 Modification of Ground Water Recharge

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	L	EP	R	F
Indicators of Disfunction							
• Inlet/Outlet Class	•	no inlet/perennial outlet; intermittent inlet/perennial outlet	0				0
• Nested Piezometer Data	•	discharge condition	0	0	0	0	0
• Relationship to Regional Piezometric Surface	•	wetland substrate elevation above or at piezometric surface	0	0	0	0	0
• Presence of Seeps and Springs	•	presence of seeps or springs	0	0	0	0	0

(continued)

2.9.2 Modification of Ground Water Recharge (Continued)

VARIABLES	CONDITIONS HGM TYPES:		WEIGHTS D	L	EP	R	F
Direct Indicators of Function							
• Inlet/Outlet Class	•	perennial inlet/no outlet	21				21
• Nested Piezometer Data	•	recharge condition	21				21
• Relationship to Regional Peizometeric Surface	•	wetland substrate elevation below piezometric surface	21				21
Primary Variables							
• Microrelief of Wetland Surface	•	Poorly Developed	3	3	1	3	3
	•	Absent	3	3	1	3	3
	•	Well Developed	2	2	2	2	2
	•	Pronounced	1	1	3	1	1
• Inlet/Outlet Class	•	Perennial Inlet/Intermittent Outlet	3	0	0	0	3
	•	All Other Classes	0	0	0	0	0
• pH	•	Acid	3	3	3	3	3
	•	Circumneutral	2	2	2	2	2
	•	Alkaline	1	1	1	1	1
	•	No water present	0	0	0	0	0
• Surficial Geologic Deposit Under Wetland	•	Glacial Till	3	1	1	1	3
	•	Low Permeability Stratified Deposits	2	2	2	2	2
	•	High Permeability Stratified Deposits	1	3	3	3	1
• Surface Water Level Fluctuation of the Wetland	•	High Fluctuation	3	3	0	3	3
	•	Low Fluctuation	2	2	0	2	2
	•	Never Inundated	1	1	0	1	1
• Wetland Water Regime	•	Drier: Seasonally Flooded, Temporarily Flooded, Saturated	3	3	0	3	3
	•	Wet: Permanently Flooded, Intermittently Exposed, Semipermanently Flooded	1	1	0	1	1
			—	—	—	—	—
• Soil Type	•	Gravelly or Sandy Mineral Hydric	3	3	0	3	3
	•	Silty or Clayey Mineral Hydric	2	2	0	2	2
	•	Sapric Histosol	1	1	0	1	1
	•	Fibric or Hemic Histosol	0	0	3	0	0
		Total Score:	10				
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	18	12	18	21
			10/21 = 0.48				
		Index Range:	0.19-1.0	0.22-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model should be applied to both year long and seasonal recharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a recharge mode for roughly half the year.

2.9.3 Storm and Flood-Water Storage

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	no outlet		27	21				30
Primary Variables								
• Inlet/Outlet Class	• perennial inlet/intermittent outlet		3	3	0	0	0	3
	• intermittent inlet/intermittent outlet		2	2	0	0	0	2
	• no inlet/intermittent outlet		1	1	0	0	0	1
	• non inlet/perennial outlet		1	1	0	0	0	1
	• intermittent inlet/perennial outlet		1	1	0	0	0	1
	• perennial inlet/perennial outlet		1	1	0	0	0	1
• Degree of Outlet Restriction	• restricted		3	0	0	0	0	3
	• unrestricted		0	0	0	0	0	0
• Basin Topographic Gradient	• low gradient		3	3	0	3	3	3
	• high gradient		1	1	0	0	1	1
• Wetland Water Regime	• Drier: seasonally flooded, temporarily flooded, saturated		3	3	3	0	3	3
	• Wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	0	1	1
• Surface Water Level Fluctuation of the Wetland	• high fluctuation		3	0	3	0	3	3
	• low fluctuation		2	0	2	0	2	2
	• never inundated		0	0	0	0	0	0
• Ratio of Wetland Area to Watershed Area	• large		3	3	3	0	3	3
	• small		1	1	1	0	1	1
• Microrelief of Wetland Surface	• pronounced		3	3	3	3	3	3
	• well developed		2	2	2	2	2	2
	• poorly developed		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
• Frequency of Overbank Flooding	• overbank flooding absent		0	0	0	0	0	0
	• return interval of >5 yrs		0	0	1	0	1	1
	• return interval of 2-5 yrs		0	0	2	0	2	2
	• return interval of 1-2 yrs		0	0	3	0	3	3
• Vegetation Density/Dominance	• high/very high		3	3	3	3	3	3
	• moderate		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0

(continued)

2.9.3 Storm and Flood-Water Storage (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
• Dead Woody Material	• abundant		3	3	3	3	3	3
	• moderately abundant		2	2	2	2	2	2
	• sparse		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
			—	—	—	—	—	—
		Total Score:	15	13				
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score					
			27	21	21	12	24	30
		Index Range:	0.15-1.0	0.19-1.0	0.09-1.0	0-1.0	0.12-1.0	0.13-1.0

15 = 0.555
13 0.62

2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

VARIABLES	CONDITIONS	WEIGHTS
Indicators of Disfunction	no outlet	0
Direct Indicators of Function	none	

Primary Variables

Storm and Flood Water Storage Function Model Score			Modification of Groundwater Discharge Function Model Score			
High*	3	x	High	3	=	9
Mod	2	x	High	3	=	6
Low	1	x	High	3	=	3
High	3	x	Mod	2	=	6
Mod	2	x	Mod	2	=	4
Low	1	x	Mod	2	=	2
High	3	x	Low	1	=	3
Mod	2	x	Low	1	=	2
Low	1	x	Low	1	=	1

Total Score:

Model Range: 1-9

Functional Capacity Index: Total Score / 9

Index Range: 0.11-1.0

6/9 = 0.67
4/9 = 0.44

*High = FCI of 0.67-1.0, Mod = FCI of 0.34-0.66, Low = FCI of 0-0.33 for the Storm and Flood Water Storage and Modification of Ground Water Discharge Function Model Scores.

2.9.5 Modification of Water Quality

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	evidence of sedimentation		18	15	12	12	12	18
Primary Variables								
• Wetland Land Use	• low intensity		3	3	3	3	3	3
	• moderate intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• restricted outflow		3	0	0	0	0	3
	• no outlet		2	0	0	0	0	2
	• unrestricted outflow		1	0	0	0	0	1
• Inlet/Outlet Type	• no outlet		3	3	0	0	0	3
	• intermittent outlet		2	2	0	0	0	2
	• perennial outlet		1	1	0	0	0	1
• Dominant Wetland Type	• forested wetland		3	3	3	3	3	3
	• scrub-shrub		2	2	2	2	2	2
	• emergent wetland		2	2	2	2	2	2
	• aquatic bed		1	0	0	0	0	0
	• no vegetation		0	0	0	0	0	0
• Cover Distribution	• forming a continuous cover		3	3	3	3	3	3
	• growing in small scattered patches		2	2	2	2	2	2
	• one or more large patches		1	1	1	1	1	1
	• solitary scattered stems		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• histosol or clayey soil		3	3	3	3	3	3
	• silty soil		2	2	2	0	2	2
	• sandy or gravelly soil		1	1	1	0	1	1
		Total Score:						
		Model Range:	4-18	3-15	2-12	1-12	2-12	4-18
		Functional Capacity Index:	Total Score / 18	/ 15	/ 12	/ 12	/ 12	/ 18
		Index Range:	0.22-1.0	0.20-1.0	0.16-1.0	0.8-1.0	0.16-1.0	0.22-1.0

2.9.6 Export of Detritus

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	no outlet		0	0		0		0
Direct Indicators of Function	none							
Primary Variables								
• Wetland Land Use	• moderate intensity		3	3	3	3	3	3
	• low intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• unrestricted outflow		3	0	0	0	0	3
	• restricted outflow		1	0	0	0	0	1
• Inlet/Outlet Class	• perennial outlet		3	3	0	0	0	3
	• intermittent outlet		1	1	0	0	0	1
• Wetland Water Regime	• drier: seasonally flooded, temporarily flooded, saturated		3	3	3	0	3	3
	• wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	1	1	1
• Vegetation Density/Dominance	• high/very high		3	3	3	3	3	3
	• medium		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• mineral hydric soil		3	3	3	3	3	3
	• histosol		1	1	1	1	1	1
		Total Score:	13	12	—	—	—	—
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index:	Total Score 18	15	12	10	12	18
		Index Range:	0.27-1.0	0.26-1.0	0.25-1.0	0.20-1.0	0.25-1.0	0.27-1.0

13 = 0,72
12 = 0,80

2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation

(This model is identical for all HGM types)

VARIABLES		CONDITIONS	WEIGHTS
Indicators of Disfunction		no vegetation	0
Direct Indicators of Function		none	
Primary Variables			
•	Plant Species Diversity	• high diversity • medium diversity • low diversity	5 3 1
•	Vegetation Density/Dominance	• high/very high • medium • sparse/low	5 3 1
•	Wetland Juxtaposition	• connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated	5 3 1 0
		Total Score:	15 13
		Model Range:	2-15
		Functional Capacity Index: = Total Score / 15	15 = 1.0 13 = 0.87
		Index Range:	0.13-1.0

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna

(This model is identical for all HGM types except Slope Wetlands for which "Interspersion of Vegetation Cover and Open Water" does not apply))

VARIABLES	CONDITIONS	WEIGHTS
Direct Indicators of Disfunction	none	
Direct Indicators of Function	none	
Primary Variables		
• Watershed Land Use	• low intensity (0-25% urbanized)	3
	• moderate intensity (25-50% urbanized)	2
	• high intensity (>50% urbanized)	1
• Wetland Land Use	• low intensity	3
	• moderate intensity	2
	• high intensity	1
• Wetland Water Regime	• wet: permanently flooded, intermittently exposed, semipermanently flooded	3
	• drier: seasonally flooded, temporarily flooded, saturated	1
• Microrelief of Wetland Surface	• pronounced	3
	• well developed	2
	• poorly developed	1
	• absent	0
• Number of Wetland types and Relative Proportions	• 5 or more types	3
	• 3-4 types	2
	• 1-2 types	1
	• no vegetation	0
	• even distribution	3
	• moderately even distribution	2
	• highly uneven distribution	1
	• no vegetation	0
• Vegetation Interspersion	• high interspersion	3
	• moderate interspersion	2
	• low interspersion	1
	• no vegetation	0
• Number of Layers and Percent Cover	• 5 or more layers	3
	• 3-4 layers	2
	• 1-2 layers	1
	• no vegetation	0
	• layers well developed (>50% cover)	3
	• layers with moderate cover (26-50% cover)	2
	• layers poorly distinguishable (<25% cover)	1
	• no vegetation	0

(continued)

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

VARIABLES	CONDITIONS	WEIGHTS
• Interspersion of Vegetation Cover and Open Water	• 26-75% scattered or peripheral	3
	• >75% scattered or peripheral	2
	• <25% scattered or peripheral	1
	• 100% cover or open water	1
	• no vegetation	0
• Size	• large (>100 acres)	3
	• medium (10-100 acres)	2
	• small (<10 acres)	1
• Wetland Juxtaposition	• other wetlands within 400 m and connected above or below	3
	• other wetlands within 400 m but not connected	1
	• wetland isolated	0

Slope Wetlands:

Model Range: 4-33

Functional Capacity Index = Total Score / 33

Index Range: 0.12-1.0

All Other HGM Types:

Total Score:

Model Range: 4-36

Functional Capacity Index = Total Score / 36

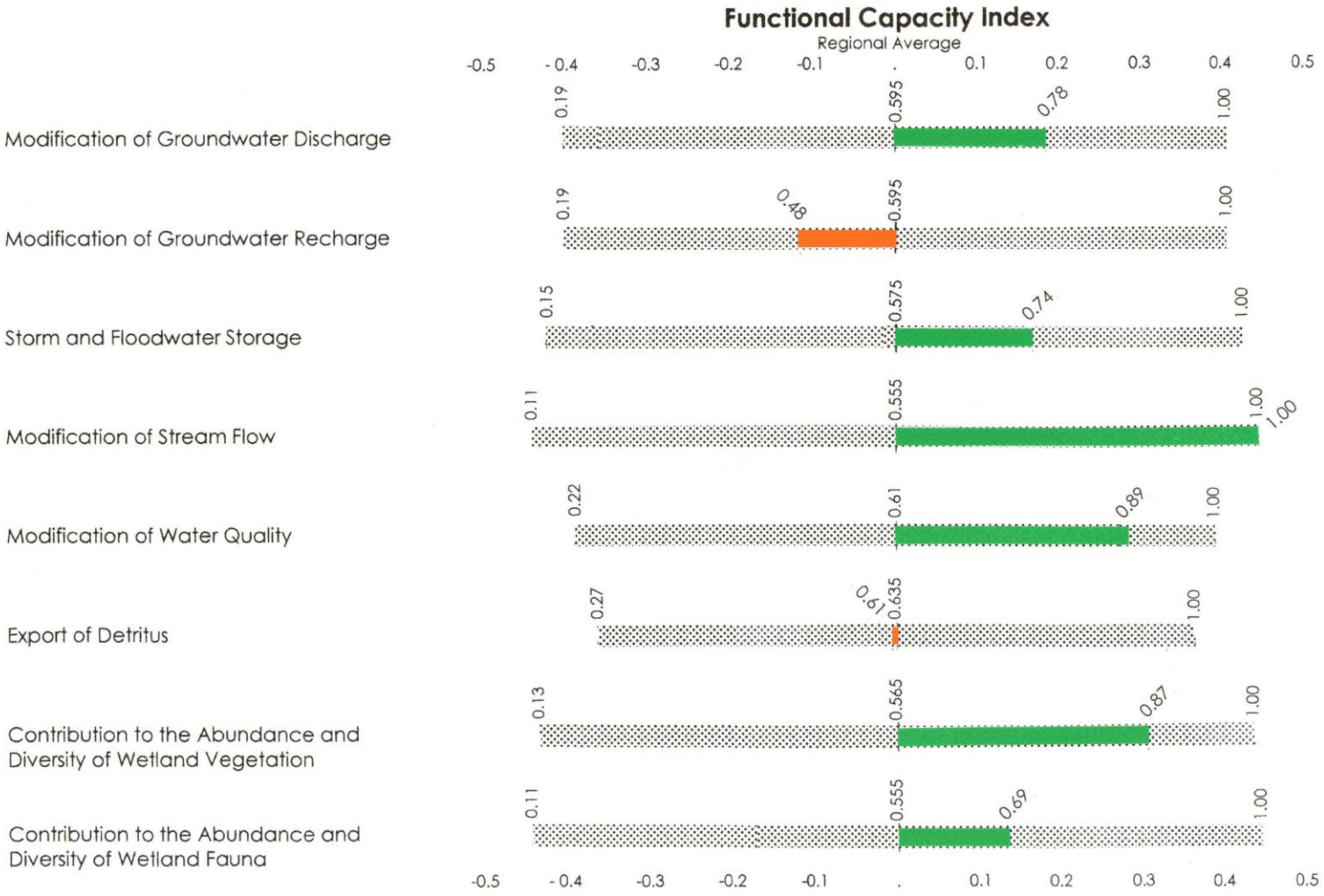
Index Range 0.11-1.0

Hunter Brook **Sloping Wetland** **Study Area: HB-2**

3.6 ac. - 26% of total 13.9 ac. wetlands

Hunter Brook **Depression Wetland** **Study Area: HB-2**

10.0 ac. - 72% of total 13.9 ac. wetlands



WETLAND INVENTORY DATA

HB-2 Depressional/Slope

Project Number: _____ Date: MAY 20, 2004

Wetland Number: HB-2

Aerial Photo Numbers: _____

USGS Quadrangle: Mohegan Lake

Field Investigators: _____

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	72% / 9.96 ac	Depressional
	26% / 3.58 ac	Slope
	____	Flat
	____	Extensive Peatland
	1% / 0.19 ac	Lacustrine Fringe
	0.7% / 0.10 ac	Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	____
Deciduous	
Broad-leaved	90% / 13.82 ac
Needle-leaved	____
Scrub Shrub	
Evergreen	
Broad-leaved	____
Needle-leaved	____
Deciduous	
Broad-leaved	____
Needle-leaved	____
Emergent Wetland	
Persistent	____
Non-persistent	____
Aquatic Bed	10% / 1.95 ac
Total	100% / 15.27 ac

