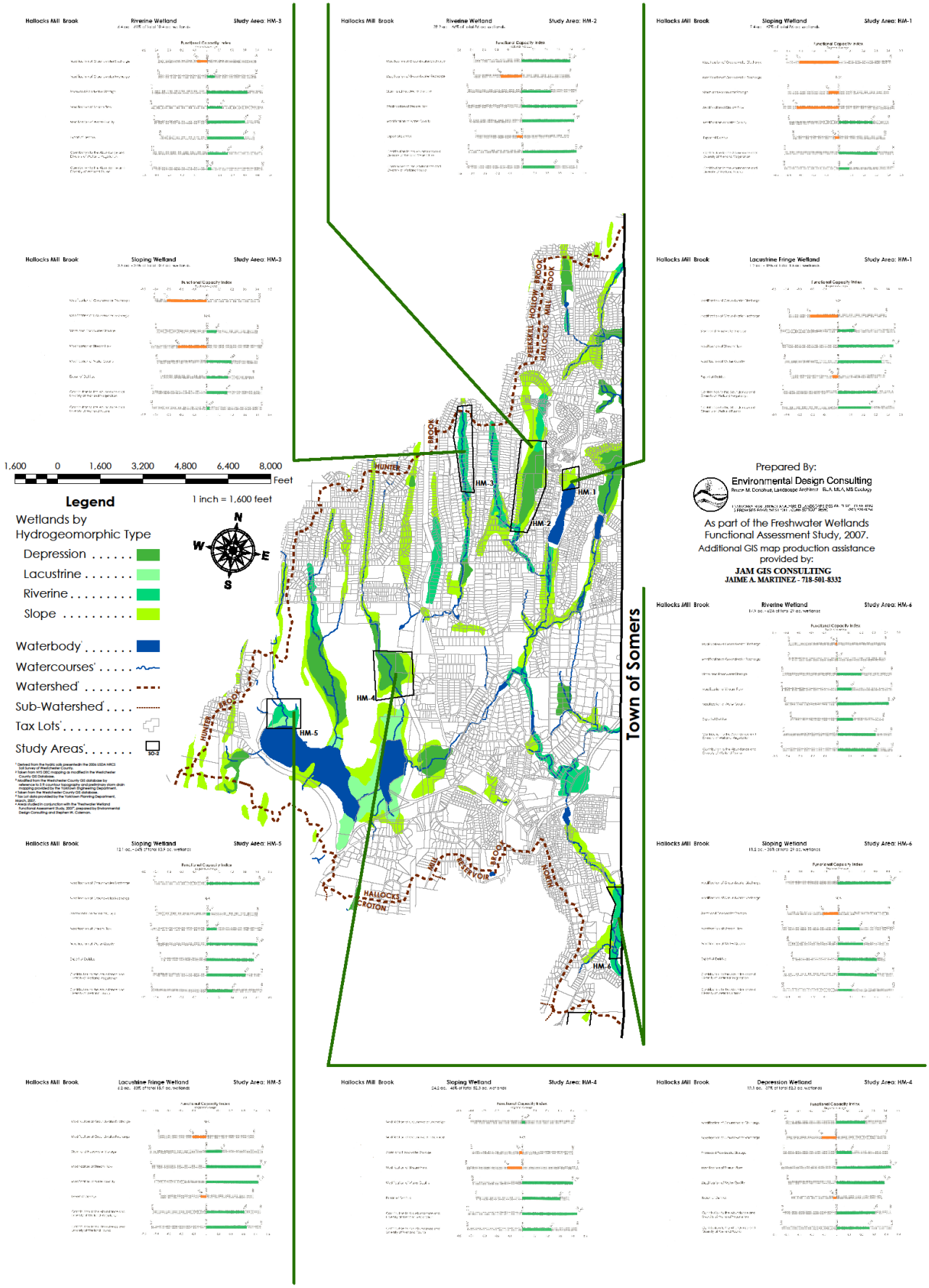
Town of Yorktown, New York

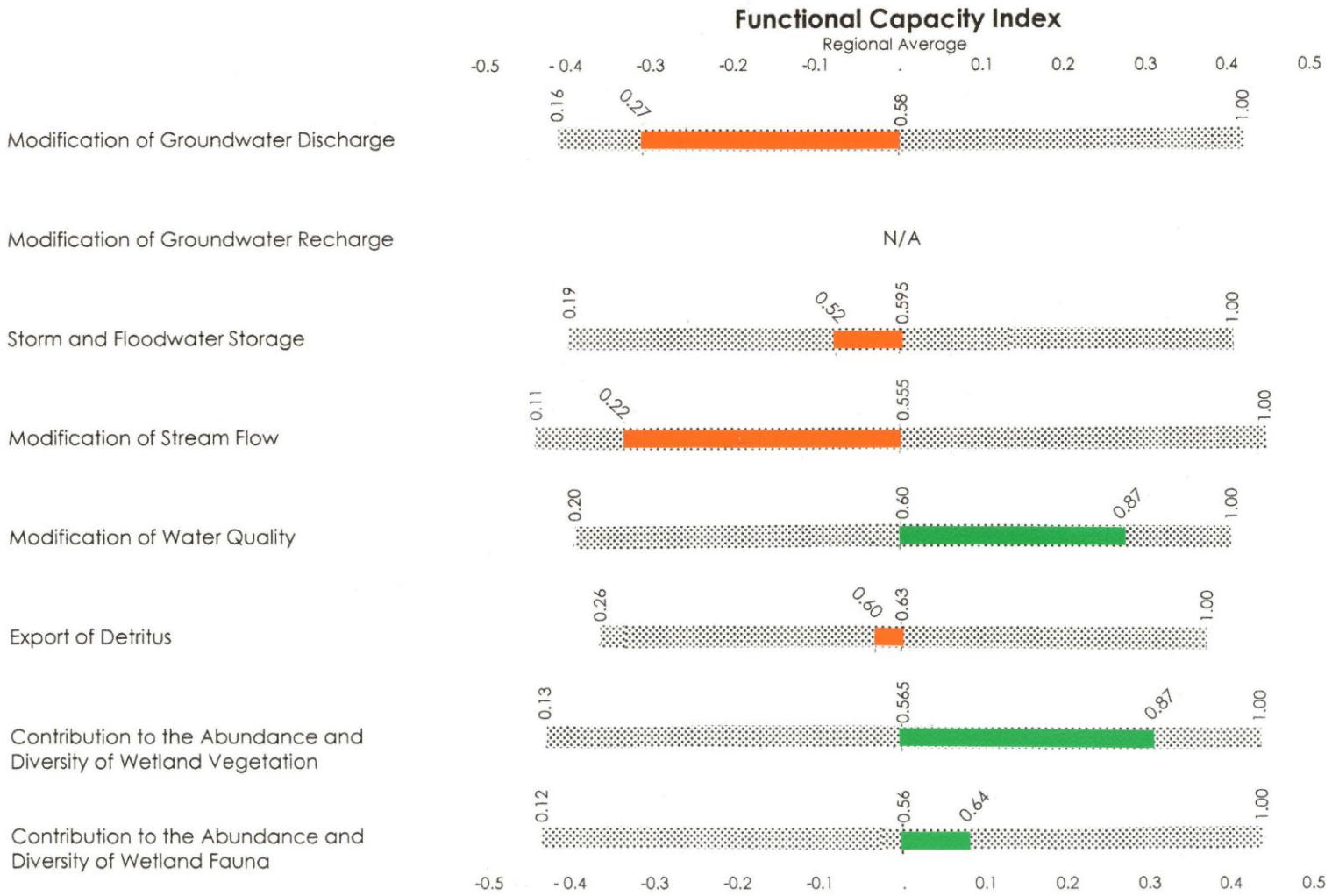
Wetland Functional Assessment Study

Hallock's Mill Brook Watershed



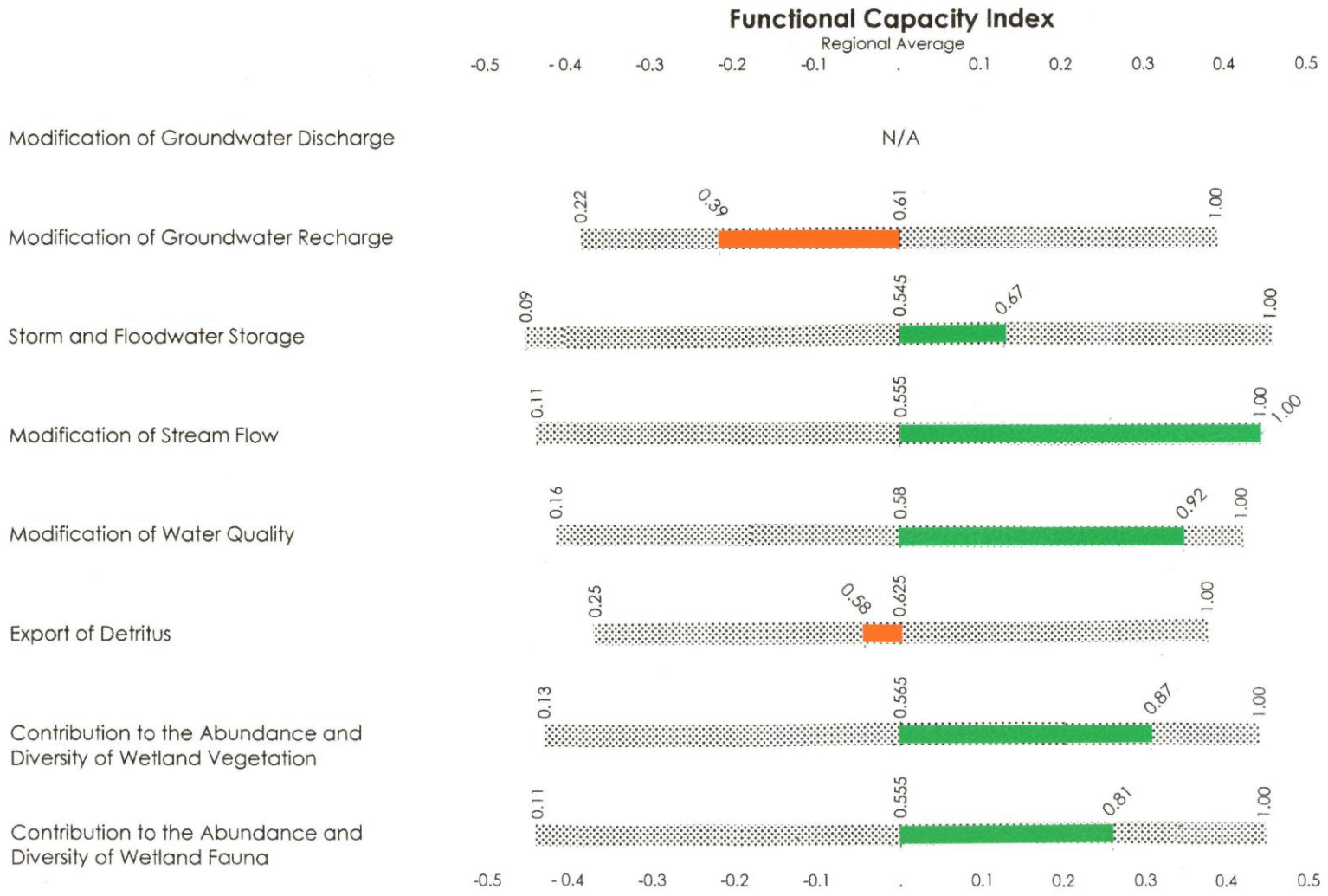
Hallocks Mill Brook **Sloping Wetland** **Study Area: HM-1**

2.4 ac. - 67% of total 36 ac. wetlands



Hallocks Mill Brook **Lacustrine Fringe Wetland** **Study Area: HM-1**

1.2 ac. - 33% of total 3.6 ac. wetlands



HM-1 SLOPE
LACUSTRINE

WETLAND INVENTORY DATA

Project Number: _____ **Date:** _____

Wetland Number: HM-2 SLOPE & LACUSTRINE

Aerial Photo Numbers: _____

USGS Quadrangle: _____

Field Investigators: _____

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	_____	Depressional
	67%	Slope
	_____	Flat
	_____	Extensive Peatland
	33%	Lacustrine Fringe
	_____	Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	_____
Deciduous	
Broad-leaved	100%
Needle-leaved	_____
Scrub Shrub	
Evergreen	
Broad-leaved	_____
Needle-leaved	_____
Deciduous	
Broad-leaved	100%
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: GLACIAL TILL

Bedrock:

Comments: _____

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
SKUNK CABBAGE						■							■
JAPANESE BARBERRY												■	
RED MAPLE						■			■	■			
SPICE BUSH						■					■		
ARROWWOOD VIB.											■		
HONEY SUCKLE SP											■		
MUSTARD GARLIC													■
PIGNUT HICKORY									■	■			
POISON IVY												■	
CINNAMON FERN													■
VIRGINIA CREEPER													■
SENSITIVE FERN													■
WITCHHAZEL											■		
SPECKLED ALDER											■		
JEWELWEED													■
PUSSY WILLOW						■					■		
GREEN ASH									■				
SWEET BIRCH									■				
WHITE ASH									■				

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:
- [ ] 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

HM-1 SLOPE (67%) LACUSTRINE FRINGE

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:				
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score	4 = 0.27	—	—
		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:					
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	7 / 18 = 0.39	/ 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:		11	14			
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score	11 = 0.52	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

Functional Capacity Index: Total Score 2 / 9 = 0.22

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:			13	11			
	Model Range:		4-18	3-15	2-12	1-12	2-12	4-18
	Functional Capacity Index:		Total Score / 18	13 / 15 = 0.87	11 / 12 = 0.92	— / 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:		9	7			
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index:	Total Score	9=0.60	7=0.58			
			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	5
		• medium diversity	(3)
		• low diversity	1
•	Vegetation Density/Dominance	• high/very high	(5)
		• medium	3
		• sparse/low	1
•	Wetland Juxtaposition	• connected upstream and downstream	(5)
		• connected above or below	3
		• other wetlands nearby but not connected (400 m or closer)	1
		• isolated	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)

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

21 29

Slope Wetlands:

Model Range: 4-33

Functional Capacity Index = $\frac{\text{Total Score}}{33}$ $\frac{21}{33} = 0.64$

Index Range: 0.12-1.0

All Other HGM Types:

Total Score:

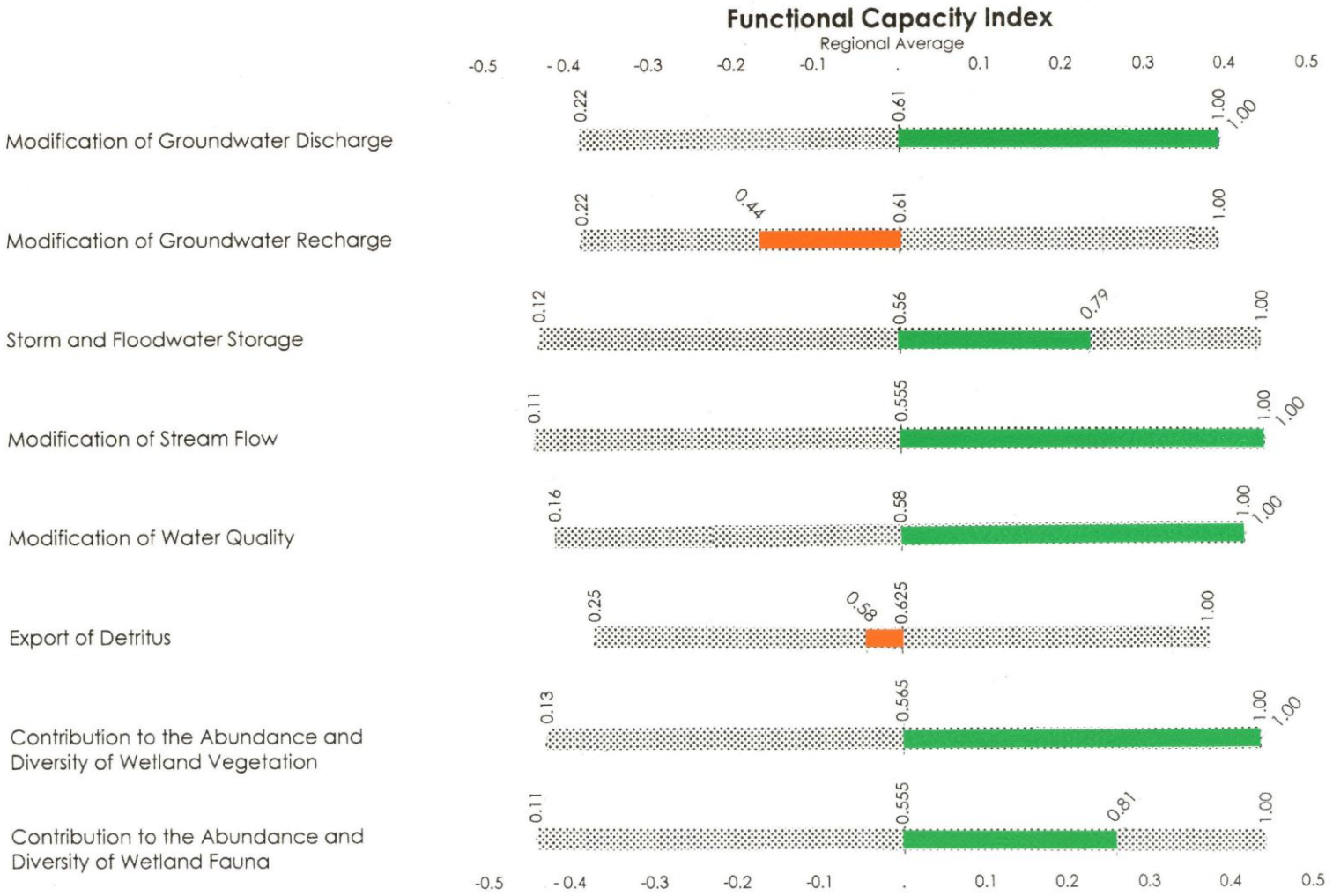
Model Range: 4-36

Functional Capacity Index = $\frac{\text{Total Score}}{36}$ $\frac{29}{36} = 0.81$

Index Range 0.11-1.0

Hallocks Mill Brook **Riverine Wetland** **Study Area: HM-2**

23.9 ac. - 66% of total 36 ac. wetlands



RIVERINE 24 ac 66%
SLOPE 7 ac 20%*
DEPRESSION 5 ac 14%*
36 ac Total

WETLAND INVENTORY DATA

Project Number: _____ Date: _____

Wetland Number: HM-2

Aerial Photo Numbers: _____

USGS Quadrangle: MOHEGAN LAKE

Field Investigators: BD

* WETLAND CLASSES < 25% ARE NOT EVALUATED SEPARATELY

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	13.5	Depressional
	20.0%	Slope
	____	Flat
	0	Extensive Peatland
	0	Lacustrine Fringe
	66.3%	Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	____
Deciduous	
Broad-leaved	98%
Needle-leaved	____
Scrub Shrub	
Evergreen	
Broad-leaved	____
Needle-leaved	____
Deciduous	
Broad-leaved	2%
Needle-leaved	____
Emergent Wetland	
Persistent	____
Non-persistent	____
Aquatic Bed	61%
Total	100%

SOIL TYPES

Histosol
- Fibric ☐
- Hemic ☐
- Sapric ■

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

GEOLOGY

Surficial: GLACIAL TILL

Bedrock:

Comments: _____

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
American Beech								■	■				
Witchhazel							■				■		
Silky Dogwood							■				■		
Virginia Creeper							■					■	
Skunk Cabbage						■							■
Mustard Garlick							■						■
River Birch							■		■				
Spice Bush							■				■		
Multiflora Rose							■				■		
Japanese Barberry							■					■	
Hornbeam							■		■				
Poison Ivy							■					■	
Jack-in-the-Pulpit							■						■
Jewelweed							■						■
Tussock Grass							■						■
Green Ash							■		■				
Red Maple							■		■				
Cinnamon Fern							■						■
Basswood							■		■				
Black Walnut							■		■				
Winterberry							■				■		
Marsh Marigold							■						■
Violet							■						■
Sensitive Fern							■						■
Royal Fern							■						■
American Elm							■		■				
Oriental Bittersweet							■					■	
Highbush Blueberry							■				■		
Summersweet Clethera							■				■		
Japanese Honeysuckle							■					■	

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

HM-2 Riverine

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:				
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score 18	—	15 = 1.0 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:				8	
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	/ 18	/ 12	8 / 18 = 0.44	/ 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
			—	—	—	—	19	—
		Total Score:						
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score				R = 0.79	
			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

Functional Capacity Index: Total Score 9 = 1.0

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:						
	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
			—	—	—	—	7	—
		Total Score:						
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index:	Total Score				7 = 0.58	
			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:	15
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 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
		29

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:

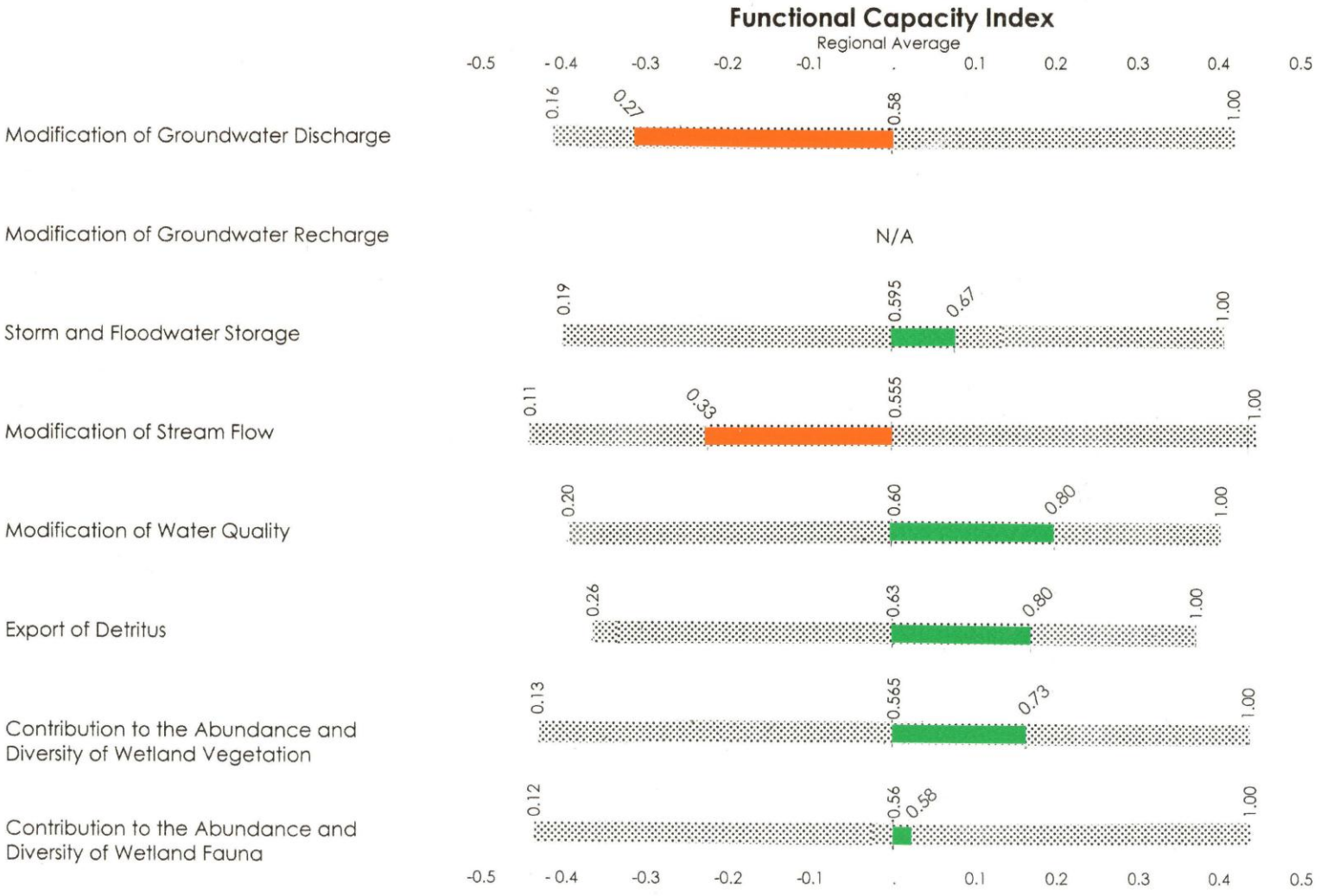
Model Range: 4-36

Functional Capacity Index = $\frac{\text{Total Score}}{36}$ $29 = 0.81$

Index Range 0.11-1.0

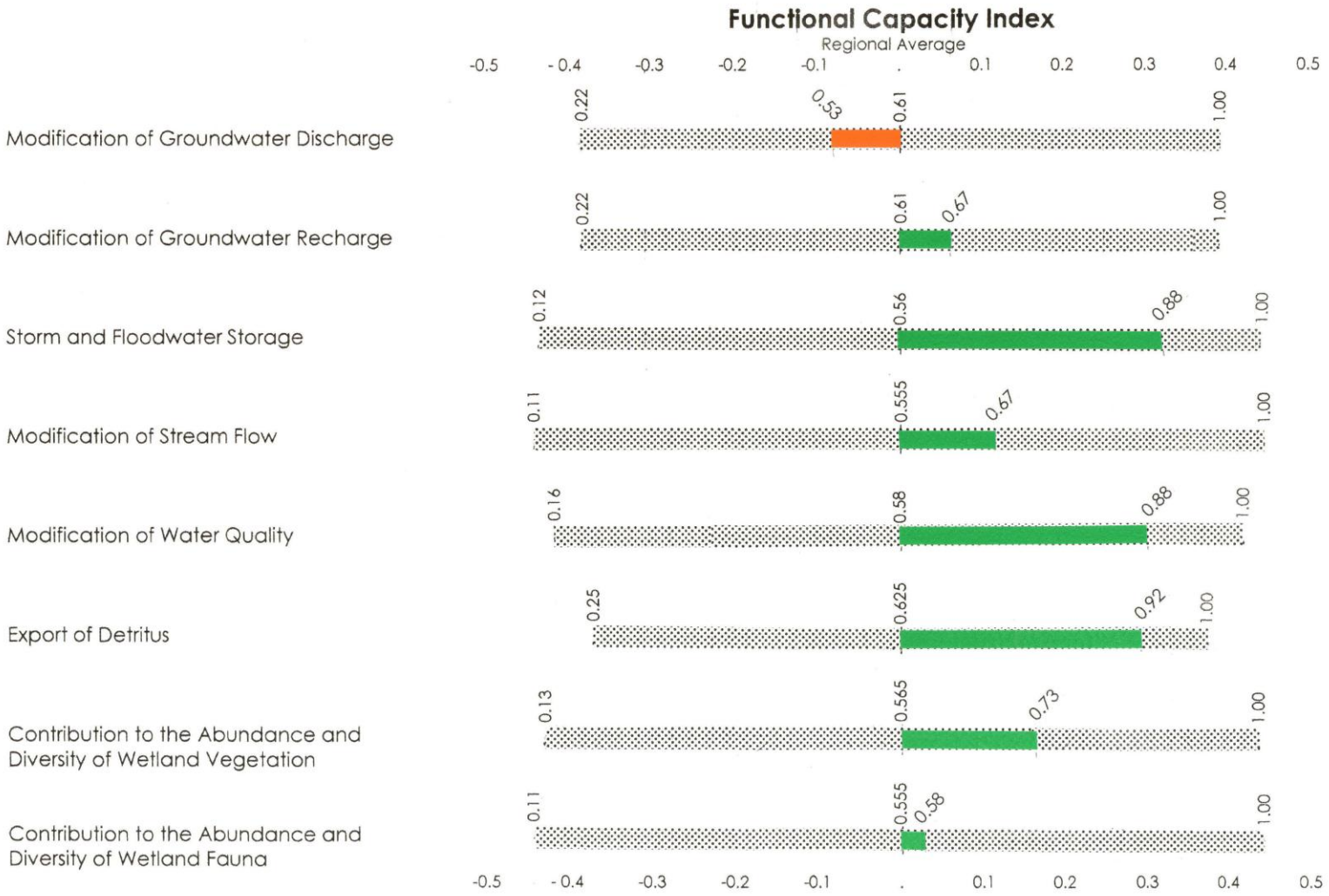
Hallocks Mill Brook **Sloping Wetland** **Study Area: HM-3**

3.5 ac. - 34% of total 10.4 ac. wetlands



Hallocks Mill Brook **Riverine Wetland** **Study Area: HM-3**

6.4 ac. - 61% of total 10.4 ac. wetlands



WETLAND INVENTORY DATA

RIVERINE 6.37 ac (61%)
SLOPE 3.49 ac (34%)
DEPRESSION 0.56 ac (5%) *

Project Number: YORKTOWN
Date:
Wetland Number: HM-3
* WETLAND CLASSES LESS THAN 25% ARE NOT EVALUATED SEPARATELY
Aerial Photo Numbers:
USGS Quadrangle: MOHEGAN LAKE
Field Investigators: BD

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	5.4%	Depressional
	33.5%	Slope
	____	Flat
	____	Extensive Peatland
	____	Lacustrine Fringe
	61.1%	Riverine

VEGETATION TYPES

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

SOIL TYPES

Histosol
- Fibric ☐
- Hemic ☐
- Sapric ☐

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

GEOLOGY

Surficial:

Bedrock:

Comments: WATERSHED DIVIDE BETWEEN HOLLOCKS MILL & SHRUB OAK FLUCTUATES. DEPRESSION AREA DRAINS SOUTH UNDER MOST CONDITIONS. DURING HIGH RUNOFF EVENTS IT ALSO DRAINS NORTH

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
RAMP								■					■
SUGAR MAPLE								■	■				
RIVER BIRCH						■		■	■				
AMERICAN BEECH								■	■				
AMERICAN ELM								■	■				
TULIP POPLAR							■	■	■				
PIGNUT HICKORY								■	■				
SKUNK CABBAGE						■	■						■
CHRISTMAS FERN								■					■
VIRGINIA CREEPER								■					■
SPICEBUSH						■	■				■		
JACK-IN-THE-PULPIT								■					■
BASSWOOD								■	■				
HORNBEAM								■	■				
HACKBERRY								■	■				
SILKY DOGWOOD							■				■		
RED MAPLE							■	■	■				
GREEN ASH								■	■				
SCOURING RUSH								■					■
QUAKING ASPEN								■	■				
PHRAGMITES						■							■
PIN OAK								■	■				
SILVER MAPLE								■	■				
RUSH SP						■							■
SWEET BIRCH								■	■				
TUSSOCK SEDGE						■							■
RED OAK								■	■				
JEWEL WEED						■							■
HOWLER SICKLE						■							■
TROUT LILY								■					■

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)
- [x] 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:
- [x] > 50% urbanized
- [ ] 25-50% urbanized
- [ ] 0-25% urbanized

HYDROLOGIC VARIABLES

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

Frequency of Overbank Flooding:
- [ ] Return Interval > 5 yrs.
- [ ] Return Interval 2-5 yrs.
- [x] Return Interval 1-2 yrs.
- [x] 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
- [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%
- [x] Low Gradient <2%

