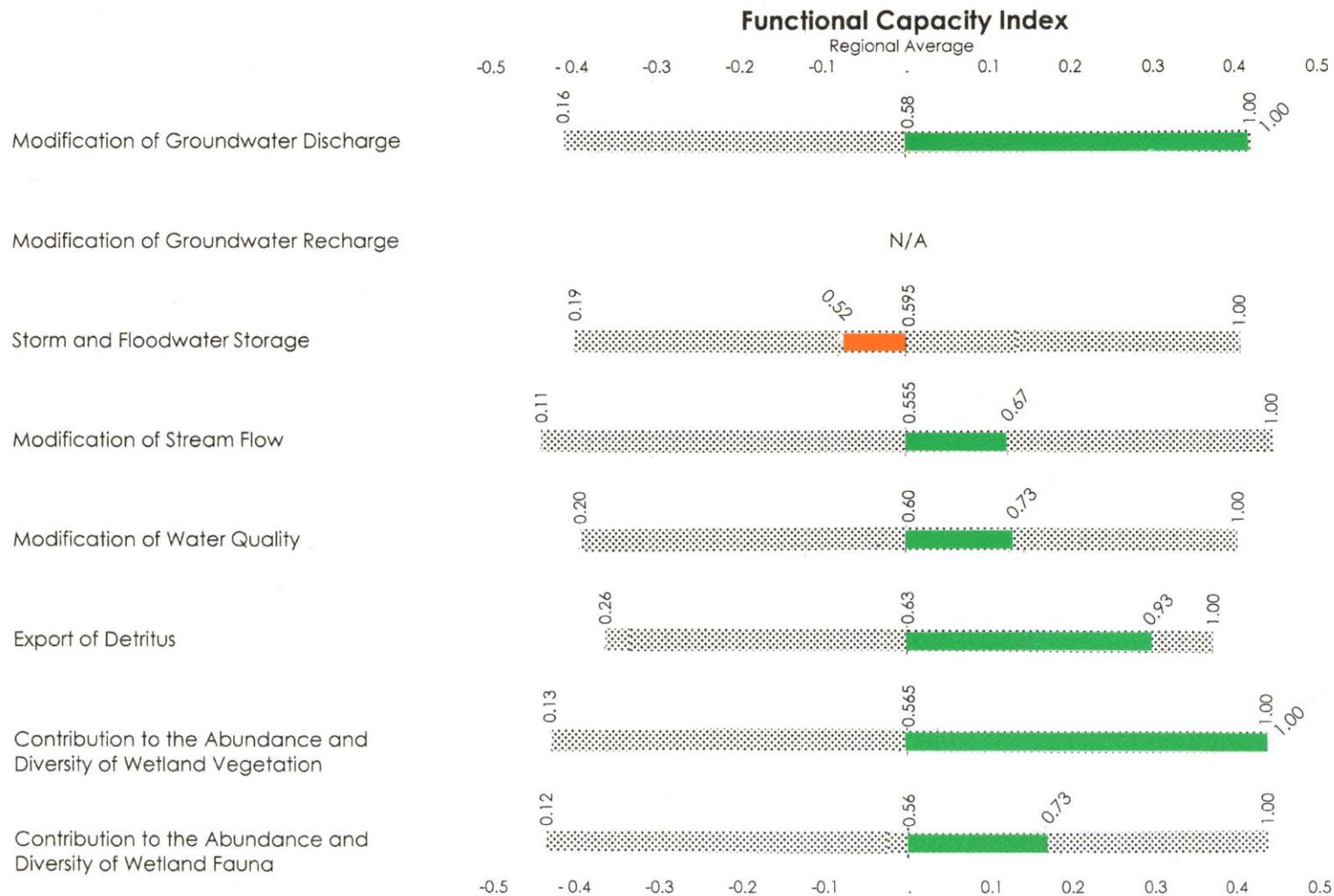