SOIL TYPES

Histosol
- Fibric ☐
- Hemic ☐
- Sapric ☑

Mineral Hydric Soil
- Gravelly ☐
- Sandy ☑
- Silty ☐
- Clayey ☐

GEOLOGY

Surficial:

Bedrock:

Comments: _____

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
Withrod Viburnum													
Red Maple													
Highbush Blueberry													
Eastern Cottonwood													
Smooth Alder													
American Elm													
Phragmites													
Tussock Sedge													
Summersweet Clethera													
Arrowwood Vibernum													
Winterberry													
Pussy Willow													
Skunk Cabbage													
Yellow Avens													
Sphagnum Moss													
Spicebush													
Green Ash													
White Ash													

OW Obligate Wetland
FW Facultative Wetland
F Facultative
FU Facultative Upland
OU Obligate Upland
DOM Dominant

COM Common
OCC Occasional
C Canopy
S Sapling
TS Tall Shrub
LS Low Shrub
H Herb

PRE-EMPTIVE STATUS

- ____ Public ownership
- ____ Wildlife management area
- ____ Fisheries management area
- ____ Designated State or Federal protected wetland
- ____ Documented habitat for state or federal listed species
- ____ Regionally scarce wetland category
- ____ Historic/archaeologic area

WETLAND INVENTORY DATA (continued)

PART 2 - CHARACTERIZATION of MODEL VARIABLES

LANDSCAPE VARIABLES

Size:
- [ ] Small (<10 acres)
- [ ] Medium (10-100 acres)
- [ ] Large (>100 acres)

Wetland Juxtaposition:
- [ ] Connected Upstream and Downstream
- [ ] Only Connected Above
- [ ] Only Connected Below
- [ ] Other Wetlands Nearby but not Connected
- [ ] Wetland Isolated

Fire Occurence and Frequency:
- [ ] Natural; Predictable Frequency
- [ ] Natural; Sporadic Frequency
- [ ] Human-caused; Predictable
- [ ] Human-caused; Sporadic
- [ ] Rare Event
- [ ] No Evidence

Regional Scarcity:
- [ ] Not Scarce (>5% of total wetland area of region)
- [ ] Scarce (<5% of total wetland area of region)

Watershed Land Use:
- [ ] > 50% urbanized
- [ ] 25-50% urbanized
- [ ] 0-25% urbanized

HYDROLOGIC VARIABLES

Surface Water Level Fluctuation of Wetland:
- [ ] High Fluctuation
- [ ] Low Fluctuation
- [ ] Never Inundated

Frequency of Overbank Flooding:
- [ ] Return Interval > 5 yrs.
- [ ] Return Interval 2-5 yrs.
- [ ] Return Interval 1-2 yrs.
- [ ] No Overbank Flooding

pH:
- [ ] Acid <5.5
- [ ] Circumneutral 5.5-7.4
- [ ] Alkaline >7.4
- [ ] No Water

Surficial Geologic Deposit Under Wetland
- [ ] Low Permeability Stratified Deposits
- [ ] High Permeability Stratified Deposits
- [ ] Glacial Till

Wetland Land Use:
- [ ] High Intensity (ie. agriculture)
- [ ] Moderate Intensity (ie. forestry)
- [ ] Low Intensity (ie. open space)

Wetland Water Regime:
- [ ] Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded
- [ ] Drier: Seasonally Flooded, Temporarily Flooded, Saturated

Basin Topographic Gradient:
- [ ] High Gradient >2%
- [ ] Low Gradient <2%

Degree of Outlet Restriction:
- [ ] Restricted Outflow
- [ ] Unrestricted Outflow
- [ ] No Outflow

Ratio of Wetland Area to Watershed Area:
- [ ] High >10%
- [ ] Low <10%

Microrelief of Wetland Surface:
- [ ] Pronounced >45 cm
- [ ] Well Developed 15-45 cm
- [ ] Poorly Developed <15 cm
- [ ] Absent

Inlet/Outlet Class:
- [ ] No Inlet/No Outlet
- [ ] No Inlet/Intermittent Outlet
- [ ] No Inlet/Perennial Outlet
- [ ] Intermittent Inlet/No Outlet
- [ ] Intermittent Inlet/Intermittent Outlet
- [ ] Intermittent Outlet/Perennial Outlet
- [ ] Perennial Inlet/No Outlet
- [ ] Perennial Inlet/ Intermittent Outlet
- [ ] Perennial Inlet/Perennial Outlet

Nested Piezometer Data:
- [ ] Recharge
- [ ] Discharge
- [ ] Horizontal Flow
- [ ] Not Available

Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:
- [ ] Piez. Surface Above or at Substrate elev.
- [ ] Piez. Surface below Substrate elev.
- [ ] Not Available

Evidence of Sedimentation:
- [ ] No Evidence Observed
- [ ] Sediment Observed on Wetland Substrate
- [ ] Fluvaquent Soils

Evidence of Seeps and Springs:
- [ ] No Seeps or Springs
- [ ] Seeps Observed
- [ ] Perennial Spring
- [ ] Intermittent Spring

SOIL VARIABLES

Soil Lacking:
- [ ]

Histosol:
- [ ] Fibric
- [ ] Hemic
- [ ] Sapric

Mineral Hydric Soil:
- [ ] Gravelly
- [ ] Sandy
- [ ] Silty
- [ ] Clayey

VEGETATION VARIABLES

Vegetation Lacking:
- [ ]

Dominant Wetland Type:
- [ ] Forested - Evergreen - Needle-leaved
- [ ] Forested - Deciduous - Broad-leaved
- [ ] Forested - Deciduous - Needle-leaved
- [ ] Scrub Shrub - Evergreen - Broad-leaved
- [ ] Scrub Shrub - Evergreen - Needle-leaved
- [ ] Scrub Shrub - Deciduous - Broad-leaved
- [ ] Scrub Shrub - Deciduous - Needle-leaved
- [ ] Emergent - Persistent
- [ ] Emergent - Non-persistent
- [ ] Aquatic Bed

Number of Types & Relative Proportions:

Number of Types	Evenness of Distribution
[ ] Actual #	[ ] Even Distribution
[ ] 5	[ ] Moderately Even Distribution
[ ] 4	[ ] Highly Uneven Distribution
[ ] 3	
[ ] 2	
[ ] 1	

Vegetation Density/Dominance:
- [ ] Sparse (0-20%)
- [ ] Low Density (20-40%)
- [ ] Medium Density (40-60%)
- [ ] High Density (60-80%)
- [ ] Very High Density (80-100%)

Vegetative Interspersion:
- [ ] High (small groupings, diverse and interspersed)
- [ ] Moderate (broken irregular rings)
- [ ] Low (large patches, concentric rings)

Number of Layers and Percent Cover:

Number of Layers	% Cover
[ ] 6 or > (actual #)	1. submergents:
[ ] 5	2. floating:
[ ] 4	3. moss-lichen:
[ ] 3	4. short herb:
[ ] 2	5. tall herb:
[ ] 1	6. dwarf shrub:
	7. short shrub:
	8. tall shrub:
	9. sapling:
	10. tree:

Plant Species Diversity:
- [ ] Low 1-2 plots sampled
- [ ] Medium 3-4 plots sampled
- [ ] High 5 or more plots sampled

Proportion of Animal Food Plants:
- [ ] Low (5-25% cover)
- [ ] Medium (25-50% cover)
- [ ] High (>50% cover)

Cover Distribution:
- [ ] Continuous Cover
- [ ] Small Scattered Patches
- [ ] 1 or More Large Patches; Parts of Site Open
- [ ] Solitary, Scattered Stems

Dead Woody Material:
- [ ] Abundant (>50 of wetland surface)
- [ ] Moderately Abundant (25-50% of surface)
- [ ] Low Abundance (0-25% of surface)

Interspersion of Cover and Open Water:
- [ ] 26-75% Scattered or Peripheral
- [ ] >75% Scattered or Peripheral
- [ ] <25% Scattered or Peripheral
- [ ] 100% Cover or Open Water

Stream Sinuosity:
- [ ] Highly Convoluted (index 1.50 or >)
- [ ] Moderately Convoluted (index 1.25-1.50)
- [ ] Straight/Slightly Irreg. (index) 1.10-1.25

Presence of Islands:
- [ ] Several to Many
- [ ] One or Few
- [ ] Absent

2.9.1 Modification of Ground Water Discharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
Indicators of Disfunction					
• Inlet/Outlet Class	• perennial inlet/no outlet	0	0	0	0
• Nested Piezometer Data	• recharge condition	0	0	0	0
• Relationship to Regional Piezo-metric Surface	• wetland substrate elevation above piezometric surface	0	0	0	0
Direct Indicators of Function					
• Presence of Springs and Seeps	• evidence of perennial seeps or springs	18	15	15	18
• Nested Piezometer Data	• discharge condition	18	15	15	18
• Relationship to Regional Peizometeric Surface	• wetland substrate elevation below piezometric surface	18	15	15	18
• Inlet/Outlet Class	• no inlet/perennial outlet	18	15	15	18
Primary Variables					
• Microrelief of Wetland Surface	• pronounced	3	3	3	3
	• well developed	2	2	2	2
	• poorly developed	1	1	1	1
	• absent	0	0	0	0
• Inlet/Outlet Class	• perennial inlet/perennial outlet	3	3	0	3
	• intermittent inlet/perennial outlet	2	2	0	2
	• all other classes	0	0	0	0
• pH	• alkaline	3	3	3	3
	• circumneutral	2	2	2	2
	• acid	0	0	0	0
	• no water present	0	0	0	0
• Surficial Geologic Deposit Under Wetland	• high permeability stratified deposits	3	3	3	3
	• low permeability stratified deposits	2	2	2	2
	• glacial till	1	1	1	1
• Wetland Water Regime	• wet; permanently flooded, intermittently exposed, semipermanently flooded	3	0	3	3
	• drier; seasonally flooded, temporarily flooded, saturated	1	0	1	1

(continued)

2.9.1 Modification of Ground Water Discharge (Continued)

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
• Soil Type	• histosol	(3)	3	3	3
	• mineral hydric soil	1	1	1	1
		–	–	–	–
	Total Score:	14			
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score / 18 = 0.78	15 / 15 = 1.0	— / 15	— / 18
	Index Range:	0.19-1.0 (0.78)	0.16-1.0 (1.0)	0.22-1.0	0.19-1.0

Note: This model can be applied to both year long and seasonal discharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a discharge mode for roughly half the year.

2.9.2 Modification of Ground Water Recharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	L	EP	R	F
Indicators of Disfunction						
• Inlet/Outlet Class	• no inlet/perennial outlet; intermittent inlet/perennial outlet	(0)				0
• Nested Piezometer Data	• discharge condition	0	0	0	0	0
• Relationship to Regional Piezometric Surface	• wetland substrate elevation above or at piezometric surface	0	0	0	0	0
• Presence of Seeps and Springs	• presence of seeps or springs	0	0	0	0	0

(continued)

2.9.2 Modification of Ground Water Recharge (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	L	EP	R	F
Direct Indicators of Function							
• Inlet/Outlet Class	•	perennial inlet/no outlet	21				21
• Nested Piezometer Data	•	recharge condition	21				21
• Relationship to Regional Peizometeric Surface	•	wetland substrate elevation below piezometric surface	21				21
Primary Variables							
• Microrelief of Wetland Surface	•	Poorly Developed	3	3	1	3	3
	•	Absent	3	3	1	3	3
	•	Well Developed	2	2	2	2	2
	•	Pronounced	(1)	1	3	1	1
• Inlet/Outlet Class	•	Perennial Inlet/Intermittent Outlet	3	0	0	0	3
	•	All Other Classes	(0)	0	0	0	0
• pH	•	Acid	3	3	3	3	3
	•	Circumneutral	(2)	2	2	2	2
	•	Alkaline	1	1	1	1	1
	•	No water present	0	0	0	0	0
• Surficial Geologic Deposit Under Wetland	•	Glacial Till	(3)	1	1	1	3
	•	Low Permeability Stratified Deposits	2	2	2	2	2
	•	High Permeability Stratified Deposits	1	3	3	3	1
• Surface Water Level Fluctuation of the Wetland	•	High Fluctuation	3	3	0	3	3
	•	Low Fluctuation	(2)	2	0	2	2
	•	Never Inundated	1	1	0	1	1
• Wetland Water Regime	•	Drier: Seasonally Flooded, Temporarily Flooded, Saturated	3	3	0	3	3
	•	Wet: Permanently Flooded, Intermittently Exposed, Semipermanently Flooded	(1)	1	0	1	1
			—	—	—	—	—
• Soil Type	•	Gravelly or Sandy Mineral Hydric	3	3	0	3	3
	•	Silty or Clayey Mineral Hydric	2	2	0	2	2
	•	Sapric Histosol	(1)	1	0	1	1
	•	Fibric or Hemic Histosol	0	0	3	0	0
		Total Score:	10				
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index: $\frac{10}{21} = 0.48$	Total Score / 21	/ 18	/ 12	/ 18	/ 21
		Index Range: 0.48	0.19-1.0	0.22-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model should be applied to both year long and seasonal recharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a recharge mode for roughly half the year.

2.9.3 Storm and Flood-Water Storage

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	no outlet		27	21				30
Primary Variables								
• Inlet/Outlet Class	• perennial inlet/intermittent outlet		3	3	0	0	0	3
	• intermittent inlet/intermittent outlet		2	2	0	0	0	2
	• no inlet/intermittent outlet		1	1	0	0	0	1
	• non inlet/perennial outlet		1	1	0	0	0	1
	• intermittent inlet/perennial outlet		1	1	0	0	0	1
	• perennial inlet/perennial outlet		1	1	0	0	0	1
• Degree of Outlet Restriction	• restricted		3	0	0	0	0	3
	• unrestricted		0	0	0	0	0	0
• Basin Topographic Gradient	• low gradient		3	3	0	3	3	3
	• high gradient		1	1	0	0	1	1
• Wetland Water Regime	• Drier: seasonally flooded, temporarily flooded, saturated		3	3	3	0	3	3
	• Wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	0	1	1
• Surface Water Level Fluctuation of the Wetland	• high fluctuation		3	0	3	0	3	3
	• low fluctuation		2	0	2	0	2	2
	• never inundated		0	0	0	0	0	0
• Ratio of Wetland Area to Watershed Area	• large		3	3	3	0	3	3
	• small		1	1	1	0	1	1
• Microrelief of Wetland Surface	• pronounced		3	3	3	3	3	3
	• well developed		2	2	2	2	2	2
	• poorly developed		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
• Frequency of Overbank Flooding	• overbank flooding absent		0	0	0	0	0	0
	• return interval of >5 yrs		0	0	1	0	1	1
	• return interval of 2-5 yrs		0	0	2	0	2	2
	• return interval of 1-2 yrs		0	0	3	0	3	3
• Vegetation Density/Dominance	• high/very high		3	3	3	3	3	3
	• moderate		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0

(continued)

2.9.3 Storm and Flood-Water Storage (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
• Dead Woody Material	• abundant		(3)	3	3	3	3	3
	• moderately abundant		2	2	2	2	2	2
	• sparse		1	(1)	1	1	1	1
	• absent		0	0	0	0	0	0
		Total Score:	20	12	—	—	—	—
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score / 27 = 20/27 = 0.74	12/21 = 0.57	— / 21	— / 12	— / 24	— / 30
		Index Range:	0.15-1.0	0.19-1.0	0.09-1.0	0-1.0	0.12-1.0	0.13-1.0

2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

VARIABLES	CONDITIONS	WEIGHTS
Indicators of Disfunction	no outlet	0
Direct Indicators of Function	none	

Primary Variables

Storm and Flood Water Storage Function Model Score			Modification of Groundwater Discharge Function Model Score			
(High)	3	x	(High)	3	=	(9)
Mod	2	x	High	3	=	6
Low	1	x	High	3	=	3
High	3	x	Mod	2	=	6
Mod	2	x	Mod	2	=	4
Low	1	x	Mod	2	=	2
High	3	x	Low	1	=	3
Mod	2	x	Low	1	=	2
Low	1	x	Low	1	=	1

Total Score: 9/6

Model Range: 1-9

Functional Capacity Index: Total Score / 9 = 9/9 = 1.0 / 6/9 = 0.67

Index Range: 0.11-1.0

*High = FCI of 0.67-1.0, Mod = FCI of 0.34-0.66, Low = FCI of 0-0.33 for the Storm and Flood Water Storage and Modification of Ground Water Discharge Function Model Scores.