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

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

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

Inlet/Outlet Class:
- [ ] No Inlet/No Outlet
- [x] No Inlet/Intermittent Outlet
- [ ] No Inlet/Perennial Outlet
- [ ] Intermittent Inlet/No Outlet
- [x] 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
- [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:
- [x] No Evidence Observed
- [ ] Sediment Observed on Wetland Substrate
- [ ] Fluvaquent Soils

Evidence of Seeps and Springs:
- [x] No Seeps or Springs
- [ ] 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
- [ ] Actual #
- [ ] 5
- [x] 4
- [ ] 3
- [ ] 2
- [ ] 1

Evenness of Distribution
- [ ] Even Distribution
- [ ] Moderately Even Distribution
- [ ] Highly Uneven Distribution

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

Number of Layers and Percent Cover:

Number of Layers
- [ ] 6 or > (actual #)
- [x] 5
- [ ] 4
- [ ] 3
- [ ] 2
- [ ] 1

% Cover
1. submergents:
2. floating:
3. moss-lichen:
4. short herb:
5. tall herb:
6. dwarf shrub:
7. short shrub:
8. tall shrub:
9. sapling:
10. tree:

Plant Species Diversity:
- [ ] Low 1-2 plots sampled
- [x] Medium 3-4 plots sampled
- [ ] 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:
- [ ] 26-75% Scattered or Peripheral
- [ ] >75% Scattered or Peripheral
- [ ] <25% Scattered or Peripheral
- [x] 100% Cover or Open Water

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

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

HM-3 RIVERINE 6.4 ac (61%)
SLOPE 3.5 ac (34%)
*DEPRESSION 0.6 ac (5%)
10.4 ac

* WETLAND CLASSES LESS THAN 25% OF TOTAL WETLAND NOT ASSESSED SEPARATELY

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:				
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score	4 = 0,27	8 = 0,53	
		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:				12	
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	/ 18	/ 12	12 / 18 = 0.67	/ 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:		4			21	
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score	4/21 = 0.67	—	—	21/24 = 0.88	—
			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

Functional Capacity Index: Total Score 9 (6/9 = 0.67; 3/9 = 0.33)

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

2.9.6 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 = 0.80			11 = 0.92	
			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	5
		• medium diversity	(3)
		• low diversity	1
•	Vegetation Density/Dominance	• high/very high	(5)
		• medium	3
		• sparse/low	1
•	Wetland Juxtaposition	• connected upstream and downstream	5
		• connected above or below	(3)
		• other wetlands nearby but not connected (400 m or closer)	1
		• isolated	0
		Total Score:	11
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15
		Index Range:	0.13-1.0

11 = 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

21 25

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 = $\frac{\text{Total Score}}{36}$