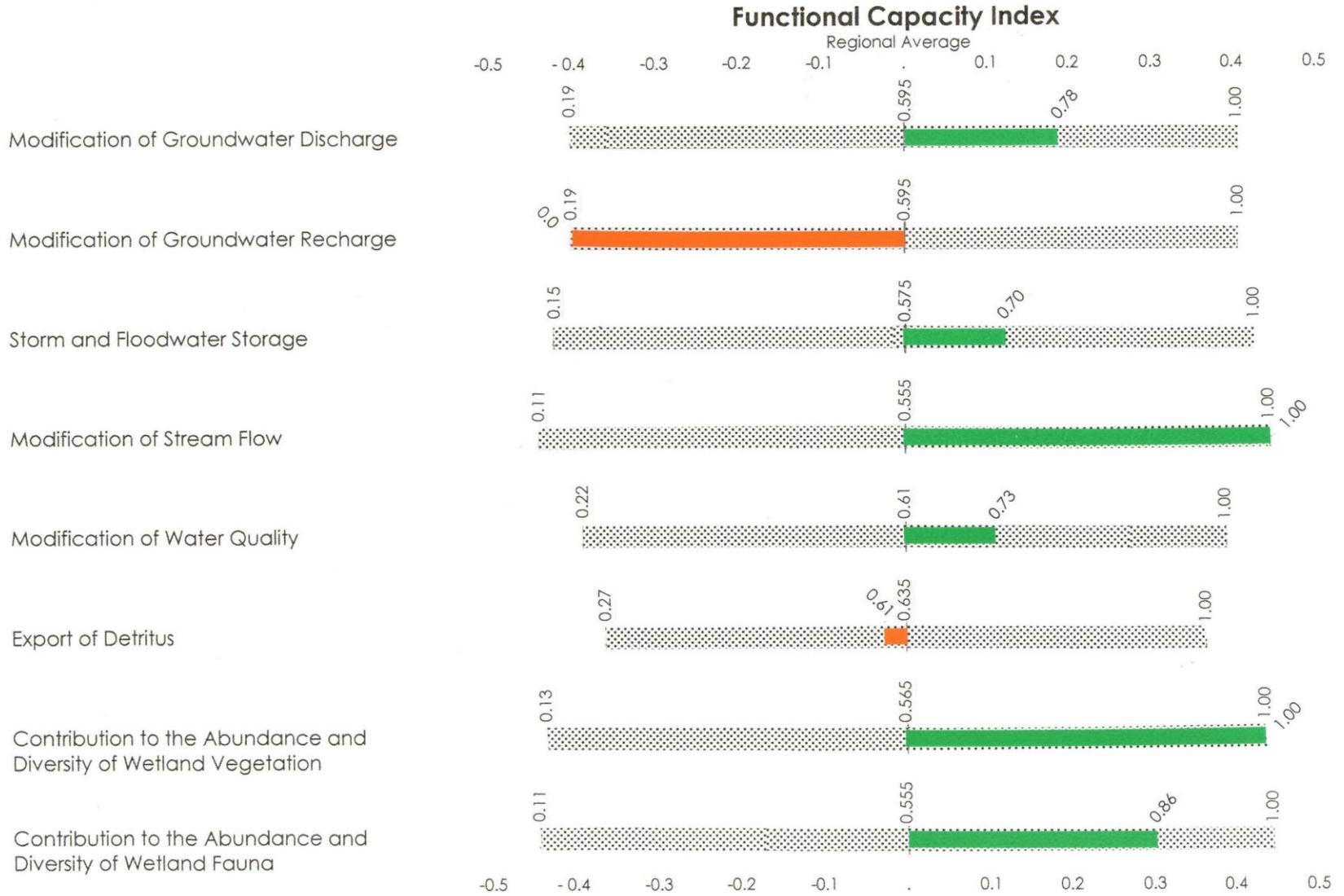