2.9.5 Modification of Water Quality

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	evidence of sedimentation		18	15	12	12	12	18
Primary Variables								
• Wetland Land Use	• low intensity		(3)	(3)	3	3	3	3
	• moderate intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• restricted outflow		(3)	0	0	0	0	3
	• no outlet		2	0	0	0	0	2
	• unrestricted outflow		1	0	0	0	0	1
• Inlet/Outlet Type	• no outlet		3	3	0	0	0	3
	• intermittent outlet		2	2	0	0	0	2
	• perennial outlet		(1)	(1)	0	0	0	1
• Dominant Wetland Type	• forested wetland		(3)	(3)	3	3	3	3
	• scrub-shrub		2	2	2	2	2	2
	• emergent wetland		2	2	2	2	2	2
	• aquatic bed		1	0	0	0	0	0
	• no vegetation		0	0	0	0	0	0
• Cover Distribution	• forming a continuous cover		(3)	(3)	3	3	3	3
	• growing in small scattered patches		2	2	2	2	2	2
	• one or more large patches		1	1	1	1	1	1
	• solitary scattered stems		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• histosol or clayey soil		(3)	3	3	3	3	3
	• silty soil		2	2	2	0	2	2
	• sandy or gravelly soil		1	(1)	1	0	1	1
			16	11	—	—	—	—
	Total Score:							
	Model Range:		4-18	3-15	2-12	1-12	2-12	4-18
	Functional Capacity Index:		Total Score:	11 = 0.73				
	16/18 =		18	15	12	12	12	18
	Index Range:		0.22-1.0	0.20-1.0	0.16-1.0	0.8-1.0	0.16-1.0	0.22-1.0
	0.89			0.73				

2.9.6 Export of Detritus

VARIABLES	CONDITIONS	HGM TYPES:	D	S	WEIGHTS L	EP	R	F
Indicators of disfunction	no outlet		0	0		0		0
Direct Indicators of Function	none							
Primary Variables								
• Wetland Land Use	• moderate intensity		3	3	3	3	3	3
	• low intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• unrestricted outflow		3	0	0	0	0	3
	• restricted outflow		1	0	0	0	0	1
• Inlet/Outlet Class	• perennial outlet		3	3	0	0	0	3
	• intermittent outlet		1	1	0	0	0	1
• Wetland Water Regime	• drier: seasonally flooded, temporarily flooded, saturated		3	3	3	0	3	3
	• wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	1	1	1
• Vegetation Density/Dominance	• high/very high		3	3	3	3	3	3
	• medium		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• mineral hydric soil		3	3	3	3	3	3
	• histosol		1	1	1	1	1	1
		Total Score:	11	12	—	—	—	—
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index:	Total Score					
		11/18 = 0.61	18	15	12	10	12	18
		12/15 = 0.80						
		Index Range:	0.27-1.0	0.26-1.0	0.25-1.0	0.20-1.0	0.25-1.0	0.27-1.0
		0.61		0.80				

2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation

(This model is identical for all HGM types)

VARIABLES		CONDITIONS	WEIGHTS
Indicators of Disfunction		no vegetation	0
Direct Indicators of Function		none	
Primary Variables			
•	Plant Species Diversity	• high diversity • medium diversity • low diversity	5 (3) 1
•	Vegetation Density/Dominance	• high/very high • medium • sparse/low	(5) 3 1
•	Wetland Juxtaposition	• connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated	(5) 3 1 0
		Total Score:	13
		Model Range:	2-15
		Functional Capacity Index: = Total Score / 15	$= \frac{13}{15} = 0.87$
		Index Range:	0.13-1.0

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna

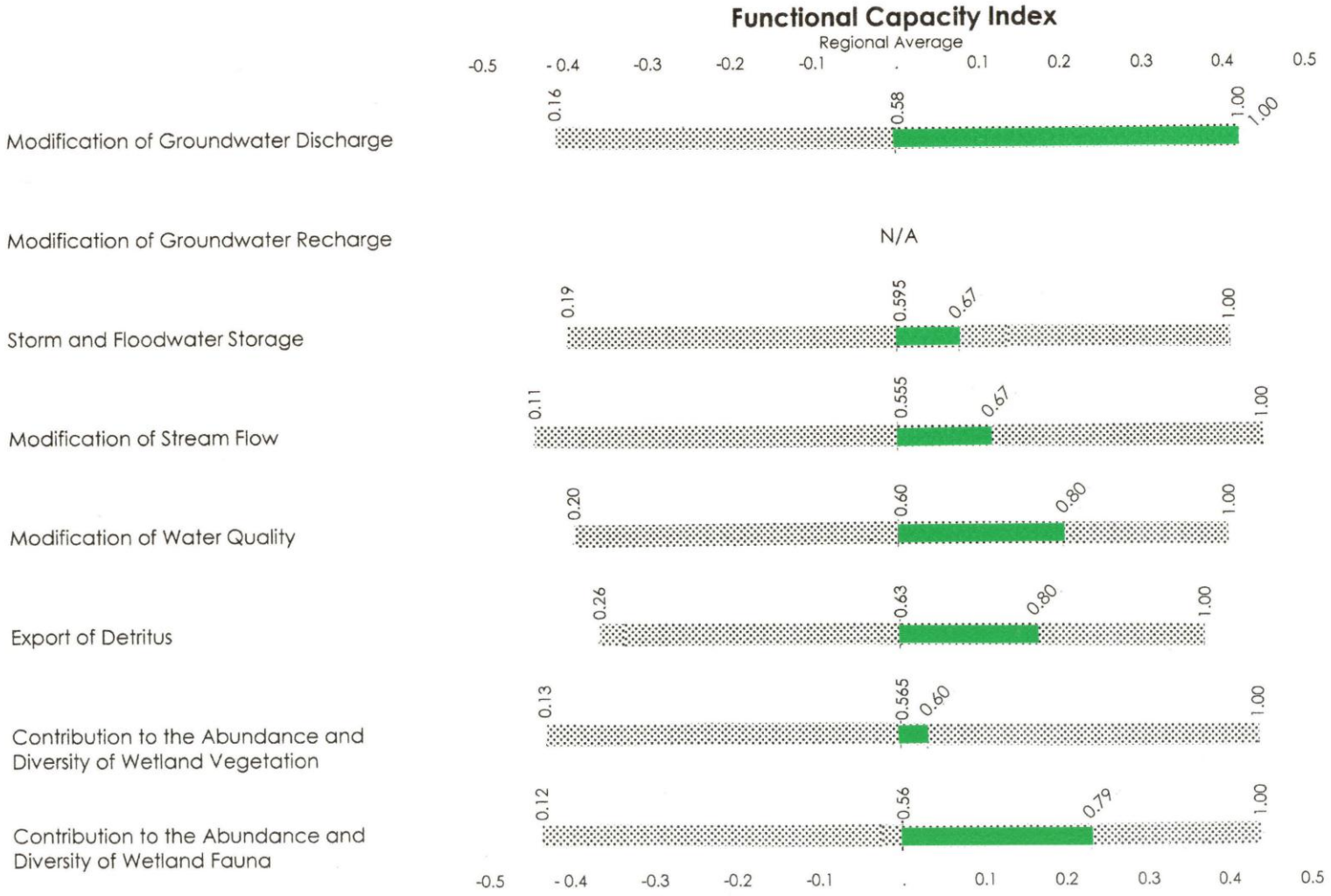
(This model is identical for all HGM types except Slope Wetlands for which "Interspersion of Vegetation Cover and Open Water" does not apply))

VARIABLES	CONDITIONS	WEIGHTS
Direct Indicators of Disfunction	none	
Direct Indicators of Function	none	
Primary Variables		
• Watershed Land Use	• low intensity (0-25% urbanized)	3
	• moderate intensity (25-50% urbanized)	2
	• high intensity (>50% urbanized)	1
• Wetland Land Use	• low intensity	3
	• moderate intensity	2
	• high intensity	1
• Wetland Water Regime	• wet: permanently flooded, intermittently exposed, semipermanently flooded	3
	• drier: seasonally flooded, temporarily flooded, saturated	1
• Microrelief of Wetland Surface	• pronounced	3
	• well developed	2
	• poorly developed	1
	• absent	0
• Number of Wetland types and Relative Proportions	• 5 or more types	3
	• 3-4 types	2
	• 1-2 types	1
	• no vegetation	0
	• even distribution	3
	• moderately even distribution	2
	• highly uneven distribution	1
	• no vegetation	0
• Vegetation Interspersion	• high interspersion	3
	• moderate interspersion	2
	• low interspersion	1
	• no vegetation	0
• Number of Layers and Percent Cover	• 5 or more layers	3
	• 3-4 layers	2
	• 1-2 layers	1
	• no vegetation	0
	• layers well developed (>50% cover)	3
	• layers with moderate cover (26-50% cover)	2
	• layers poorly distinguishable (<25% cover)	1
	• no vegetation	0

(continued)

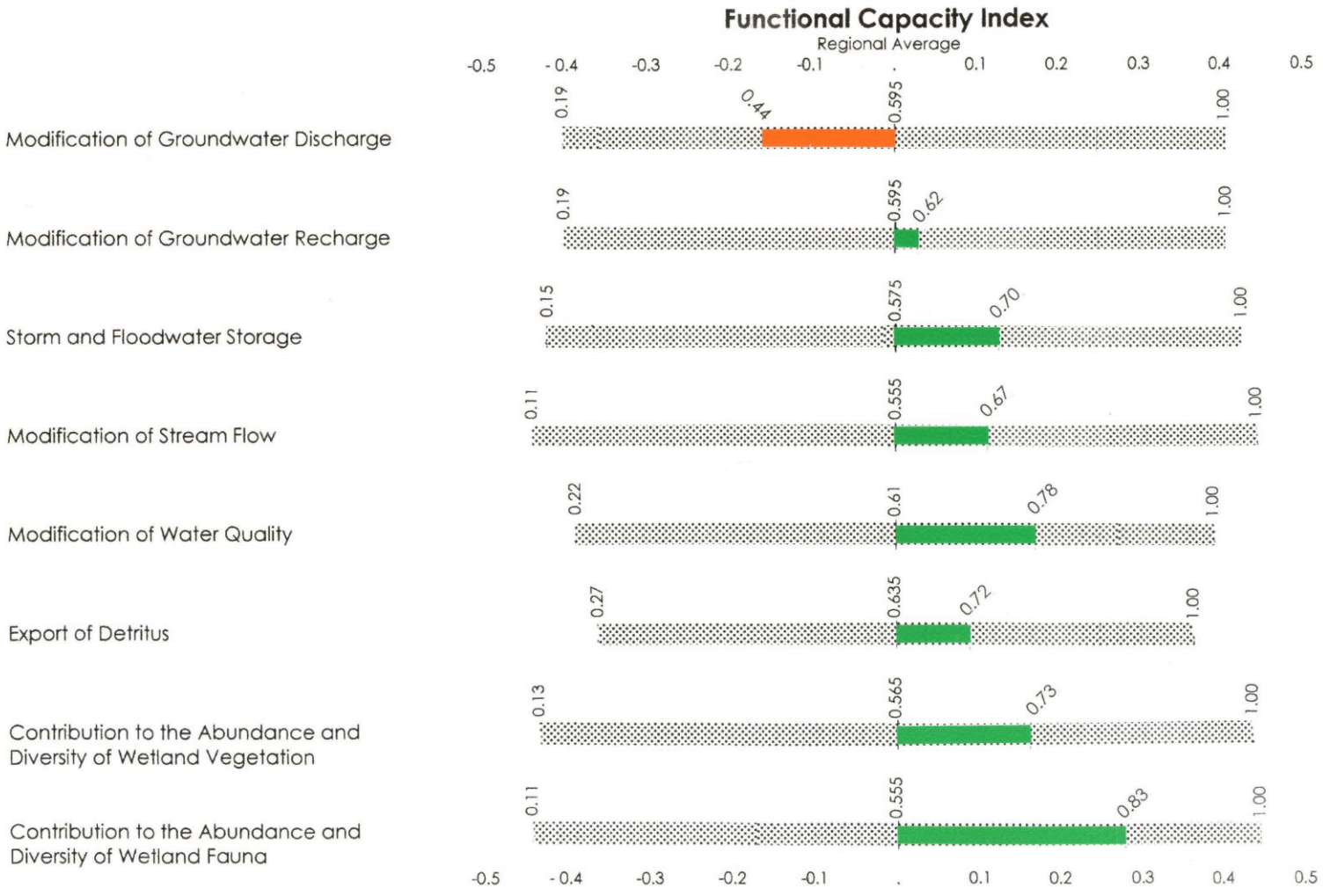
Hunter Brook **Sloping Wetland** **Study Area: HB-3**

2.0 ac. - 35% of total 5.8 ac. wetlands



Hunter Brook **Depression Wetland** **Study Area: HB-3**

3.7 ac. - 65% of total 5.8 ac. wetlands



WETLAND INVENTORY DATA

DEPRESSION 3.72 ac (65%)
SLOPE 2.03 ac (35%)

Project Number: YORKTOWN
Date:
Wetland Number: HB-3
Aerial Photo Numbers:
USGS Quadrangle: MOHEGAN LAKE
Field Investigators: BD

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	65%	Depressional
		Slope
	35%	Flat
		Extensive Peatland
		Lacustrine Fringe
		Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	
Deciduous	
Broad-leaved	100 80
Needle-leaved	
Scrub Shrub	
Evergreen	
Broad-leaved	
Needle-leaved	
Deciduous	
Broad-leaved	20
Needle-leaved	
Emergent Wetland	
Persistent	
Non-persistent	
Aquatic Bed	
Total	100 100

SOIL TYPES

Histosol
- Fibric ☐
- Hemic ☐
- Sapric ☐

Mineral Hydric Soil
- Gravelly ☐
- Sandy ☐
- Silty ☐
- Clayey ☐

GEOLOGY

Surficial:

Bedrock:

Comments: VERY SMALL WATERSHED DEPRESSION EITHER IN BEDROCK OR DENSE TILL

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
SPHAGNUM MOSS						■							■
MOSS SPP.						■							■
JEWELWEED						■							■
WINTERBERRY							■				■		
TUSSOCK SEDGE						■							■
SWAMP AZALEA								■			■		
SKUNK CABBAGE							■						■
SUMMERSWEET CLETHERA							■				■		
ARROWWOOD VIBURNUM							■				■		
SILKY DOGWOOD							■				■		
AMERICAN ELM								■	■				
GREEN ASH							■		■				
WHITE ASH								■	■				
SHAGBARK HICKORY									■				
GREEN BRIAR								■					■
RED MAPLE							■		■				
SENSITIVE FERN								■					■
CHRISTMAS FERN								■					■
VIRGINIA CREEPER									■				■
POISON IVY								■					■
SWEET BIRCH								■	■				
HIGHBUSH BLUEBERRY								■					■
ARROWWOOD VIBURNUM							■				■		
HORNBEAM							■				■		
TRILLIUM								■					■
JAPANESE BARBERRY								■					■
FLOWERING DOGWOOD								■					■
LOWBUSH BLUEBERRY								■					■
AMERICAN BEECH								■	■				
WHITE OAK								■	■				

OW	Obligate Wetland	COM	Common
FW	Facultative Wetland	OCC	Occasional
F	Facultative	C	Canopy
FU	Facultative Upland	S	Sapling
OU	Obligate Upland	TS	Tall Shrub
DOM	Dominant	LS	Low Shrub
		H	Herb