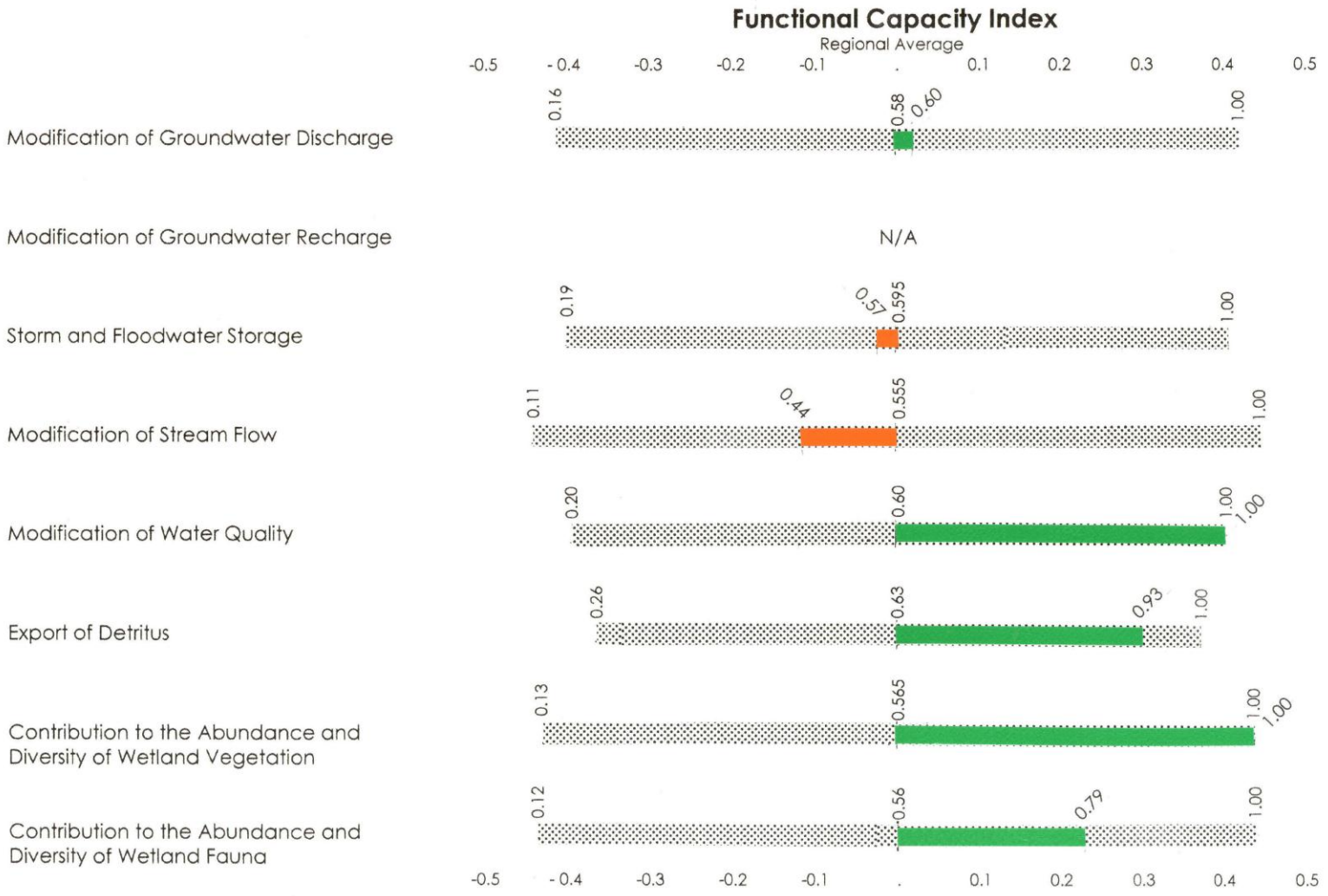
Index Range 0.11-1.0

$\frac{21}{36} = 0.58$

$\frac{25}{36} = 0.69$

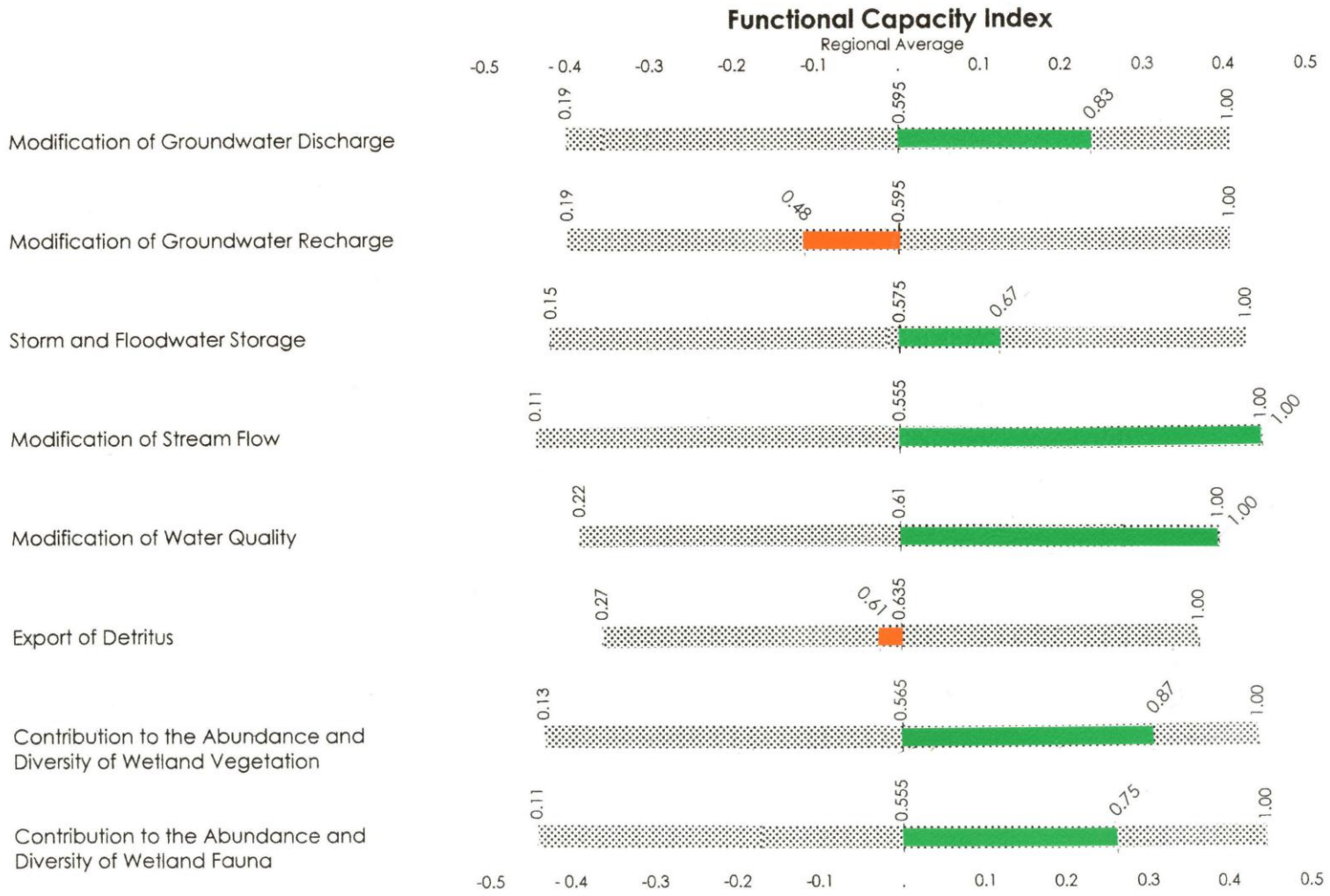
Hallocks Mill Brook **Sloping Wetland** **Study Area: HM-4**

24.2 ac. - 46% of total 52.3 ac. wetlands



Hallocks Mill Brook **Depression Wetland** **Study Area: HM-4**

19.1 ac. - 37% of total 52.3 ac. wetlands



WETLAND INVENTORY DATA

Slope - 24.2 ac = 46%
Depression (+ Lucrinz*) 19.1 + 9 = 28.1 ac = 54%
Both
*HGM Types < 25% of wetland total not assessed separately)

Project Number: YORKTOWN **Date:**
Wetland Number: HM-4
Aerial Photo Numbers:
USGS Quadrangle: Mohegan Lake
Field Investigators: BD. JC

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	37% / 19.1 ac	Depressional
	46% / 24.2 ac	Slope
		Flat
		Extensive Peatland
		Lacustrine Fringe
	17% / 9.0 ac	Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	
Deciduous	
Broad-leaved	63% / 16.3 ac 100% / 28.1 ac
Needle-leaved	
Scrub Shrub	
Evergreen	
Broad-leaved	
Needle-leaved	
Deciduous	
Broad-leaved	37% / 7.9 ac
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: Glacial till

Bedrock:

Comments:

PLANT SPECIES

	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
Red Maple						■	■		■				
American Elm							■		■				
American Beech								■	■				
Spicebush							■				■		
Poison Ivy							■				■		
Oriental Bittersweet								■				■	
Cinnamon Fern							■						■
Highbush Blueberry							■				■		
Tulip Poplar								■					
Multiflora Rose							■				■		
Blackhaw Viburnum							■				■		
Pussy Willow								■			■		
Skunk Cabbage							■						■
Norway Spruce								■	■				
Redosier Dogwood							■				■		
Phragmites								■					■
Tussock Sedge						■		■					■
Winterberry							■				■		
White Oak								■	■				
Shagbark Hickory								■	■				
Japanese Honeysuckle						■					■		
Hornbeam								■	■				
Staghorn Sumac								■					
Swamp White Oak								■	■				
White Ash							■		■				
Green Ash							■		■				
Silky Dogwood							■				■		
Purple Leosestrife								■					■
Grape								■					

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:
- ☐ 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

HM-4 Total Wetland = 52.3 ac
Slope 24.2 ac (46%)
Depression 19.1 ac (37%)
Riverine 9.0 (17%) ∴ ≤25% Total Wetlands combined w/ Depression.
Both

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	9	—	—
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score / 18 = 0.83	9 = 0.60 / 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:	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	12	—	—	—	—
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score / 27	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:

Model Range: 1-9 (9/9 = 1.0)

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:	—	—	—	—	—	—
		Model Range:	4-18	3-15	2-12	1-12	2-12	4-18
		Functional Capacity Index:	Total Score / 18	15 = 1.0	— / 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

2.9.5 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 = 1.0	— / 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

2.9.7 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	5
		• medium diversity	3
		• low diversity	1
•	Vegetation Density/Dominance	• high/very high	5
		• medium	3
		• sparse/low	1
•	Wetland Juxtaposition	• connected upstream and downstream	5
		• connected above or below	3
		• other wetlands nearby but not connected (400 m or closer)	1
		• isolated	0
		Total Score:	
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15
		Index Range:	0.13-1.0

15/15 = 1.0

13/15 = 0.87

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

17

26 27

Slope Wetlands:

Model Range: 4-33

Functional Capacity Index = $\frac{\text{Total Score}}{33}$ $\frac{26}{33} = 0.79$

Index Range: 0.12-1.0

All Other HGM Types:

Total Score:

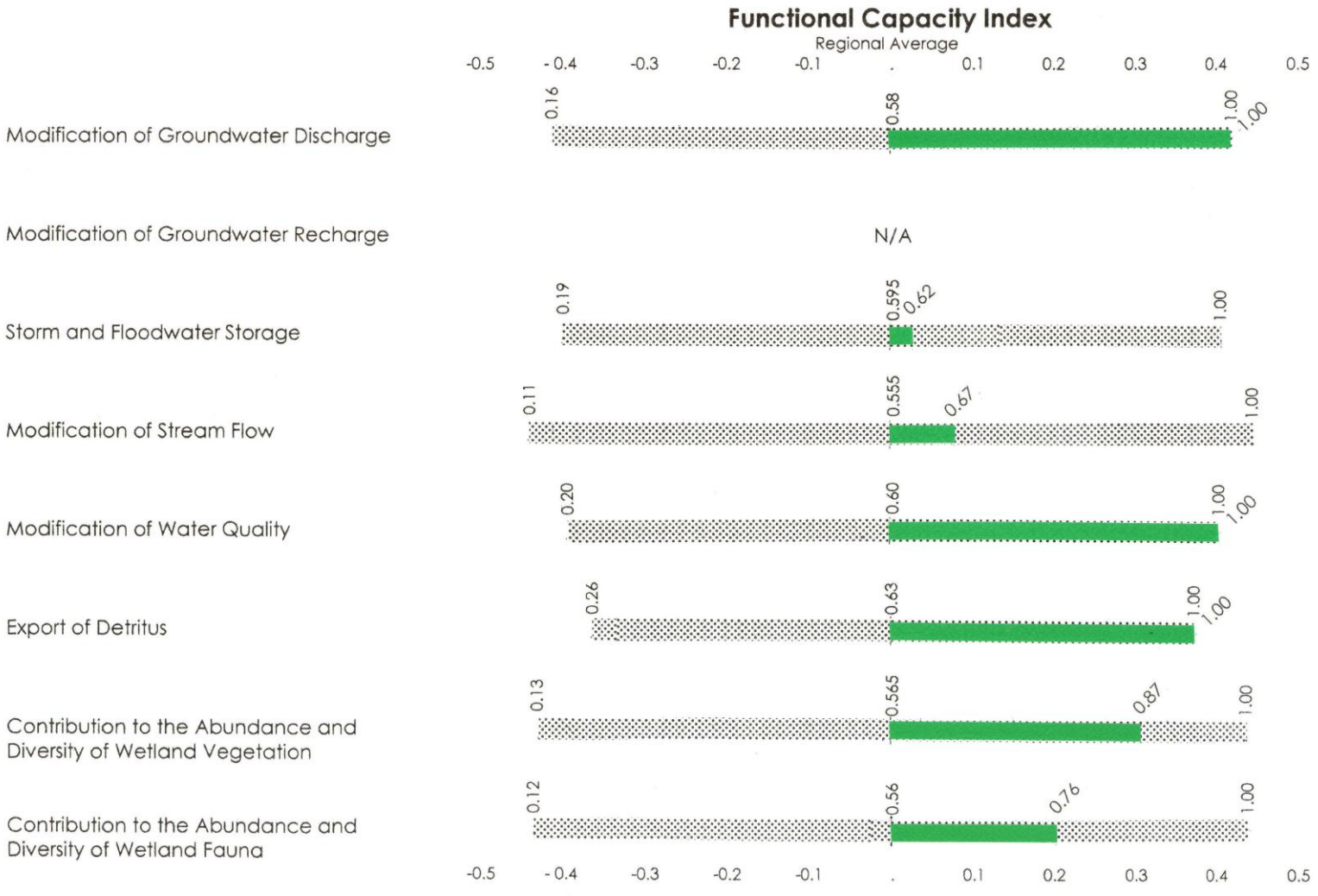
Model Range: 4-36

Functional Capacity Index = $\frac{\text{Total Score}}{36}$ $\frac{27}{36} = 0.75$

Index Range 0.11-1.0

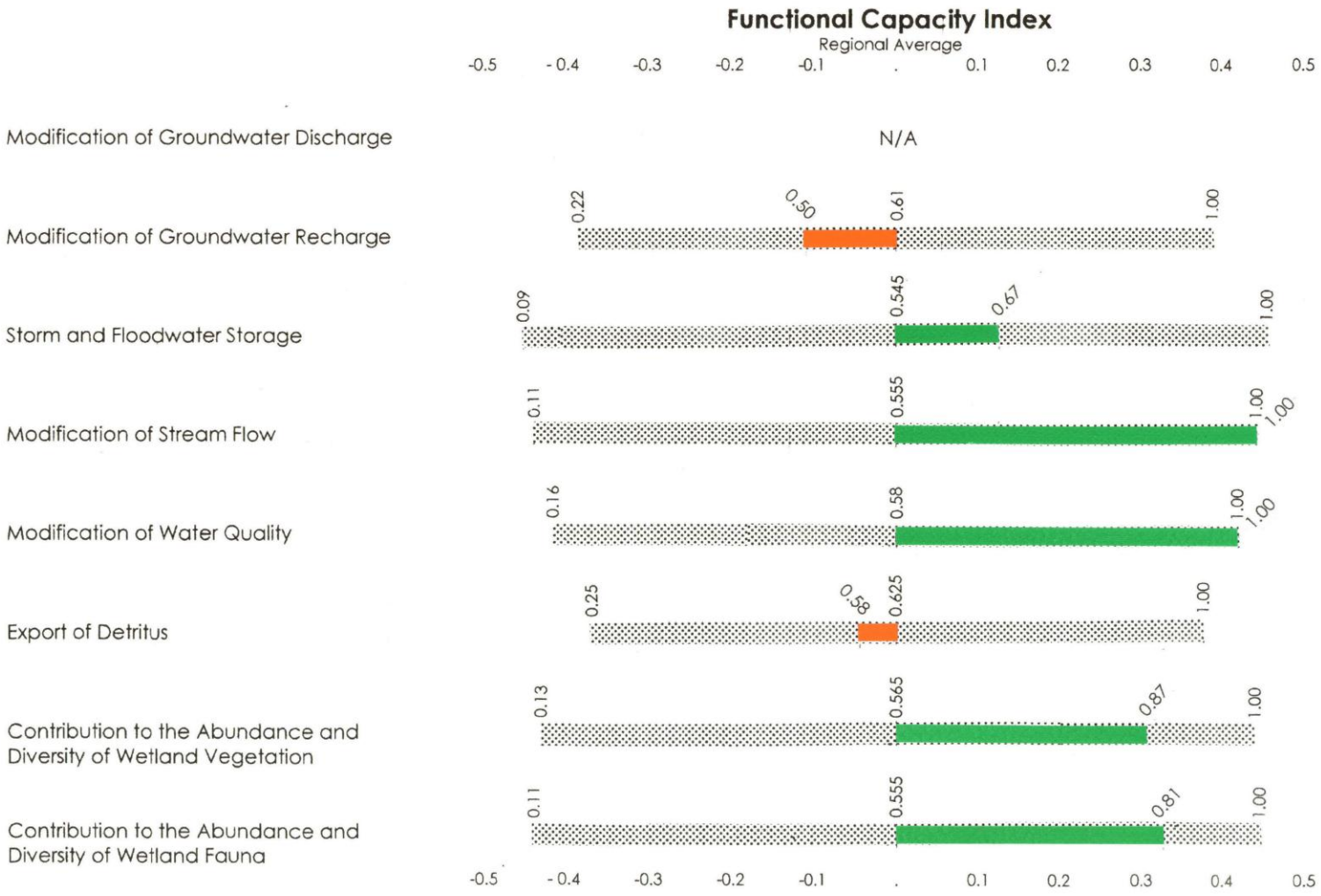
Hallocks Mill Brook **Sloping Wetland** **Study Area: HM-5**

12.1 ac. - 64% of total 18.9 ac. wetlands



Hallocks Mill Brook **Lacustrine Fringe Wetland** **Study Area: HM-5**

6.2 ac. - 33% of total 18.9 ac. wetlands



WETLAND INVENTORY DATA

Total 19 ac
Slope 12 ac 64%
Lacustrine 6 ac 33%
* Depress. 0.7ac 4%

Project Number: YORKTOWN
Wetland Number: HM-5
Aerial Photo Numbers:
USGS Quadrangle: MOHEGAN LAKE
Field Investigators: BD

Date:

* HGM TYPES < 25% NOT ASSESSED SEPARATELY

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	4%	Depressional
	64%	Slope
		Flat
		Extensive Peatland
	33%	Lacustrine Fringe
		Riverine

VEGETATION TYPES

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

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
Red Maple						■			■				
Silky Dogwood						■				■			
Spicebush						■				■			
Cinnamon Fern							■						■
Blackhaw Viburnum							■				■		
Apple								■	■				
Winterberry								■			■		
Red Oak								■	■				
Black Oak								■	■				
Sweet Birch								■	■				
Phragmites							■						■
Green Ash								■	■				
Tussock Sedge							■					■	■
poison Ivy							■					■	
Bittersweet												■	
River Birch								■	■				
Honeysuckle								■			■		
White Ash								■	■				
Grape								■					■
Silver Maple								■	■				
Mustard Garlic							■						■

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

HM-5 19 ac Total
12 ac Slope
6 ac Lacustrine
0.7 ac Depression — Not Assessed ∴ <25% of total
Both

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:				
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score 18	15 = 1.0 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:		9			
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	9 / 18 = 0.5	/ 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:		11	14			
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score	13 = 0.62	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 (4/4 = 1.0 *)

Functional Capacity Index: Total Score 6 = 0.67
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.