9.0 ac. - 26% of total 35 ac. wetlands



26.1 ac. - 75% of total 35 ac. wetlands



WETLAND INVENTORY DATA

SLOPE 26% (9 ac)
DEPRESSION 74% (26 ac)
BOTH

Project Number: YORRYAOL Date: _____
 Wetland Number: SM-1
 Aerial Photo Numbers: _____
 USGS Quadrangle: MOHEGAN LAKE
 Field Investigators: BTD

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS		PLANT SPECIES												
Condition	Percent/Acreage	OW	FW	F	FU	OU	DOM	COM	OCC	C	S	TS	LS	H
	74% 26 ac	Depressional	<input type="checkbox"/>											
	26% / 9 ac	Slope	<input type="checkbox"/>											
	_____	Flat	<input type="checkbox"/>											
	_____	Extensive Peatland	<input type="checkbox"/>											
	_____	Lacustrine Fringe	<input type="checkbox"/>											
	_____	Riverine	<input type="checkbox"/>											

VEGETATION TYPES		SOIL TYPES	
Type	Percent/Acreage		
Forested Wetland		Histosol	
Evergreen		• Fibric <input type="checkbox"/>	
Needle-leaved		• Hemic <input type="checkbox"/>	
Deciduous	25%	• Sapric <input type="checkbox"/>	
Broad-leaved		Mineral	
Needle-leaved		Hydric Soil	
Scrub Shrub		• Gravelly <input type="checkbox"/>	
Evergreen		• Sandy <input type="checkbox"/>	
Broad-leaved		• Silty <input type="checkbox"/>	
Needle-leaved		• Clayey <input type="checkbox"/>	
Deciduous	35%	GEOLOGY	
Broad-leaved		Surficial:	
Needle-leaved		Bedrock:	
Emergent Wetland			
Persistent	30%		
Non-persistent			
Aquatic Bed	10%		
Total	100%		

RED MAPLE	<input type="checkbox"/>													
GRAY DOGWOOD	<input type="checkbox"/>													
GRAY DOGWOOD	<input type="checkbox"/>													
ELDERBERRY	<input type="checkbox"/>													
MULTIFLORA ROSE	<input type="checkbox"/>													
PURPLE LOOSESTRIF	<input type="checkbox"/>													
SKUNK CABBAGE	<input type="checkbox"/>													
BEEB WILLOW	<input type="checkbox"/>													
WEeping WILLOW	<input type="checkbox"/>													
SENSITIVE FERN	<input type="checkbox"/>													
BLACK BERRY	<input type="checkbox"/>													
GRAPE	<input type="checkbox"/>													
POISON Ivy	<input type="checkbox"/>													
GREEN HSH	<input type="checkbox"/>													
BALMWOOD	<input type="checkbox"/>													
TUSSOCK SEDGE	<input type="checkbox"/>													
CATTAIL	<input type="checkbox"/>													
AMERICAN ELM	<input type="checkbox"/>													
PHRAGMITES	<input type="checkbox"/>													
ORIENTAL BITTERSWEET	<input type="checkbox"/>													
BEACH ROSE	<input type="checkbox"/>													
JEWEL WOOD	<input type="checkbox"/>													
SPICE BUSH	<input type="checkbox"/>													
SWEET BIRCH	<input type="checkbox"/>													
MALBARD GALIE	<input type="checkbox"/>													
VIRGINIA CREEPER	<input type="checkbox"/>													
ARDOUS ALUM	<input type="checkbox"/>													
TRILLIUM	<input type="checkbox"/>													
JAPANESE BARBERRY	<input type="checkbox"/>													
ARROWWOOD VIBURNUM	<input type="checkbox"/>													