PRE-EMPTIVE STATUS

✓ Public ownership	____ Documented habitat for state or federal listed species
____ Wildlife management area	____ Regionally scarce wetland category
____ Fisheries management area	____ Historic/archaeologic area
____ Designated State or Federal protected wetland	

WETLAND INVENTORY DATA (continued)

PART 2 - CHARACTERIZATION of MODEL VARIABLES

LANDSCAPE VARIABLES

Size:
- [ ] Small (<10 acres)
- [ ] Medium (10-100 acres)
- [ ] Large (>100 acres)

Wetland Juxtaposition:
- [ ] Connected Upstream and Downstream
- [ ] Only Connected Above
- [ ] Only Connected Below
- [ ] Other Wetlands Nearby but not Connected
- [ ] Wetland Isolated

Fire Occurence and Frequency:
- [ ] Natural; Predictable Frequency
- [ ] Natural; Sporadic Frequency
- [ ] Human-caused; Predictable
- [ ] Human-caused; Sporadic
- [ ] Rare Event
- [ ] No Evidence

Regional Scarcity:
- [ ] Not Scarce (>5% of total wetland area of region)
- [ ] Scarce (<5% of total wetland area of region)

Watershed Land Use:
- [ ] > 50% urbanized
- [ ] 25-50% urbanized
- [ ] 0-25% urbanized

HYDROLOGIC VARIABLES

Surface Water Level Fluctuation of Wetland:
- [ ] High Fluctuation
- [ ] Low Fluctuation
- [ ] Never Inundated

Frequency of Overbank Flooding:
- [ ] Return Interval > 5 yrs.
- [ ] Return Interval 2-5 yrs.
- [ ] Return Interval 1-2 yrs.
- [ ] No Overbank Flooding

pH:
- [ ] Acid <5.5
- [ ] Circumneutral 5.5-7.4
- [ ] Alkaline >7.4
- [ ] No Water

Surficial Geologic Deposit Under Wetland
- [ ] Low Permeability Stratified Deposits
- [ ] High Permeability Stratified Deposits
- [ ] Glacial Till

Wetland Land Use:
- [ ] High Intensity (ie. agriculture)
- [ ] Moderate Intensity (ie. forestry)
- [ ] Low Intensity (ie. open space)

Wetland Water Regime:
- [ ] Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded
- [ ] Drier: Seasonally Flooded, Temporarily Flooded, Saturated

Basin Topographic Gradient:
- [ ] High Gradient >2%
- [ ] Low Gradient <2%

Degree of Outlet Restriction:
- [ ] Restricted Outflow
- [ ] Unrestricted Outflow
- [ ] No Outflow

Ratio of Wetland Area to Watershed Area:
- [ ] High >10%
- [ ] Low <10%

Microrelief of Wetland Surface:
- [ ] Pronounced >45 cm
- [ ] Well Developed 15-45 cm
- [ ] Poorly Developed <15 cm
- [ ] Absent

Inlet/Outlet Class:
- [ ] No Inlet/No Outlet
- [ ] No Inlet/Intermittent Outlet
- [ ] No Inlet/Perennial Outlet
- [ ] Intermittent Inlet/No Outlet
- [ ] Intermittent Inlet/Intermittent Outlet
- [ ] Intermittent Outlet/Perennial Outlet
- [ ] Perennial Inlet/No Outlet
- [ ] Perennial Inlet/ Intermittent Outlet
- [ ] Perennial Inlet/Perennial Outlet

Nested Piezometer Data:
- [ ] Recharge
- [ ] Discharge
- [ ] Horizontal Flow
- [ ] Not Available

Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:
- [ ] Piez. Surface Above or at Substrate elev.
- [ ] Piez. Surface below Substrate elev.
- [ ] Not Available

Evidence of Sedimentation:
- [ ] No Evidence Observed
- [ ] Sediment Observed on Wetland Substrate
- [ ] Fluvaquent Soils

Evidence of Seeps and Springs:
- [ ] No Seeps or Springs
- [ ] Seeps Observed
- [ ] Perennial Spring
- [ ] Intermittent Spring

SOIL VARIABLES

Soil Lacking:
- [ ]

Histosol:
- [ ] Fibric
- [ ] Hemic
- [ ] Sapric

Mineral Hydric Soil:
- [ ] Gravelly
- [ ] Sandy
- [ ] Silty
- [ ] Clayey

VEGETATION VARIABLES

Vegetation Lacking:
- [ ]

Dominant Wetland Type:
- [ ] Forested - Evergreen - Needle-leaved
- [ ] Forested - Deciduous - Broad-leaved
- [ ] Forested - Deciduous - Needle-leaved
- [ ] Scrub Shrub - Evergreen - Broad-leaved
- [ ] Scrub Shrub - Evergreen - Needle-leaved
- [ ] Scrub Shrub - Deciduous - Broad-leaved
- [ ] Scrub Shrub - Deciduous - Needle-leaved
- [ ] Emergent - Persistent
- [ ] Emergent - Non-persistent
- [ ] Aquatic Bed

Number of Types & Relative Proportions:

Number of Types	Evenness of Distribution
[ ] Actual #	[ ] Even Distribution
[ ] 5	[ ] Moderately Even Distribution
[ ] 4	[ ] Highly Uneven Distribution
[ ] 3	
[ ] 2	
[ ] 1	

Vegetation Density/Dominance:
- [ ] Sparse (0-20%)
- [ ] Low Density (20-40%)
- [ ] Medium Density (40-60%)
- [ ] High Density (60-80%)
- [ ] Very High Density (80-100%)

Vegetative Interspersion:
- [ ] High (small groupings, diverse and interspersed)
- [ ] Moderate (broken irregular rings)
- [ ] Low (large patches, concentric rings)

Number of Layers and Percent Cover:

Number of Layers	% Cover
[ ] 6 or > (actual #)	1. submergents:
[ ] 5	2. floating:
[ ] 4	3. moss-lichen:
[ ] 3	4. short herb:
[ ] 2	5. tall herb:
[ ] 1	6. dwarf shrub:
	7. short shrub:
	8. tall shrub:
	9. sapling:
	10. tree:

Plant Species Diversity:
- [ ] Low 1-2 plots sampled
- [ ] Medium 3-4 plots sampled
- [ ] High 5 or more plots sampled

Proportion of Animal Food Plants:
- [ ] Low (5-25% cover)
- [ ] Medium (25-50% cover)
- [ ] High (>50% cover)

Cover Distribution:
- [ ] Continuous Cover
- [ ] Small Scattered Patches
- [ ] 1 or More Large Patches; Parts of Site Open
- [ ] Solitary, Scattered Stems

Dead Woody Material:
- [ ] Abrundant (>50 of wetland surface)
- [ ] Moderately Abrundant (25-50% of surface)
- [ ] Low Abrundance (0-25% of surface)

Interspersion of Cover and Open Water:
- [ ] 26-75% Scattered or Peripheral
- [ ] >75% Scattered or Peripheral
- [ ] <25% Scattered or Peripheral
- [ ] 100% Cover or Open Water

Stream Sinuosity:
- [ ] Highly Convoluted (index 1.50 or >)
- [ ] Moderately Convoluted (index 1.25-1.50)
- [ ] Straight/Slightly Irreg. (index) 1.10-1.25

Presence of Islands:
- [ ] Several to Many
- [ ] One or Few
- [ ] Absent

HB-3 DEPRESSION 3.72 ac (65%)
SLOPE (SHALLOW) 2.03 ac (35%)

2.9.1 Modification of Ground Water Discharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
Indicators of Disfunction					
• Inlet/Outlet Class	• perennial inlet/no outlet	0	0	0	0
• Nested Piezometer Data	• recharge condition	0	0	0	0
• Relationship to Regional Piezo-metric Surface	• wetland substrate elevation above piezometric surface	0	0	0	0
Direct Indicators of Function					
• Presence of Springs and Seeps	• evidence of perennial seeps or springs	18	15	15	18
• Nested Piezometer Data	• discharge condition	18	15	15	18
• Relationship to Regional Peizometeric Surface	• wetland substrate elevation below piezometric surface	18	15	15	18
• Inlet/Outlet Class	• no inlet/perennial outlet	18	15	15	18
Primary Variables					
• Microrelief of Wetland Surface	• pronounced	3	3	3	3
	• well developed	2	2	2	2
	• poorly developed	1	1	1	1
	• absent	0	0	0	0
• Inlet/Outlet Class	• perennial inlet/perennial outlet	3	3	0	3
	• intermittent inlet/perennial outlet	2	2	0	2
	• all other classes	0	0	0	0
• pH	• alkaline	3	3	3	3
	• circumneutral	2	2	2	2
	• acid	0	0	0	0
	• no water present	0	0	0	0
• Surficial Geologic Deposit Under Wetland	• high permeability stratified deposits	3	3	3	3
	• low permeability stratified deposits	2	2	2	2
	• glacial till	1	1	1	1
• Wetland Water Regime	• wet; permanently flooded, inter-mittently exposed, semipermanently flooded	3	0	3	3
	• drier; seasonally flooded, tempo-rarily flooded, saturated	1	0	1	1

(continued)

2.9.1 Modification of Ground Water Discharge (Continued)

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
• Soil Type	• histosol	3	3	3	3
	• mineral hydric soil	1	1	1	1
		8	–	–	–
	Total Score:				
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score 8 = 0.44	15 = 1.0	—	—
		18	15	15	18
	Index Range:	0.19-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model can be applied to both year long and seasonal discharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a discharge mode for roughly half the year.

2.9.2 Modification of Ground Water Recharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	L	EP	R	F
Indicators of Disfunction						
• Inlet/Outlet Class	• no inlet/perennial outlet; intermittent inlet/perennial outlet	0				0
• Nested Piezometer Data	• discharge condition	0	0	0	0	0
• Relationship to Regional Piezometric Surface	• wetland substrate elevation above or at piezometric surface	0	0	0	0	0
• Presence of Seeps and Springs	• presence of seeps or springs	0	0	0	0	0

(continued)

2.9.2 Modification of Ground Water Recharge (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	L	EP	R	F
Direct Indicators of Function							
• Inlet/Outlet Class	•	perennial inlet/no outlet	21				21
• Nested Piezometer Data	•	recharge condition	21				21
• Relationship to Regional Peizometeric Surface	•	wetland substrate elevation below piezometric surface	21				21
Primary Variables							
• Microrelief of Wetland Surface	•	Poorly Developed	3	3	1	3	3
	•	Absent	3	3	1	3	3
	•	Well Developed	2	2	2	2	2
	•	Pronounced	(1)	1	3	1	1
• Inlet/Outlet Class	•	Perennial Inlet/Intermittent Outlet	3	0	0	0	3
	•	All Other Classes	(0)	0	0	0	0
• pH	•	Acid	3	3	3	3	3
	•	Circumneutral	(2)	2	2	2	2
	•	Alkaline	1	1	1	1	1
	•	No water present	0	0	0	0	0
• Surficial Geologic Deposit Under Wetland	•	Glacial Till	(3)	1	1	1	3
	•	Low Permeability Stratified Deposits	2	2	2	2	2
	•	High Permeability Stratified Deposits	1	3	3	3	1
• Surface Water Level Fluctuation of the Wetland	•	High Fluctuation	3	3	0	3	3
	•	Low Fluctuation	(2)	2	0	2	2
	•	Never Inundated	1	1	0	1	1
• Wetland Water Regime	•	Drier: Seasonally Flooded, Temporarily Flooded, Saturated	(3)	3	0	3	3
	•	Wet: Permanently Flooded, Intermittently Exposed, Semipermanently Flooded	1	1	0	1	1
			—	—	—	—	—
• Soil Type	•	Gravelly or Sandy Mineral Hydric	3	3	0	3	3
	•	Silty or Clayey Mineral Hydric	(2)	2	0	2	2
	•	Sapric Histosol	1	1	0	1	1
	•	Fibric or Hemic Histosol	0	0	3	0	0
		Total Score:	13				
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	13 / 18 = 0.62	/ 12	/ 18	/ 21
		Index Range:	0.19-1.0	0.22-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model should be applied to both year long and seasonal recharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a recharge mode for roughly half the year.

2.9.3 Storm and Flood-Water Storage

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	no outlet		27	21				30
Primary Variables								
• Inlet/Outlet Class	• perennial inlet/intermittent outlet		3	3	0	0	0	3
	• intermittent inlet/intermittent outlet		2	2	0	0	0	2
	• no inlet/intermittent outlet		1	1	0	0	0	1
	• non inlet/perennial outlet		1	1	0	0	0	1
	• intermittent inlet/perennial outlet		1	1	0	0	0	1
	• perennial inlet/perennial outlet		1	1	0	0	0	1
• Degree of Outlet Restriction	• restricted		3	0	0	0	0	3
	• unrestricted		0	0	0	0	0	0
• Basin Topographic Gradient	• low gradient		3	3	0	3	3	3
	• high gradient		1	1	0	0	1	1
• Wetland Water Regime	• Drier: seasonally flooded, temporarily flooded, saturated		3	3	3	0	3	3
	• Wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	0	1	1
• Surface Water Level Fluctuation of the Wetland	• high fluctuation		3	0	3	0	3	3
	• low fluctuation		2	0	2	0	2	2
	• never inundated		0	0	0	0	0	0
• Ratio of Wetland Area to Watershed Area	• large		3	3	3	0	3	3
	• small		1	1	1	0	1	1
• Microrelief of Wetland Surface	• pronounced		3	3	3	3	3	3
	• well developed		2	2	2	2	2	2
	• poorly developed		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
• Frequency of Overbank Flooding	• overbank flooding absent		0	0	0	0	0	0
	• return interval of >5 yrs		0	0	1	0	1	1
	• return interval of 2-5 yrs		0	0	2	0	2	2
	• return interval of 1-2 yrs		0	0	3	0	3	3
• Vegetation Density/Dominance	• high/very high		3	3	3	3	3	3
	• moderate		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0

(continued)

2.9.3 Storm and Flood-Water Storage (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
• Dead Woody Material	• abundant		3	3	3	3	3	3
	• moderately abundant		2	2	2	2	2	2
	• sparse		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
		Total Score:	19	14				
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score 19 = 0.70	14 = 0.67				
			27	21	21	12	24	30
		Index Range:	0.15-1.0	0.19-1.0	0.09-1.0	0-1.0	0.12-1.0	0.13-1.0

2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

VARIABLES	CONDITIONS	WEIGHTS
Indicators of Disfunction	no outlet	0
Direct Indicators of Function	none	

Primary Variables

Storm and Flood Water Storage Function Model Score			Modification of Groundwater Discharge Function Model Score			
High*	3	x	High	3	=	9
Mod	2	x	High	3	=	6
Low	1	x	High	3	=	3
High	3	x	Mod	2	=	6
Mod	2	x	Mod	2	=	4
Low	1	x	Mod	2	=	2
High	3	x	Low	1	=	3
Mod	2	x	Low	1	=	2
Low	1	x	Low	1	=	1

Total Score:

Model Range: 1-9 $\frac{6}{9} = 0.67$

Functional Capacity Index: Total Score 9

Index Range: 0.11-1.0

*High = FCI of 0.67-1.0, Mod = FCI of 0.34-0.66, Low = FCI of 0-0.33 for the Storm and Flood Water Storage and Modification of Ground Water Discharge Function Model Scores.