* patches of open water observed during winter freeze of Lake Mohonnegic indicative of active springs. which would result in a FCI of 1.0 for ground water discharge function.

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:		15				
		Model Range:	4-18	3-15	2-12	1-12	2-12	4-18
		Functional Capacity Index:	Total Score / 18	15 / 15 = 1.0	12 / 12 = 1.0	— / 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
			—	— 15	— 7	—	—	—
		Total Score:						
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index:	Total Score 18	15 =1.0 15	7 =0.58 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:	13
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15 = 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)

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 = $\frac{\text{Total Score}}{33}$ 25 = 0.76

Index Range: 0.12-1.0

All Other HGM Types:

Total Score: 25 29

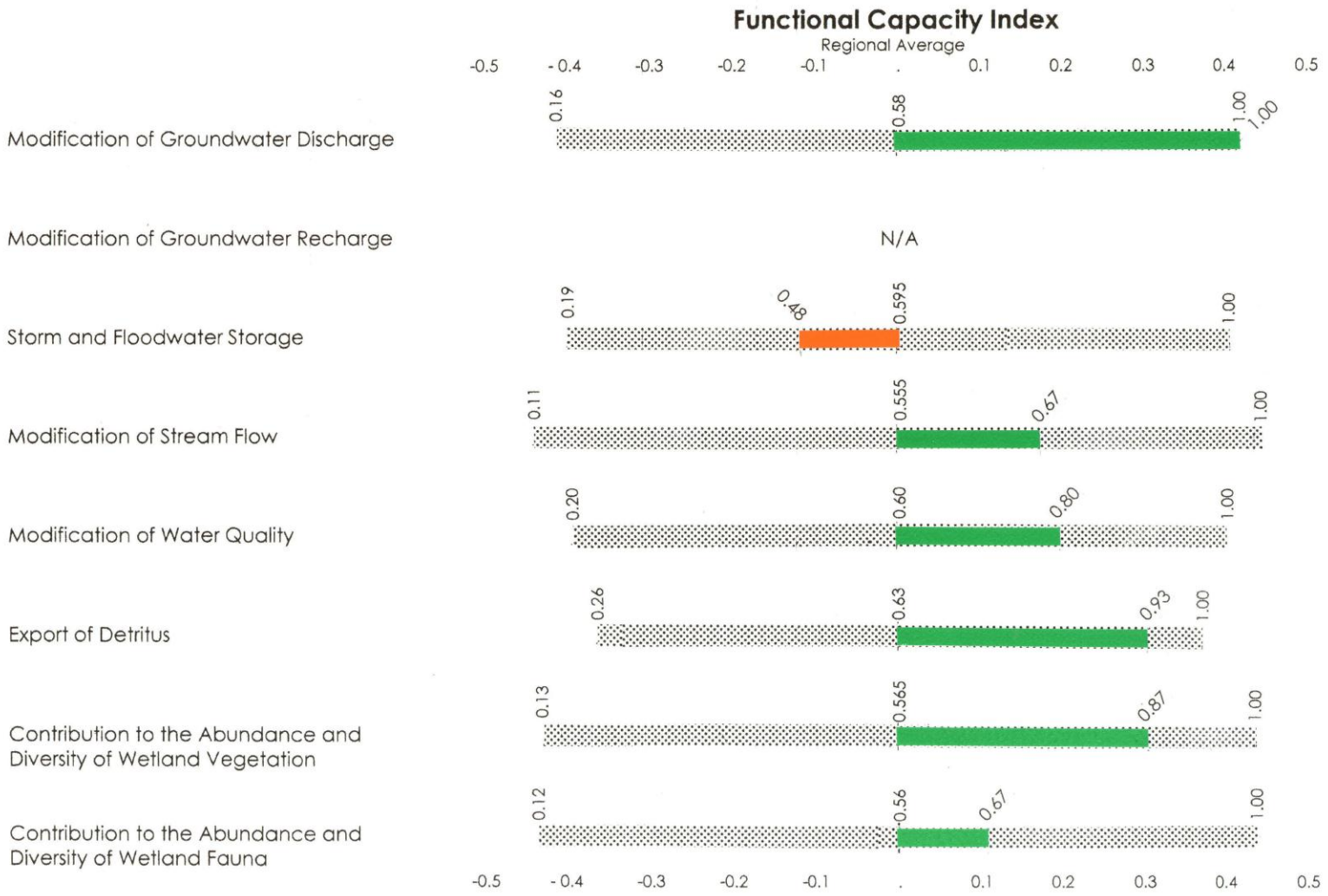
Model Range: 4-36

Functional Capacity Index = $\frac{\text{Total Score}}{36}$ 29 = 0.81

Index Range 0.11-1.0

Hallocks Mill Brook **Sloping Wetland** **Study Area: HM-6**

11.2 ac. - 38% of total 29 ac. wetlands



Hallocks Mill Brook **Riverine Wetland** **Study Area: HM-6**

17.9 ac. - 62% of total 29 ac. wetlands

RIVERINE
SLOPING
BOTH

WETLAND INVENTORY DATA

Project Number: Yorktown **Date:** _____

Wetland Number: HM-6

Aerial Photo Numbers: _____

USGS Quadrangle: Mounard Lake

Field Investigators: R. Donovan

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS

Condition	Percent/Acreage	
	_____	Depressional
	38%	Slope
	_____	Flat
	_____	Extensive Peatland
	_____	Lacustrine Fringe
	62%	Riverine

VEGETATION TYPES

Type	Percent/Acreage
Forested Wetland	
Evergreen	
Needle-leaved	_____
Deciduous	
Broad-leaved	100%
Needle-leaved	_____
Scrub Shrub	
Evergreen	
Broad-leaved	_____
Needle-leaved	_____
Deciduous	
Broad-leaved	_____
Needle-leaved	_____
Emergent Wetland	
Persistent	_____
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
RED MAPLE						▨			■				
AMERICAN ELM						■			■				
SKUNK CABBAGE						■							■
HEMLOCK SAPLING						■							■
ROSE - MULTIFLORA							■				■		
ARROWWOOD VIBURNUM								■			■		
SILKY DOGWOOD							■				■		
SENSITIVE FERN							■						■
CINNAMON FERN							■						■
VIRGINIA CREEPER						■							■
WHITE ASH							■		■				
SUGAR MAPLE							■		■				
FALSE NETTLE							■						■
HONEYSUCKLE							■				■		
WINTERBERRY						■					■		
STEEPLEBUSH							■						■
PEPPERBUSH						■							■
RED CHOKEBERRY							■				■		
SPICEBUSH						■					■		
GREEN ASH						■			■				
POISON IVY						■							■
ROYAL FERN							■						■
JAPANESE BARBERRY						■					■		
JACK-IN-THE-PULPIT							■						■
BLUE LOBELIA							■						■
TOUCH-ME-NOT							■						■
SILVER MAPLE							■		■				
SWEET BIRCH						■			■				
ORIENTAL BITTERSWEET						■							■

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

HM-6
29.0 ± ac

RIVERINE 17.9 ac 62%
SLOPING 11.5 ac 38%

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
		–	–	9	–
	Total Score:				
	Model Range:	3-18	2-15	3-15	3-18
	Functional Capacity Index:	Total Score 18	15 = 1.0 15	9 = 0.60 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:				11	
		Model Range:	4-21	4-18	2-12	4-18	4-21
		Functional Capacity Index:	Total Score / 21	/ 18	/ 12	11 / 18 = 0.61	/ 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:		10			18	
		Model Range:	4-27	4-21	2-21	0-12	3-24	4-30
		Functional Capacity Index:	Total Score 27	10/21 = 0.48	—	—	18/24 = 0.75	—
		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

Functional Capacity Index: Total Score 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
	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 = 0.80	— / 12	— / 12	12 / 12 = 1.0	— / 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:		14			9	
		Model Range:	5-18	4-15	3-12	2-10	3-12	5-18
		Functional Capacity Index:	Total Score	14 = 0.93			9 = 0.75	
			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:	13
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15 = 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)