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

Comments: _____

PRE-EMPTIVE STATUS	
<input checked="" type="checkbox"/> 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	HYDROLOGIC VARIABLES	SOIL VARIABLES																						
<p>Size:</p> <input type="checkbox"/> Small (<10 acres) <input type="checkbox"/> Medium (10-100 acres) <input type="checkbox"/> Large (>100 acres) <p>Wetland Juxtaposition:</p> <input type="checkbox"/> Connected Upstream and Downstream <input type="checkbox"/> Only Connected Above <input type="checkbox"/> Only Connected Below <input type="checkbox"/> Other Wetlands Nearby but not Connected <input type="checkbox"/> Wetland Isolated <p>Fire Occurrence and Frequency:</p> <input type="checkbox"/> Natural; Predictable Frequency <input type="checkbox"/> Natural; Sporadic Frequency <input type="checkbox"/> Human-caused; Predictable <input type="checkbox"/> Human-caused; Sporadic <input type="checkbox"/> Rare Event <input type="checkbox"/> No Evidence <p>Regional Scarcity:</p> <input type="checkbox"/> Not Scarce (>5% of total wetland area of region) <input type="checkbox"/> Scarce (<5% of total wetland area of region) <p>Watershed Land Use:</p> <input type="checkbox"/> > 50% urbanized <input type="checkbox"/> 25-50% urbanized <input type="checkbox"/> 0-25% urbanized	<p>Microrelief of Wetland Surface:</p> <input type="checkbox"/> Pronounced >45 cm <input type="checkbox"/> Well Developed 15-45 cm <input type="checkbox"/> Poorly Developed <15 cm <input type="checkbox"/> Absent <p>Inlet/Outlet Class:</p> <input type="checkbox"/> No Inlet/No Outlet <input type="checkbox"/> No Inlet/Intermittent Outlet <input type="checkbox"/> No Inlet/Perennial Outlet <input type="checkbox"/> Intermittent Inlet/No Outlet <input type="checkbox"/> Intermittent Inlet/Intermittent Outlet <input type="checkbox"/> Intermittent Outlet/Perennial Outlet <input type="checkbox"/> Perennial Inlet/No Outlet <input type="checkbox"/> Perennial Inlet/Intermittent Outlet <input type="checkbox"/> Perennial Inlet/Perennial Outlet <p>Nested Piezometer Data:</p> <input type="checkbox"/> Recharge <input type="checkbox"/> Discharge <input type="checkbox"/> Horizontal Flow <input type="checkbox"/> Not Available <p>Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:</p> <input type="checkbox"/> Piez. Surface Above or at Substrate elev. <input type="checkbox"/> Piez. Surface below Substrate elev. <input type="checkbox"/> Not Available <p>Evidence of Sedimentation:</p> <input type="checkbox"/> No Evidence Observed <input type="checkbox"/> Sediment Observed on Wetland Substrate <input type="checkbox"/> Fluvaquent Soils <p>Evidence of Seeps and Springs:</p> <input type="checkbox"/> No Seeps or Springs <input type="checkbox"/> Seeps Observed <input type="checkbox"/> Perennial Spring <input type="checkbox"/> Intermittent Spring	<p>Number of Types & Relative Proportions:</p> <p>Number of Types</p> <input type="checkbox"/> Actual # <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <p>Evenness of Distribution</p> <input type="checkbox"/> Even Distribution <input type="checkbox"/> Moderately Even Distribution <input type="checkbox"/> Highly Uneven Distribution <p>Vegetation Density/Dominance:</p> <input type="checkbox"/> Sparse (0-20%) <input type="checkbox"/> Low Density (20-40%) <input type="checkbox"/> Medium Density (40-60%) <input type="checkbox"/> High Density (60-80%) <input type="checkbox"/> Very High Density (80-100%) <p>Vegetative Interspersion:</p> <input type="checkbox"/> High (small groupings, diverse and interspersed) <input type="checkbox"/> Moderate (broken irregular rings) <input type="checkbox"/> Low (large