2.9.5 Modification of Water Quality

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	evidence of sedimentation		18	15	12	12	12	18
Primary Variables								
• Wetland Land Use	• low intensity		(3)	(3)	3	3	3	3
	• moderate intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• restricted outflow		3	0	0	0	0	3
	• no outlet		(2)	0	0	0	0	2
	• unrestricted outflow		1	0	0	0	0	1
• Inlet/Outlet Type	• no outlet		(3)	3	0	0	0	3
	• intermittent outlet		2	(2)	0	0	0	2
	• perennial outlet		1	1	0	0	0	1
• Dominant Wetland Type	• forested wetland		3	(3)	3	3	3	3
	• scrub-shrub		(2)	2	2	2	2	2
	• emergent wetland		2	2	2	2	2	2
	• aquatic bed		1	0	0	0	0	0
	• no vegetation		0	0	0	0	0	0
• Cover Distribution	• forming a continuous cover		(3)	(3)	3	3	3	3
	• growing in small scattered patches		2	2	2	2	2	2
	• one or more large patches		1	1	1	1	1	1
	• solitary scattered stems		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• histosol or clayey soil		3	3	3	3	3	3
	• silty soil		2	2	2	0	2	2
	• sandy or gravelly soil		(1)	(1)	1	0	1	1
		Total Score:	14	12	—	—	—	—
		Model Range:	4-18	3-15	2-12	1-12	2-12	4-18
		Functional Capacity Index:	Total Score	14 = 0.78 12 = 0.80				
			18	15	12	12	12	18
		Index Range:	0.22-1.0	0.20-1.0	0.16-1.0	0.8-1.0	0.16-1.0	0.22-1.0

2.9.6 Export of Detritus

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	no outlet		0	0		0		0
Direct Indicators of Function	none							
Primary Variables								
• Wetland Land Use	• moderate intensity		3	3	3	3	3	3
	• low intensity		(2)	(2)	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• unrestricted outflow		3	0	0	0	0	3
	• restricted outflow		(1)	0	0	0	0	1
• Inlet/Outlet Class	• perennial outlet		3	3	0	0	0	3
	• intermittent outlet		(1)	(1)	0	0	0	1
• Wetland Water Regime	• drier: seasonally flooded, temporarily flooded, saturated		(3)	(3)	3	0	3	3
	• wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	1	1	1
• Vegetation Density/Dominance	• high/very high		(3)	(3)	3	3	3	3
	• medium		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• mineral hydric soil		(3)	(3)	3	3	3	3
	• histosol		1	1	1	1	1	1
		Total Score:	13	12	—	—	—	—
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index: Total Score	13 = 0.72 / 18	12 = 0.80 / 15	— / 12	— / 10	— / 12	— / 18
		Index Range:	0.27-1.0	0.26-1.0	0.25-1.0	0.20-1.0	0.25-1.0	0.27-1.0

2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation

(This model is identical for all HGM types)

VARIABLES		CONDITIONS	WEIGHTS
Indicators of Disfunction		no vegetation	0
Direct Indicators of Function		none	
Primary Variables			
•	Plant Species Diversity	• high diversity • medium diversity • low diversity	5 3 1
•	Vegetation Density/Dominance	• high/very high • medium • sparse/low	5 3 1
•	Wetland Juxtaposition	• connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated	5 3 1 0
		Total Score:	11 9
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15
		Index Range:	0.13-1.0

9/15 = 0.60

11/15 = 0.73

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna

(This model is identical for all HGM types except Slope Wetlands for which "Interspersion of Vegetation Cover and Open Water" does not apply))

VARIABLES	CONDITIONS	WEIGHTS
Direct Indicators of Disfunction	none	
Direct Indicators of Function	none	
Primary Variables		
• Watershed Land Use	• low intensity (0-25% urbanized)	(3)
	• moderate intensity (25-50% urbanized)	2
	• high intensity (>50% urbanized)	1
• Wetland Land Use	• low intensity	(3)
	• moderate intensity	2
	• high intensity	1
• Wetland Water Regime	• wet: permanently flooded, intermittently exposed, semipermanently flooded	3
	• drier: seasonally flooded, temporarily flooded, saturated	(1)
• Microrelief of Wetland Surface	• pronounced	(3)
	• well developed	(2)
	• poorly developed	1
	• absent	0
• Number of Wetland types and Relative Proportions	• 5 or more types	(3)
	• 3-4 types	2
	• 1-2 types	1
	• no vegetation	0
	• even distribution	3
	• moderately even distribution	(2)
	• highly uneven distribution	1
	• no vegetation	0
• Vegetation Interspersion	• high interspersion	3
	• moderate interspersion	(2)
	• low interspersion	1
	• no vegetation	0
• Number of Layers and Percent Cover	• 5 or more layers	(3)
	• 3-4 layers	2
	• 1-2 layers	1
	• no vegetation	0
	• layers well developed (>50% cover)	(3)
	• layers with moderate cover (26-50% cover)	(2)
	• layers poorly distinguishable (<25% cover)	1
	• no vegetation	0

(continued)

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

VARIABLES	CONDITIONS	WEIGHTS
• Interspersion of Vegetation Cover and Open Water	• 26-75% scattered or peripheral	3
	• >75% scattered or peripheral	2
	• <25% scattered or peripheral	1
	• 100% cover or open water	1
	• no vegetation	0
• Size	• large (>100 acres)	3
	• medium (10-100 acres)	2
	• small (<10 acres)	1
• Wetland Juxtaposition	• other wetlands within 400 m and connected above or below	3
	• other wetlands within 400 m but not connected	1
	• wetland isolated	0

Slope Wetlands:

Model Range: 4-33

Functional Capacity Index = Total Score / 33

Index Range: 0.12-1.0

All Other HGM Types:

Total Score:

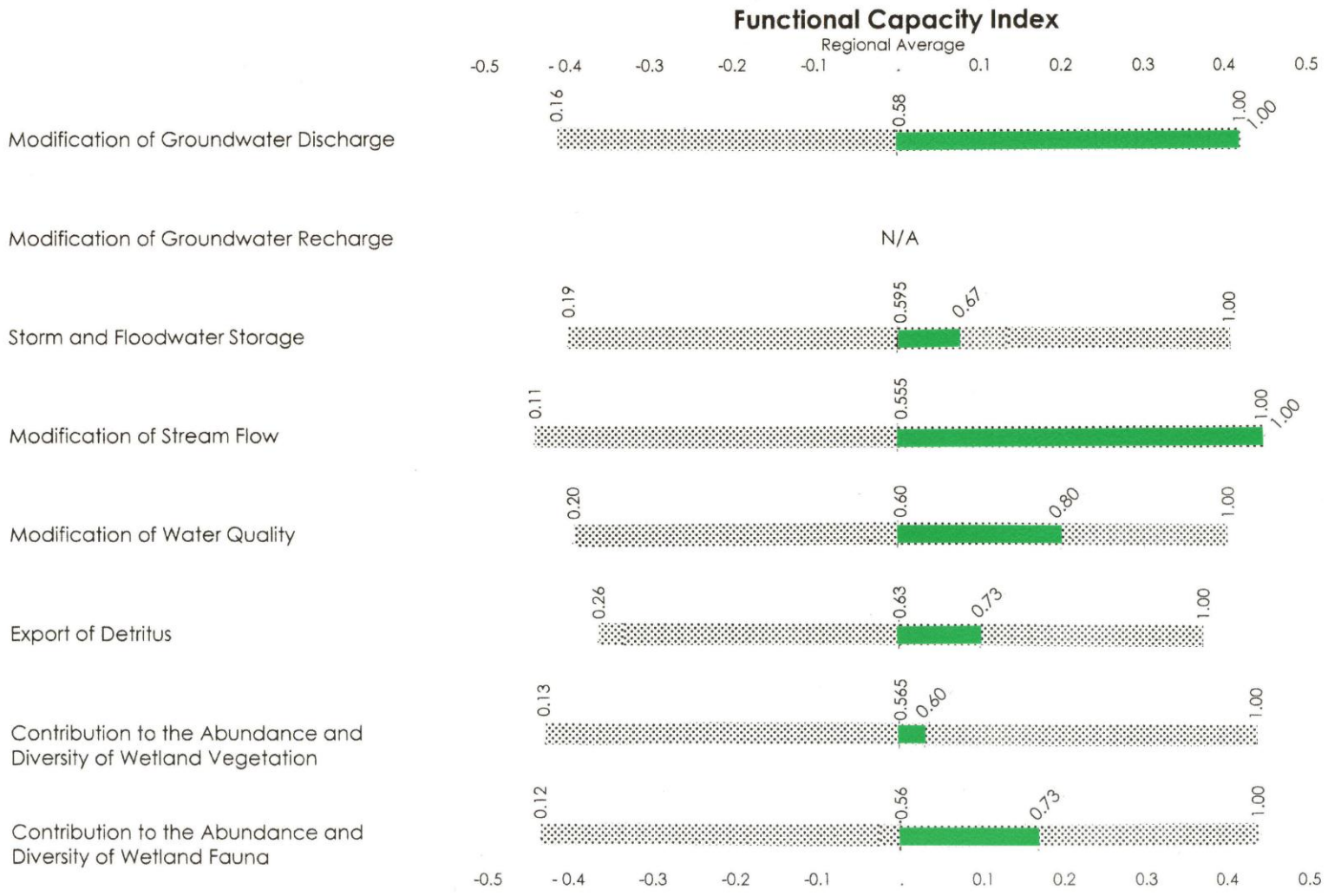
Model Range: 4-36

Functional Capacity Index = Total Score / 36

Index Range 0.11-1.0

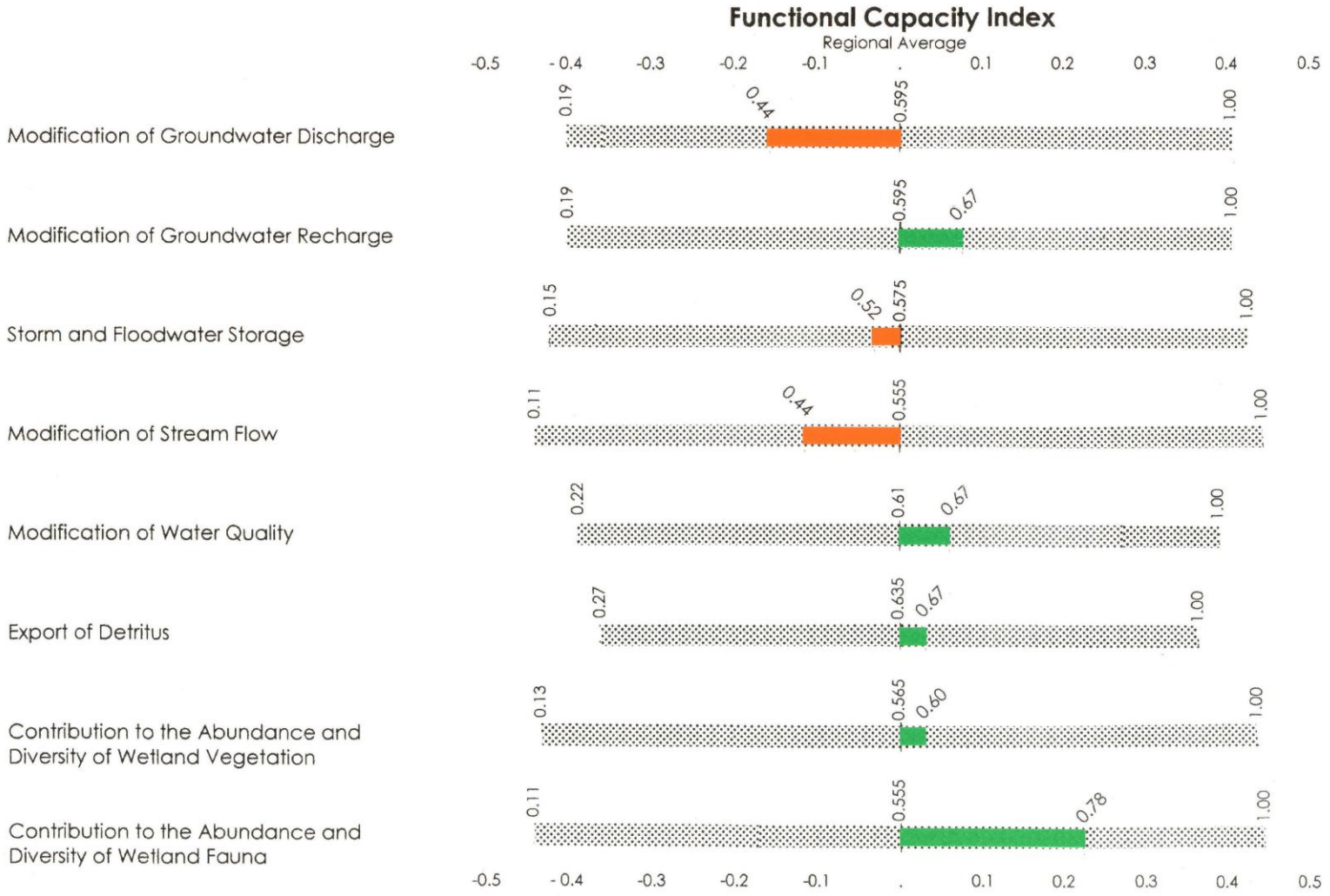
Hunter Brook **Sloping Wetland** **Study Area: HB-4**

0.53 ac. - 32% of total 1.65 ac. wetlands



Hunter Brook **Depression Wetland** **Study Area: HB-4**

1.12 ac. - 68% of total 1.65 ac. wetlands



Depression 1.12 ac of 1.65 ac
Slope 0.53 ac of 1.65 ac

WETLAND INVENTORY DATA

Project Number: Yorktown **Date:** _____

Wetland Number: HB-4

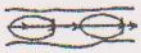
Aerial Photo Numbers: _____

USGS Quadrangle: Mohegan Lake

Field Investigators: B Donohue

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	100%	Depressional
	_____	Slope
	_____	Flat
	_____	Extensive Peatland
	_____	Lacustrine Fringe
	_____	Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	_____
Deciduous	
Broad-leaved	68%
Needle-leaved	_____
Scrub Shrub	
Evergreen	
Broad-leaved	_____
Needle-leaved	_____
Deciduous	
Broad-leaved	_____
Needle-leaved	_____
Emergent Wetland	
Persistent	
Non-persistent	32%
Aquatic Bed	_____
Total	100%

SOIL TYPES

Histosol
- Fibric ☐
- Hemic ☐
- Sapric ☐

Mineral Hydric Soil
- Gravelly ☐
- Sandy ☑
- Silty ☐
- Clayey ☐

GEOLOGY

Surficial: Till

Bedrock:

Comments: _____

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
Red Maple	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	☐
Tussock Sedge	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	■
SPICE Bush	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	■	☐	☐
Japanese Barberry	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	■	☐
Highbush Blueberry	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	■	☐
Summersweet Clethera	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	■	☐	☐
Greenbrier	☐	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	■
Sweet Birch	☐	☐	☐	☐	☐	■	☐	■	☐	☐	☐	☐	☐
Sugar Maple	☐	☐	☐	☐	☐	☐	■	☐	☐	■	☐	☐	☐
American Elm	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	☐
Jewelweed	☐	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	■
Winterberry	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	■	☐	☐
Winged Euonymus	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	■	☐	☐
Hophornbeam	☐	☐	☐	☐	☐	■	☐	■	☐	☐	☐	☐	☐
Oriental Bittersweet	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	■
Swamp White Oak	☐	☐	☐	☐	☐	■	☐	■	☐	☐	☐	☐	☐
Arrowwood Viburnum	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	■	☐	☐
Trembling Aspen	☐	☐	☐	☐	☐	■	☐	■	☐	☐	☐	☐	☐
Duckweed	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	■
Grape spp	☐	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	■
Sensitive Fern	☐	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	■
Black Gum	☐	☐	☐	☐	☐	■	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
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	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

OW Obligate Wetland
FW Facultative Wetland
F Facultative
FU Facultative Upland
OU Obligate Upland
DOM Dominant
COM Common
OCC Occasional
C Canopy
S Sapling
TS Tall Shrub
LS Low Shrub
H Herb

PRE-EMPTIVE STATUS

_____ Public ownership
_____ Wildlife management area
_____ Fisheries management area
_____ Designated State or Federal protected wetland
_____ Documented habitat for state or federal listed species
_____ Regionally scarce wetland category
_____ Historic/archaeologic area

WETLAND INVENTORY DATA (continued)

PART 2 - CHARACTERIZATION of MODEL VARIABLES

LANDSCAPE VARIABLES

Size:
- [ ] Small (<10 acres)
- [ ] Medium (10-100 acres)
- [ ] Large (>100 acres)

Wetland Juxtaposition:
- [ ] Connected Upstream and Downstream
- [ ] Only Connected Above
- [ ] Only Connected Below
- [ ] Other Wetlands Nearby but not Connected
- [ ] Wetland Isolated

Fire Occurence and Frequency:
- [ ] Natural; Predictable Frequency
- [ ] Natural; Sporadic Frequency
- [ ] Human-caused; Predictable
- [ ] Human-caused; Sporadic
- [ ] Rare Event
- [ ] No Evidence

Regional Scarcity:
- [ ] Not Scarce (>5% of total wetland area of region)
- [ ] Scarce (<5% of total wetland area of region)

Watershed Land Use:
- [ ] > 50% urbanized
- [ ] 25-50% urbanized
- [ ] 0-25% urbanized

HYDROLOGIC VARIABLES

Surface Water Level Fluctuation of Wetland:
- [ ] High Fluctuation
- [ ] Low Fluctuation
- [ ] Never Inundated

Frequency of Overbank Flooding:
- [ ] Return Interval > 5 yrs.
- [ ] Return Interval 2-5 yrs.
- [ ] Return Interval 1-2 yrs.
- [ ] No Overbank Flooding

pH:
- [ ] Acid <5.5
- [ ] Circumneutral 5.5-7.4
- [ ] Alkaline >7.4
- [ ] No Water

Surficial Geologic Deposit Under Wetland
- [ ] Low Permeability Stratified Deposits
- [ ] High Permeability Stratified Deposits
- [ ] Glacial Till

Wetland Land Use:
- [ ] High Intensity (ie. agriculture)
- [ ] Moderate Intensity (ie. forestry)
- [ ] Low Intensity (ie. open space)

Wetland Water Regime:
- [ ] Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded
- [ ] Drier: Seasonally Flooded, Temporarily Flooded, Saturated

Basin Topographic Gradient:
- [ ] High Gradient >2%
- [ ] Low Gradient <2%

Degree of Outlet Restriction:
- [ ] Restricted Outflow
- [ ] Unrestricted Outflow
- [ ] No Outflow

Ratio of Wetland Area to Watershed Area:
- [ ] High >10%
- [ ] Low <10%

Microrelief of Wetland Surface:
- [ ] Pronounced >45 cm
- [ ] Well Developed 15-45 cm
- [ ] Poorly Developed <15 cm
- [ ] Absent

Inlet/Outlet Class:
- [ ] No Inlet/No Outlet
- [ ] No Inlet/Intermittent Outlet
- [ ] No Inlet/Perennial Outlet
- [ ] Intermittent Inlet/No Outlet
- [ ] Intermittent Inlet/Intermittent Outlet
- [ ] Intermittent Outlet/Perennial Outlet
- [ ] Perennial Inlet/No Outlet
- [ ] Perennial Inlet/ Intermittent Outlet
- [ ] Perennial Inlet/Perennial Outlet

Nested Piezometer Data:
- [ ] Recharge
- [ ] Discharge
- [ ] Horizontal Flow
- [ ] Not Available

Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:
- [ ] Piez. Surface Above or at Substrate elev.
- [ ] Piez. Surface below Substrate elev.
- [ ] Not Available

Evidence of Sedimentation:
- [ ] No Evidence Observed
- [ ] Sediment Observed on Wetland Substrate
- [ ] Fluvaquent Soils

Evidence of Seeps and Springs:
- [ ] No Seeps or Springs
- [ ] Seeps Observed
- [ ] Perennial Spring
- [ ] Intermittent Spring

SOIL VARIABLES

Soil Lacking:
- [ ]

Histosol:
- [ ] Fibric
- [ ] Hemic
- [ ] Sapric

Mineral Hydric Soil:
- [ ] Gravelly
- [ ] Sandy
- [ ] Silty
- [ ] Clayey

VEGETATION VARIABLES

Vegetation Lacking:
- [ ]

Dominant Wetland Type:
- [ ] Forested - Evergreen - Needle-leaved
- [ ] Forested - Deciduous - Broad-leaved
- [ ] Forested - Deciduous - Needle-leaved
- [ ] Scrub Shrub - Evergreen - Broad-leaved
- [ ] Scrub Shrub - Evergreen - Needle-leaved
- [ ] Scrub Shrub - Deciduous - Broad-leaved
- [ ] Scrub Shrub - Deciduous - Needle-leaved
- [ ] Emergent - Persistent
- [ ] Emergent - Non-persistent
- [ ] Aquatic Bed

Number of Types & Relative Proportions:

Number of Types	Evenness of Distribution
[ ] Actual #	[ ] Even Distribution
[ ] 5	[ ] Moderately Even Distribution
[ ] 4	[ ] Highly Uneven Distribution
[ ] 3	
[ ] 2	
[ ] 1	

Vegetation Density/Dominance:
- [ ] Sparse (0-20%)
- [ ] Low Density (20-40%)
- [ ] Medium Density (40-60%)
- [ ] High Density (60-80%)
- [ ] Very High Density (80-100%)

Vegetative Interspersion:
- [ ] High (small groupings, diverse and interspersed)
- [ ] Moderate (broken irregular rings)
- [ ] Low (large patches, concentric rings)

Number of Layers and Percent Cover:

Number of Layers	% Cover
[ ] 6 or > (actual #)	1. submergents:
[ ] 5	2. floating:
[ ] 4	3. moss-lichen:
[ ] 3	4. short herb:
[ ] 2	5. tall herb:
[ ] 1	6. dwarf shrub:
	7. short shrub:
	8. tall shrub:
	9. sapling:
	10. tree:

Plant Species Diversity:
- [ ] Low 1-2 plots sampled
- [ ] Medium 3-4 plots sampled
- [ ] High 5 or more plots sampled

Proportion of Animal Food Plants:
- [ ] Low (5-25% cover)
- [ ] Medium (25-50% cover)
- [ ] High (>50% cover)

Cover Distribution:
- [ ] Continuous Cover
- [ ] Small Scattered Patches
- [ ] 1 or More Large Patches; Parts of Site Open
- [ ] Solitary, Scattered Stems

Dead Woody Material:
- [ ] Abrundant (>50 of wetland surface)
- [ ] Moderately Abrundant (25-50% of surface)
- [ ] Low Abrundance (0-25% of surface)

Interspersion of Cover and Open Water:
- [ ] 26-75% Scattered or Peripheral
- [ ] >75% Scattered or Peripheral
- [ ] <25% Scattered or Peripheral
- [ ] 100% Cover or Open Water

Stream Sinuosity:
- [ ] Highly Convoluted (index 1.50 or >)
- [ ] Moderately Convoluted (index 1.25-1.50)
- [ ] Straight/Slightly Irreg. (index) 1.10-1.25

Presence of Islands:
- [ ] Several to Many
- [ ] One or Few
- [ ] Absent

HB-4 DEPRESSION 1.12 ac. / 1.65 = 68%
SLOPE 0.53 ac. " = 32%

2.9.1 Modification of Ground Water Discharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
Indicators of Disfunction					
• Inlet/Outlet Class	• perennial inlet/no outlet	0	0	0	0
• Nested Piezometer Data	• recharge condition	0	0	0	0
• Relationship to Regional Piezo-metric Surface	• wetland substrate elevation above piezometric surface	0	0	0	0
Direct Indicators of Function					
• Presence of Springs and Seeps	• evidence of perennial seeps or springs	18	15	15	18
• Nested Piezometer Data	• discharge condition	18	15	15	18
• Relationship to Regional Peizometeric Surface	• wetland substrate elevation below piezometric surface	18	15	15	18
• Inlet/Outlet Class	• no inlet/perennial outlet	18	15	15	18
Primary Variables					
• Microrelief of Wetland Surface	• pronounced	3	3	3	3
	• well developed	2	2	2	2
	• poorly developed	1	1	1	1
	• absent	0	0	0	0
• Inlet/Outlet Class	• perennial inlet/perennial outlet	3	3	0	3
	• intermittent inlet/perennial outlet	2	2	0	2
	• all other classes	0	0	0	0
• pH	• alkaline	3	3	3	3
	• circumneutral	2	2	2	2
	• acid	0	0	0	0
	• no water present	0	0	0	0
• Surficial Geologic Deposit Under Wetland	• high permeability stratified deposits	3	3	3	3
	• low permeability stratified deposits	2	2	2	2
	• glacial till	1	1	1	1
• Wetland Water Regime	• wet; permanently flooded, inter-mittently exposed, semipermanently flooded	3	0	3	3
	• drier; seasonally flooded, tempo-rarily flooded, saturated	1	0	1	1

(continued)

2.9.1 Modification of Ground Water Discharge (Continued)

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
• Soil Type	• histosol	3	3	3	3
	• mineral hydric soil	1	1	1	1
		–	–	–	–
	Total Score:	4			
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score 4 = 0.22	15 = 1.0	—	—
		18	15	15	18
	Index Range:	0.19-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model can be applied to both year long and seasonal discharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a discharge mode for roughly half the year.

2.9.2 Modification of Ground Water Recharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	L	EP	R	F
Indicators of Disfunction						
• Inlet/Outlet Class	• no inlet/perennial outlet; intermittent inlet/perennial outlet	0				0
• Nested Piezometer Data	• discharge condition	0	0	0	0	0
• Relationship to Regional Piezometric Surface	• wetland substrate elevation above or at piezometric surface	0	0	0	0	0
• Presence of Seeps and Springs	• presence of seeps or springs	0	0	0	0	0

(continued)

2.9.1 Modification of Ground Water Discharge (Continued)

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
• Soil Type	• histosol	3	3	3	3
	• mineral hydric soil	1	1	1	1
		–	–	–	–
	Total Score:	4			
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score 4 = 0.22	15 = 1.0	—	—
		18	15	15	18
	Index Range:	0.19-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model can be applied to both year long and seasonal discharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a discharge mode for roughly half the year.

2.9.2 Modification of Ground Water Recharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	L	EP	R	F
Indicators of Disfunction						
• Inlet/Outlet Class	• no inlet/perennial outlet; intermittent inlet/perennial outlet	0				0
• Nested Piezometer Data	• discharge condition	0	0	0	0	0
• Relationship to Regional Piezometric Surface	• wetland substrate elevation above or at piezometric surface	0	0	0	0	0
• Presence of Seeps and Springs	• presence of seeps or springs	0	0	0	0	0

(continued)

2.9.3 Storm and Flood-Water Storage

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	no outlet		27	21				30
Primary Variables								
• Inlet/Outlet Class	• perennial inlet/intermittent outlet		3	3	0	0	0	3
	• intermittent inlet/intermittent outlet		2	2	0	0	0	2
	• no inlet/intermittent outlet		1	1	0	0	0	1
	• non inlet/perennial outlet		1	1	0	0	0	1
	• intermittent inlet/perennial outlet		1	1	0	0	0	1
	• perennial inlet/perennial outlet		1	1	0	0	0	1
• Degree of Outlet Restriction	• restricted		3	0	0	0	0	3
	• unrestricted		0	0	0	0	0	0
• Basin Topographic Gradient	• low gradient		3	3	0	3	3	3
	• high gradient		1	1	0	0	1	1
• Wetland Water Regime	• Drier: seasonally flooded, temporarily flooded, saturated		3	3	3	0	3	3
	• Wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	0	1	1
• Surface Water Level Fluctuation of the Wetland	• high fluctuation		3	0	3	0	3	3
	• low fluctuation		2	0	2	0	2	2
	• never inundated		0	0	0	0	0	0
• Ratio of Wetland Area to Watershed Area	• large		3	3	3	0	3	3
	• small		1	1	1	0	1	1
• Microrelief of Wetland Surface	• pronounced		3	3	3	3	3	3
	• well developed		2	2	2	2	2	2
	• poorly developed		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
• Frequency of Overbank Flooding	• overbank flooding absent		0	0	0	0	0	0
	• return interval of >5 yrs		0	0	1	0	1	1
	• return interval of 2-5 yrs		0	0	2	0	2	2
	• return interval of 1-2 yrs		0	0	3	0	3	3
• Vegetation Density/Dominance	• high/very high		3	3	3	3	3	3
	• moderate		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0

(continued)

2.9.3 Storm and Flood-Water Storage (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
• Dead Woody Material	• abundant		3	3	3	3	3	3
	• moderately abundant		2	2	2	2	2	2
	• sparse		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
		Total Score:	14	14	—	—	—	—
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score / 27	14 = 0.52 / 21	14 = 0.67 / 21	12	24	30
		Index Range:	0.15-1.0	0.19-1.0	0.09-1.0	0-1.0	0.12-1.0	0.13-1.0

2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

VARIABLES	CONDITIONS	WEIGHTS
Indicators of Disfunction	no outlet	0
Direct Indicators of Function	none	

Primary Variables

Storm and Flood Water Storage Function Model Score			Modification of Groundwater Discharge Function Model Score			
High*	3	x	High	3	=	9
Mod	2	x	High	3	=	6
Low	1	x	High	3	=	3
High	3	x	Mod	2	=	6
Mod	2	x	Mod	2	=	4
Low	1	x	Mod	2	=	2
High	3	x	Low	1	=	3
Mod	2	x	Low	1	=	2
Low	1	x	Low	1	=	1

Total Score:	
Model Range:	1-9 $\frac{9}{9} = 1.0$
Functional Capacity Index:	Total Score / 9 4 = 0.44
Index Range:	0.11-1.0

*High = FCI of 0.67-1.0, Mod = FCI of 0.34-0.66, Low = FCI of 0-0.33 for the Storm and Flood Water Storage and Modification of Ground Water Discharge Function Model Scores.

2.9.5 Modification of Water Quality

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	evidence of sedimentation		18	15	12	12	12	18
Primary Variables								
• Wetland Land Use	• low intensity		3	3	3	3	3	3
	• moderate intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• restricted outflow		3	0	0	0	0	3
	• no outlet		2	0	0	0	0	2
	• unrestricted outflow		1	0	0	0	0	1
• Inlet/Outlet Type	• no outlet		3	3	0	0	0	3
	• intermittent outlet		2	2	0	0	0	2
	• perennial outlet		1	1	0	0	0	1
• Dominant Wetland Type	• forested wetland		3	3	3	3	3	3
	• scrub-shrub		2	2	2	2	2	2
	• emergent wetland		2	2	2	2	2	2
	• aquatic bed		1	0	0	0	0	0
	• no vegetation		0	0	0	0	0	0
• Cover Distribution	• forming a continuous cover		3	3	3	3	3	3
	• growing in small scattered patches		2	2	2	2	2	2
	• one or more large patches		1	1	1	1	1	1
	• solitary scattered stems		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• histosol or clayey soil		3	3	3	3	3	3
	• silty soil		2	2	2	0	2	2
	• sandy or gravelly soil		1	1	1	0	1	1
		Total Score:	12	12	—	—	—	—
		Model Range:	4-18	3-15	2-12	1-12	2-12	4-18
		Functional Capacity Index:	Total Score / 18	12/15 = 0.8	— / 12	— / 12	— / 12	— / 18
		Index Range:	0.22-1.0	0.20-1.0	0.16-1.0	0.8-1.0	0.16-1.0	0.22-1.0

12 = 0.67

2.9.6 Export of Detritus

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	no outlet		0	0		0		0
Direct Indicators of Function	none							
Primary Variables								
• Wetland Land Use	• moderate intensity		3	3	3	3	3	3
	• low intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• unrestricted outflow		3	0	0	0	0	3
	• restricted outflow		1	0	0	0	0	1
• Inlet/Outlet Class	• perennial outlet		3	3	0	0	0	3
	• intermittent outlet		1	1	0	0	0	1
• Wetland Water Regime	• drier: seasonally flooded, temporarily flooded, saturated		3	3	3	0	3	3
	• wet: permanently flooded, intermittently exposed, semipermanently flooded		1	1	1	1	1	1
• Vegetation Density/Dominance	• high/very high		3	3	3	3	3	3
	• medium		2	2	2	2	2	2
	• sparse/low		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• mineral hydric soil		3	3	3	3	3	3
	• histosol		1	1	1	1	1	1
			—	—	—	—	—	—
		Total Score:	12	11				
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index:	Total Score	12 = 0.67 / 11 = 0.73				
			18	15	12	10	12	18
		Index Range:	0.27-1.0	0.26-1.0	0.25-1.0	0.20-1.0	0.25-1.0	0.27-1.0

2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation

(This model is identical for all HGM types)

VARIABLES		CONDITIONS	WEIGHTS
Indicators of Disfunction		no vegetation	0
Direct Indicators of Function		none	
Primary Variables			
•	Plant Species Diversity	• high diversity • medium diversity • low diversity	5 (3) 1
•	Vegetation Density/Dominance	• high/very high • medium • sparse/low	5 (3) 1
•	Wetland Juxtaposition	• connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated	5 (3) 1 0
		Total Score:	9
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15 = 9 = 0.60
		Index Range:	0.13-1.0

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna

(This model is identical for all HGM types except Slope Wetlands for which "Interspersion of Vegetation Cover and Open Water" does not apply))

VARIABLES	CONDITIONS	WEIGHTS
Direct Indicators of Disfunction	none	
Direct Indicators of Function	none	
Primary Variables		
• Watershed Land Use	• low intensity (0-25% urbanized)	3
	• moderate intensity (25-50% urbanized)	2
	• high intensity (>50% urbanized)	1
• Wetland Land Use	• low intensity	3
	• moderate intensity	2
	• high intensity	1
• Wetland Water Regime	• wet: permanently flooded, intermittently exposed, semipermanently flooded	3
	• drier: seasonally flooded, temporarily flooded, saturated	1
• Microrelief of Wetland Surface	• pronounced	3
	• well developed	2
	• poorly developed	1
	• absent	0
• Number of Wetland types and Relative Proportions	• 5 or more types	3
	• 3-4 types	2
	• 1-2 types	1
	• no vegetation	0
	• even distribution	3
	• moderately even distribution	2
	• highly uneven distribution	1
	• no vegetation	0
• Vegetation Interspersion	• high interspersion	3
	• moderate interspersion	2
	• low interspersion	1
	• no vegetation	0
• Number of Layers and Percent Cover	• 5 or more layers	3
	• 3-4 layers	2
	• 1-2 layers	1
	• no vegetation	0
	• layers well developed (>50% cover)	3
	• layers with moderate cover (26-50% cover)	2
	• layers poorly distinguishable (<25% cover)	1
	• no vegetation	0

(continued)

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

VARIABLES	CONDITIONS	WEIGHTS
• Interspersion of Vegetation Cover and Open Water	• 26-75% scattered or peripheral	(3)
	• >75% scattered or peripheral	2
	• <25% scattered or peripheral	1
	• 100% cover or open water	(1)
	• no vegetation	0
• Size	• large (>100 acres)	3
	• medium (10-100 acres)	2
	• small (<10 acres)	(1)
• Wetland Juxtaposition	• other wetlands within 400 m and connected above or below	(3) 22
	• other wetlands within 400 m but not connected	1
	• wetland isolated	0
		28 24

Slope Wetlands:

Model Range: 4-33

Functional Capacity Index = $\frac{\text{Total Score}}{33}$ 24 = 0.73

Index Range: 0.12-1.0

All Other HGM Types:

Total Score:

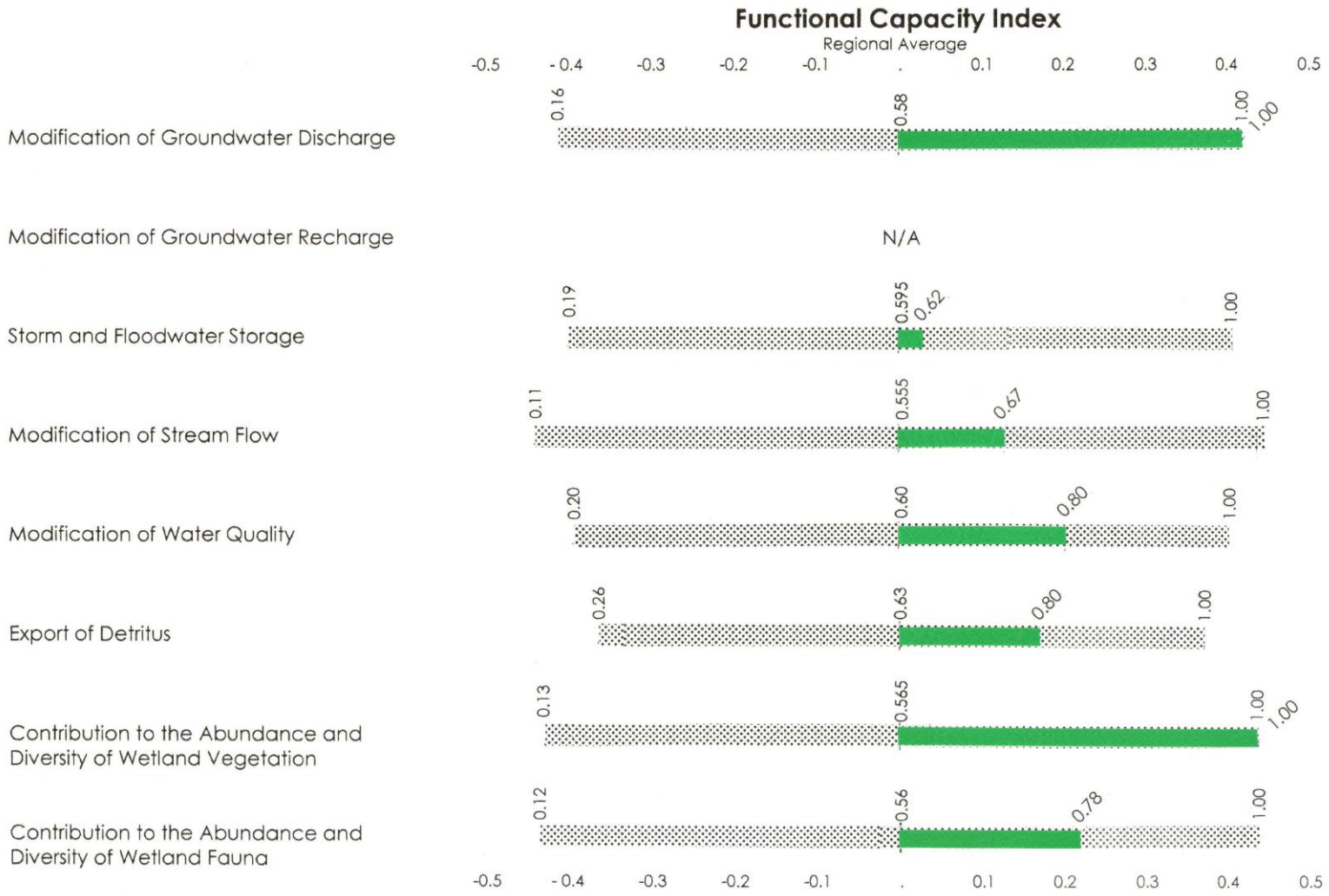
Model Range: 4-36

Functional Capacity Index = $\frac{\text{Total Score}}{36}$ 28 = 0.78 ✓

Index Range 0.11-1.0

Hunter Brook **Sloping Wetland** **Study Area: HB-5**

13.8 ac. - 83% of total 16.7 ac. wetlands



SLOPE
RIVERINE

WETLAND INVENTORY DATA

Project Number: YORKTOWN Date: _____

Wetland Number: HB-5

Aerial Photo Numbers: _____

USGS Quadrangle: MOHEGAN LAKE

Field Investigators: B.D.

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	_____	Depressional
	83%	Slope
	_____	Flat
	_____	Extensive Peatland
	_____	Lacustrine Fringe
	17%	Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	_____
Deciduous	
Broad-leaved	95%
Needle-leaved	_____
Scrub Shrub	
Evergreen	
Broad-leaved	_____
Needle-leaved	_____
Deciduous	
Broad-leaved	3%
Needle-leaved	_____
Emergent Wetland	
Persistent	2%
Non-persistent	_____
Aquatic Bed	_____
Total	100%

SOIL TYPES

Histosol
- Fibric ☐
- Hemic ☐
- Sapric ☐

Mineral Hydric Soil
- Gravelly ☐
- Sandy ☒
- Silty ☐
- Clayey ☐

GEOLOGY

Surficial: TILL

Bedrock:

Comments: _____

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
SUGAR MAPLE						▨							
TULIP POPLAR						■			■				
JAPANESE BARBERRY						■						■	
WHITE ASH						■			■				
AMERICAN ELM							■						
WINEBERRY								■				■	
HORNBEAM						■					■		
SPICEBUSH						■					■		
POISON IVY						■							■
VIRGINIA CREEPER						■							■
JACK-IN-THE-PULPIT								■					■
BLACKBERRY								■				■	
MULTIFLORA ROSE						■						■	
SENSITIVE FERN							■						■
MUSTARD GARLIC						■							■
SHAGBARK HICKORY							■		■				
WINTERBERRY							■				■		
CHESTNUT OAK								■	■				
RED MAPLE						■			■				
AMERICAN PLANETREE						■			■				
GRAPE								■					■
PIGNUT HICKORY								■	■				
BLACKHAW VIBURNUM							■				■		
ORIENTAL BITTERSWEET							■						■
PRIVET								■			■		
CHRISTMAS FERN								■					■
SILVER MAPLE							■		■				
SHADBUSH SERVICEBERRY								■			■		
SKUNK CABBAGE						▨							■
TUSSOCK SEDGE							■						■

OW	Obligate Wetland	COM	Common
FW	Facultative Wetland	OCC	Occasional
F	Facultative	C	Canopy
FU	Facultative Upland	S	Sapling
OU	Obligate Upland	TS	Tall Shrub
DOM	Dominant	LS	Low Shrub
		H	Herb

PRE-EMPTIVE STATUS

_____ Public ownership
_____ Wildlife management area
_____ Fisheries management area
_____ Designated State or Federal protected wetland
_____ Documented habitat for state or federal listed species
_____ Regionally scarce wetland category
_____ Historic/archaeologic area

WETLAND INVENTORY DATA (continued)

PART 2 - CHARACTERIZATION of MODEL VARIABLES

LANDSCAPE VARIABLES

Size:
- [x] Small (<10 acres)
- [ ] Medium (10-100 acres)
- [ ] Large (>100 acres)

Wetland Juxtaposition:
- [x] Connected Upstream and Downstream
- [ ] Only Connected Above
- [ ] Only Connected Below
- [ ] Other Wetlands Nearby but not Connected
- [ ] Wetland Isolated

Fire Occurence and Frequency:
- [ ] Natural; Predictable Frequency
- [ ] Natural; Sporadic Frequency
- [ ] Human-caused; Predictable
- [ ] Human-caused; Sporadic
- [ ] Rare Event
- [x] No Evidence

Regional Scarcity:
- [x] Not Scarce (>5% of total wetland area of region)
- [ ] Scarce (<5% of total wetland area of region)

Watershed Land Use:
- [ ] > 50% urbanized
- [x] 25-50% urbanized
- [ ] 0-25% urbanized

HYDROLOGIC VARIABLES

Surface Water Level Fluctuation of Wetland:
- [x] High Fluctuation
- [ ] Low Fluctuation
- [ ] Never Inundated

Frequency of Overbank Flooding:
- [ ] Return Interval > 5 yrs.
- [ ] Return Interval 2-5 yrs.
- [x] Return Interval 1-2 yrs.
- [ ] No Overbank Flooding

pH:
- [ ] Acid <5.5
- [x] Circumneutral 5.5-7.4
- [ ] Alkaline >7.4
- [ ] No Water

Surficial Geologic Deposit Under Wetland
- [ ] Low Permeability Stratified Deposits
- [ ] High Permeability Stratified Deposits
- [x] Glacial Till

Wetland Land Use:
- [ ] High Intensity (ie. agriculture)
- [ ] Moderate Intensity (ie. forestry)
- [x] Low Intensity (ie. open space)

Wetland Water Regime:
- [ ] Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded
- [x] Drier: Seasonally Flooded, Temporarily Flooded, Saturated

Basin Topographic Gradient:
- [x] High Gradient >2%
- [ ] Low Gradient <2%

Degree of Outlet Restriction:
- [ ] Restricted Outflow
- [x] Unrestricted Outflow
- [ ] No Outflow

Ratio of Wetland Area to Watershed Area:
- [ ] High >10%
- [x] Low <10%

Microrelief of Wetland Surface:
- [ ] Pronounced >45 cm
- [x] Well Developed 15-45 cm
- [ ] Poorly Developed <15 cm
- [ ] Absent

Inlet/Outlet Class:
- [ ] No Inlet/No Outlet
- [ ] No Inlet/Intermittent Outlet
- [ ] No Inlet/Perennial Outlet
- [ ] Intermittent Inlet/No Outlet
- [ ] Intermittent Inlet/Intermittent Outlet
- [x] Intermittent Outlet/Perennial Outlet
- [ ] Perennial Inlet/No Outlet
- [ ] Perennial Inlet/ Intermittent Outlet
- [x] Perennial Inlet/Perennial Outlet

Nested Piezometer Data:
- [ ] Recharge
- [ ] Discharge
- [ ] Horizontal Flow
- [x] Not Available

Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:
- [ ] Piez. Surface Above or at Substrate elev.
- [ ] Piez. Surface below Substrate elev.
- [x] Not Available

Evidence of Sedimentation:
- [ ] No Evidence Observed
- [x] Sediment Observed on Wetland Substrate
- [x] Fluvaquent Soils

Evidence of Seeps and Springs:
- [x] No Seeps or Springs
- [x] Seeps Observed
- [ ] Perennial Spring
- [ ] Intermittent Spring

SOIL VARIABLES

Soil Lacking:
- [ ]

Histosol:
- [ ] Fibric
- [ ] Hemic
- [ ] Sapric

Mineral Hydric Soil:
- [ ] Gravelly
- [x] Sandy
- [ ] Silty
- [ ] Clayey

VEGETATION VARIABLES

Vegetation Lacking:
- [ ]

Dominant Wetland Type:
- [ ] Forested - Evergreen - Needle-leaved
- [x] Forested - Deciduous - Broad-leaved
- [ ] Forested - Deciduous - Needle-leaved
- [ ] Scrub Shrub - Evergreen - Broad-leaved
- [ ] Scrub Shrub - Evergreen - Needle-leaved
- [ ] Scrub Shrub - Deciduous - Broad-leaved
- [ ] Scrub Shrub - Deciduous - Needle-leaved
- [ ] Emergent - Persistent
- [ ] Emergent - Non-persistent
- [ ] Aquatic Bed

Number of Types & Relative Proportions:

Number of Types	Evenness of Distribution
[ ] Actual #	[ ] Even Distribution
[x] 5	[ ] Moderately Even Distribution
[x] 4	[ ] Highly Uneven Distribution
[ ] 3	
[ ] 2	
[ ] 1	

Vegetation Density/Dominance:
- [ ] Sparse (0-20%)
- [ ] Low Density (20-40%)
- [ ] Medium Density (40-60%)
- [x] High Density (60-80%)
- [ ] Very High Density (80-100%)

Vegetative Interspersion:
- [x] High (small groupings, diverse and interspersed)
- [ ] Moderate (broken irregular rings)
- [ ] Low (large patches, concentric rings)

Number of Layers and Percent Cover:

Number of Layers	% Cover
[ ] 6 or > (actual #)	1. submergents:
[x] 5	2. floating:
[ ] 4	3. moss-lichen:
[ ] 3	4. short herb:
[ ] 2	5. tall herb:
[ ] 1	6. dwarf shrub:
	7. short shrub:
	8. tall shrub:
	9. sapling:
	10. tree:

Plant Species Diversity:
- [ ] Low 1-2 plots sampled
- [ ] Medium 3-4 plots sampled
- [x] High 5 or more plots sampled

Proportion of Animal Food Plants:
- [ ] Low (5-25% cover)
- [ ] Medium (25-50% cover)
- [x] High (>50% cover)

Cover Distribution:
- [x] Continuous Cover
- [ ] Small Scattered Patches
- [ ] 1 or More Large Patches; Parts of Site Open
- [ ] Solitary, Scattered Stems

Dead Woody Material:
- [ ] Abrundant (>50 of wetland surface)
- [ ] Moderately Abrundant (25-50% of surface)
- [x] Low Abrundance (0-25% of surface)

Interspersion of Cover and Open Water:
- [x] 26-75% Scattered or Peripheral
- [ ] >75% Scattered or Peripheral
- [ ] <25% Scattered or Peripheral
- [ ] 100% Cover or Open Water

Stream Sinuosity:
- [ ] Highly Convoluted (index 1.50 or >)
- [x] Moderately Convoluted (index 1.25-1.50)
- [ ] Straight/Slightly Irreg. (index) 1.10-1.25

Presence of Islands:
- [ ] Several to Many
- [ ] One or Few
- [x] Absent

HB-5 SLOPE

2.9.1 Modification of Ground Water Discharge

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
Indicators of Disfunction					
• Inlet/Outlet Class	• perennial inlet/no outlet	0	0	0	0
• Nested Piezometer Data	• recharge condition	0	0	0	0
• Relationship to Regional Piezo-metric Surface	• wetland substrate elevation above piezometric surface	0	0	0	0
Direct Indicators of Function					
• Presence of Springs and Seeps	• evidence of perennial seeps or springs	18	15	15	18
• Nested Piezometer Data	• discharge condition	18	15	15	18
• Relationship to Regional Peizometeric Surface	• wetland substrate elevation below piezometric surface	18	15	15	18
• Inlet/Outlet Class	• no inlet/perennial outlet	18	15	15	18
Primary Variables					
• Microrelief of Wetland Surface	• pronounced	3	3	3	3
	• well developed	2	2	2	2
	• poorly developed	1	1	1	1
	• absent	0	0	0	0
• Inlet/Outlet Class	• perennial inlet/perennial outlet	3	3	0	3
	• intermittent inlet/perennial outlet	2	2	0	2
	• all other classes	0	0	0	0
• pH	• alkaline	3	3	3	3
	• circumneutral	2	2	2	2
	• acid	0	0	0	0
	• no water present	0	0	0	0
• Surficial Geologic Deposit Under Wetland	• high permeability stratified deposits	3	3	3	3
	• low permeability stratified deposits	2	2	2	2
	• glacial till	1	1	1	1
• Wetland Water Regime	• wet; permanently flooded, inter-mittently exposed, semipermanently flooded	3	0	3	3
	• drier; seasonally flooded, tempo-rarily flooded, saturated	1	0	1	1

(continued)

2.9.1 **Modification of Ground Water Discharge (Continued)**

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	R	F
• Soil Type	• histosol	3	3	3	3
	• mineral hydric soil	1	1	(1)	1
		–	–	–	–
	Total Score:		15		
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score 18	15=1.0 15	6=0.4 15	18
	Index Range:	0.19-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model can be applied to both year long and seasonal discharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a discharge mode for roughly half the year.

2.9.2 **Modification of Ground Water Recharge**

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	L	EP	R	F
Indicators of Disfunction						
• Inlet/Outlet Class	• no inlet/perennial outlet; intermittent inlet/perennial outlet	0				0
• Nested Piezometer Data	• discharge condition	0	0	0	0	0
• Relationship to Regional Piezometric Surface	• wetland substrate elevation above or at piezometric surface	0	0	0	0	0
• Presence of Seeps and Springs	• presence of seeps or springs	0	0	0	0	0

(continued)

2.9.2 Modification of Ground Water Recharge (Continued)

VARIABLES	CONDITIONS HGM TYPES:		WEIGHTS D	L	EP	R	F
Direct Indicators of Function							
• Inlet/Outlet Class	•	perennial inlet/no outlet	21				21
• Nested Piezometer Data	•	recharge condition	21				21
• Relationship to Regional Peizometeric Surface	•	wetland substrate elevation below piezometric surface	21				21
Primary Variables							
• Microrelief of Wetland Surface	•	Poorly Developed	3	3	1	3	3
	•	Absent	3	3	1	3	3
	•	Well Developed	2	2	2	2	2
	•	Pronounced	1	1	3	1	1
• Inlet/Outlet Class	•	Perennial Inlet/Intermittent Outlet	3	0	0	0	3
	•	All Other Classes	0	0	0	0	0
• pH	•	Acid	3	3	3	3	3
	•	Circumneutral	2	2	2	2	2
	•	Alkaline	1	1	1	1	1
	•	No water present	0	0	0	0	0
• Surficial Geologic Deposit Under Wetland	•	Glacial Till	3	1	1	1	3
	•	Low Permeability Stratified Deposits	2	2	2	2	2
	•	High Permeability Stratified Deposits	1	3	3	3	1
• Surface Water Level Fluctuation of the Wetland	•	High Fluctuation	3	3	0	3	3
	•	Low Fluctuation	2	2	0	2	2
	•	Never Inundated	1	1	0	1	1
• Wetland Water Regime	•	Drier: Seasonally Flooded, Temporarily Flooded, Saturated	3	3	0	3	3
	•	Wet: Permanently Flooded, Intermittently Exposed, Semipermanently Flooded	1	1	0	1	1
			—	—	—	—	—
• Soil Type	•	Gravelly or Sandy Mineral Hydric	3	3	0	3	3
	•	Silty or Clayey Mineral Hydric	2	2	0	2	2
	•	Sapric Histosol	1	1	0	1	1
	•	Fibric or Hemic Histosol	0	0	3	0	0
		Total Score:				15	
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	/ 18	/ 12	15=0.83 / 18	/ 21
		Index Range:	0.19-1.0	0.22-1.0	0.16-1.0	0.22-1.0	0.19-1.0

Note: This model should be applied to both year long and seasonal recharge wetlands.

If the wetland is seasonally fluctuating between recharge and discharge, then reduce the above score by one half (1/2), because the wetland only functions in a recharge mode for roughly half the year.

2.9.3 Storm and Flood-Water Storage

VARIABLES	CONDITIONS HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none						
Direct Indicators of Function	no outlet	27	21				30
Primary Variables							
• Inlet/Outlet Class	• perennial inlet/intermittent outlet	3	3	0	0	0	3
	• intermittent inlet/intermittent outlet	2	2	0	0	0	2
	• no inlet/intermittent outlet	1	1	0	0	0	1
	• non inlet/perennial outlet	1	1	0	0	0	1
	• intermittent inlet/perennial outlet	1	1	0	0	0	1
	• perennial inlet/perennial outlet	1	1	0	0	0	1
• Degree of Outlet Restriction	• restricted	3	0	0	0	0	3
	• unrestricted	0	0	0	0	0	0
• Basin Topographic Gradient	• low gradient	3	3	0	3	3	3
	• high gradient	1	1	0	0	1	1
• Wetland Water Regime	• Drier: seasonally flooded, temporarily flooded, saturated	3	3	3	0	3	3
	• Wet: permanently flooded, intermittently exposed, semipermanently flooded	1	1	1	0	1	1
• Surface Water Level Fluctuation of the Wetland	• high fluctuation	3	0	3	0	3	3
	• low fluctuation	2	0	2	0	2	2
	• never inundated	0	0	0	0	0	0
• Ratio of Wetland Area to Watershed Area	• large	3	3	3	0	3	3
	• small	1	1	1	0	1	1
• Microrelief of Wetland Surface	• pronounced	3	3	3	3	3	3
	• well developed	2	2	2	2	2	2
	• poorly developed	1	1	1	1	1	1
	• absent	0	0	0	0	0	0
• Frequency of Overbank Flooding	• overbank flooding absent	0	0	0	0	0	0
	• return interval of >5 yrs	0	0	1	0	1	1
	• return interval of 2-5 yrs	0	0	2	0	2	2
	• return interval of 1-2 yrs	0	0	3	0	3	3
• Vegetation Density/Dominance	• high/very high	3	3	3	3	3	3
	• moderate	2	2	2	2	2	2
	• sparse/low	1	1	1	1	1	1
	• no vegetation	0	0	0	0	0	0

(continued)

2.9.3 Storm and Flood-Water Storage (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
• Dead Woody Material	• abundant		3	3	3	3	3	3
	• moderately abundant		2	2	2	2	2	2
	• sparse		1	1	1	1	1	1
	• absent		0	0	0	0	0	0
			—	—	—	—	—	—
		Total Score:		13			16	
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score / 27	13/21 = 0.62	— / 21	— / 12	16/24 = 0.67	— / 30
		Index Range:	0.15-1.0	0.19-1.0	0.09-1.0	0-1.0	0.12-1.0	0.13-1.0

2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

VARIABLES	CONDITIONS	WEIGHTS
Indicators of Disfunction	no outlet	0
Direct Indicators of Function	none	

Primary Variables

Storm and Flood Water Storage Function Model Score			Modification of Groundwater Discharge Function Model Score			
High*	3	x	High	3	=	9
Mod	2	x	High	3	=	6
Low	1	x	High	3	=	3
High	3	x	Mod	2	=	6
Mod	2	x	Mod	2	=	4
Low	1	x	Mod	2	=	2
High	3	x	Low	1	=	3
Mod	2	x	Low	1	=	2
Low	1	x	Low	1	=	1

Total Score:

Model Range: 1-9 — 6/9 = 0.67

Functional Capacity Index: Total Score / 9 — 4/9 = 0.44

Index Range: 0.11-1.0

*High = FCI of 0.67-1.0, Mod = FCI of 0.34-0.66, Low = FCI of 0-0.33 for the Storm and Flood Water Storage and Modification of Ground Water Discharge Function Model Scores.

2.9.5 Modification of Water Quality

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	evidence of sedimentation		18	15	12	12	12	18
Primary Variables								
• Wetland Land Use	• low intensity		3	(3)	3	3	(3)	3
	• moderate intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• restricted outflow		3	0	0	0	0	3
	• no outlet		2	0	0	0	0	2
	• unrestricted outflow		1	(0)	0	0	(0)	1
• Inlet/Outlet Type	• no outlet		3	3	0	0	0	3
	• intermittent outlet		2	(2)	0	0	0	2
	• perennial outlet		1	1	0	0	0	1
• Dominant Wetland Type	• forested wetland		3	(3)	3	3	(3)	3
	• scrub-shrub		2	2	2	2	2	2
	• emergent wetland		2	2	2	2	2	2
	• aquatic bed		1	0	0	0	0	0
	• no vegetation		0	0	0	0	0	0
• Cover Distribution	• forming a continuous cover		3	(3)	3	3	(3)	3
	• growing in small scattered patches		2	2	2	2	2	2
	• one or more large patches		1	1	1	1	1	1
	• solitary scattered stems		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• histosol or clayey soil		3	3	3	3	3	3
	• silty soil		2	2	2	0	2	2
	• sandy or gravelly soil		1	(1)	1	0	(1)	1
			—	—	—	—	—	—
	Total Score:			12			10	
	Model Range:		4-18	3-15	2-12	1-12	2-12	4-18
	Functional Capacity Index:	Total Score	18	12/15 = 0.80	—/12	—/12	10/12 = 0.83	—/18
	Index Range:		0.22-1.0	0.20-1.0	0.16-1.0	0.8-1.0	0.16-1.0	0.22-1.0

2.9.5 Modification of Water Quality

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS D	S	L	EP	R	F
Indicators of disfunction	none							
Direct Indicators of Function	evidence of sedimentation		18	15	12	12	12	18
Primary Variables								
• Wetland Land Use	• low intensity		3	(3)	3	3	(3)	3
	• moderate intensity		2	2	2	2	2	2
	• high intensity		1	1	1	1	1	1
• Degree of Outlet Restriction	• restricted outflow		3	0	0	0	0	3
	• no outlet		2	0	0	0	0	2
	• unrestricted outflow		1	(0)	0	0	(0)	1
• Inlet/Outlet Type	• no outlet		3	3	0	0	0	3
	• intermittent outlet		2	(2)	0	0	0	2
	• perennial outlet		1	1	0	0	0	1
• Dominant Wetland Type	• forested wetland		3	(3)	3	3	(3)	3
	• scrub-shrub		2	2	2	2	2	2
	• emergent wetland		2	2	2	2	2	2
	• aquatic bed		1	0	0	0	0	0
	• no vegetation		0	0	0	0	0	0
• Cover Distribution	• forming a continuous cover		3	(3)	3	3	(3)	3
	• growing in small scattered patches		2	2	2	2	2	2
	• one or more large patches		1	1	1	1	1	1
	• solitary scattered stems		1	1	1	1	1	1
	• no vegetation		0	0	0	0	0	0
• Soil Type	• histosol or clayey soil		3	3	3	3	3	3
	• silty soil		2	2	2	0	2	2
	• sandy or gravelly soil		1	(1)	1	0	(1)	1
			—	—	—	—	—	—
	Total Score:			12			10	
	Model Range:		4-18	3-15	2-12	1-12	2-12	4-18
	Functional Capacity Index:	Total Score	18	12/15 = 0.80	—/12	—/12	10/12 = 0.83	—/18
	Index Range:		0.22-1.0	0.20-1.0	0.16-1.0	0.8-1.0	0.16-1.0	0.22-1.0

2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation

(This model is identical for all HGM types)

VARIABLES		CONDITIONS	WEIGHTS
Indicators of Disfunction		no vegetation	0
Direct Indicators of Function		none	
Primary Variables			
•	Plant Species Diversity	• high diversity • medium diversity • low diversity	(5) 3 1
•	Vegetation Density/Dominance	• high/very high • medium • sparse/low	(5) 3 1
•	Wetland Juxtaposition	• connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated	(5) 3 1 0
		Total Score:	15
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15 = 15/15 = 1.0
		Index Range:	0.13-1.0

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna

(This model is identical for all HGM types except Slope Wetlands for which "Interspersion of Vegetation Cover and Open Water" does not apply))

VARIABLES	CONDITIONS	WEIGHTS
Direct Indicators of Disfunction	none	
Direct Indicators of Function	none	
Primary Variables		
• Watershed Land Use	• low intensity (0-25% urbanized)	3
	• moderate intensity (25-50% urbanized)	2
	• high intensity (>50% urbanized)	1
• Wetland Land Use	• low intensity	3
	• moderate intensity	2
	• high intensity	1
• Wetland Water Regime	• wet: permanently flooded, intermittently exposed, semipermanently flooded	3
	• drier: seasonally flooded, temporarily flooded, saturated	1
• Microrelief of Wetland Surface	• pronounced	3
	• well developed	2
	• poorly developed	1
	• absent	0
• Number of Wetland types and Relative Proportions	• 5 or more types	3
	• 3-4 types	2
	• 1-2 types	1
	• no vegetation	0
	• even distribution	3
	• moderately even distribution	2
	• highly uneven distribution	1
	• no vegetation	0
• Vegetation Interspersion	• high interspersion	3
	• moderate interspersion	2
	• low interspersion	1
	• no vegetation	0
• Number of Layers and Percent Cover	• 5 or more layers	3
	• 3-4 layers	2
	• 1-2 layers	1
	• no vegetation	0
	• layers well developed (>50% cover)	3
	• layers with moderate cover (26-50% cover)	2
	• layers poorly distinguishable (<25% cover)	1
	• no vegetation	0

(continued)

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

VARIABLES	CONDITIONS	WEIGHTS
• Interspersion of Vegetation Cover and Open Water	• 26-75% scattered or peripheral	3
	• >75% scattered or peripheral	2
	• <25% scattered or peripheral	1
	• 100% cover or open water	1
	• no vegetation	0
• Size	• large (> 100 acres)	3
	• medium (10-100 acres)	2
	• small (< 10 acres)	1
• Wetland Juxtaposition	• other wetlands within 400 m and connected above or below	3
	• other wetlands within 400 m but not connected	1
	• wetland isolated	0

Slope Wetlands:

Model Range: 4-33

Functional Capacity Index = $\frac{\text{Total Score}}{33}$

Index Range: 0.12-1.0

All Other HGM Types:

Total Score:

Model Range: 4-36

Functional Capacity Index = $\frac{\text{Total Score}}{36}$

Index Range 0.11-1.0

$\frac{29}{36} = 0.78$

$\frac{29}{36} = 0.81$