patches, concentric rings) <p>Number of Layers and Percent Cover:</p> <table style="width: 100%;"> <thead> <tr> <th>Number of Layers</th> <th>% Cover</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> 6 or > (actual #)</td> <td>1. submergents:</td> </tr> <tr> <td><input type="checkbox"/> 5</td> <td>2. floating:</td> </tr> <tr> <td><input type="checkbox"/> 4</td> <td>3. moss-lichen:</td> </tr> <tr> <td><input type="checkbox"/> 3</td> <td>4. short herb:</td> </tr> <tr> <td><input type="checkbox"/> 2</td> <td>5. tall herb:</td> </tr> <tr> <td><input type="checkbox"/> 1</td> <td>6. dwarf shrub:</td> </tr> <tr> <td></td> <td>7. short shrub:</td> </tr> <tr> <td></td> <td>8. tall shrub:</td> </tr> <tr> <td></td> <td>9. sapling:</td> </tr> <tr> <td></td> <td>10. tree:</td> </tr> </tbody> </table> <p>Plant Species Diversity:</p> <input type="checkbox"/> Low 1-2 plots sampled <input type="checkbox"/> Medium 3-4 plots sampled <input type="checkbox"/> High 5 or more plots sampled <p>Proportion of Animal Food Plants:</p> <input type="checkbox"/> Low (5-25% cover) <input type="checkbox"/> Medium (25-50% cover) <input type="checkbox"/> High (>50% cover) <p>Cover Distribution:</p> <input type="checkbox"/> Continuous Cover <input type="checkbox"/> Small Scattered Patches <input type="checkbox"/> 1 or More Large Patches; Parts of Site Open <input type="checkbox"/> Solitary, Scattered Stems <p>Dead Woody Material:</p> <input type="checkbox"/> Abundant (>50 of wetland surface) <input type="checkbox"/> Moderately Abundant (25-50% of surface) <input type="checkbox"/> Low Abundance (0-25% of surface) <p>Interspersion of Cover and Open Water:</p> <input type="checkbox"/> 26-75% Scattered or Peripheral <input type="checkbox"/> >75% Scattered or Peripheral <input type="checkbox"/> <25% Scattered or Peripheral <input type="checkbox"/> 100% Cover or Open Water <p>Stream Sinuosity:</p> <input type="checkbox"/> Highly Convoluted (index 1.50 or >) <input type="checkbox"/> Moderately Convoluted (index 1.25-1.50) <input type="checkbox"/> Straight/Slightly Irreg. (index) 1.10-1.25 <p>Presence of Islands:</p> <input type="checkbox"/> Several to Many <input type="checkbox"/> One or Few <input type="checkbox"/> Absent	Number of Layers	% Cover	<input type="checkbox"/> 6 or > (actual #)	1. submergents:	<input type="checkbox"/> 5	2. floating:	<input type="checkbox"/> 4	3. moss-lichen:	<input type="checkbox"/> 3	4. short herb:	<input type="checkbox"/> 2	5. tall herb:	<input type="checkbox"/> 1	6. dwarf shrub:		7. short shrub:		8. tall shrub:		9. sapling:		10. tree:
Number of Layers	% Cover																							
<input type="checkbox"/> 6 or > (actual #)	1. submergents:																							
<input type="checkbox"/> 5	2. floating:																							
<input type="checkbox"/> 4	3. moss-lichen:																							
<input type="checkbox"/> 3	4. short herb:																							
<input type="checkbox"/> 2	5. tall herb:																							
<input type="checkbox"/> 1	6. dwarf shrub:																							
	7. short shrub:																							
	8. tall shrub:																							
	9. sapling:																							
	10. tree:																							
<p>Surface Water Level Fluctuation of Wetland:</p> <input type="checkbox"/> High Fluctuation <input type="checkbox"/> Low Fluctuation <input type="checkbox"/> Never Inundated <p>Frequency of Overbank Flooding:</p> <input type="checkbox"/> Return Interval > 5 yrs. <input type="checkbox"/> Return Interval 2-5 yrs. <input type="checkbox"/> Return Interval 1-2 yrs. <input type="checkbox"/> No Overbank Flooding <p>pH:</p> <input type="checkbox"/> Acid <5.5 <input type="checkbox"/> Circumneutral 5.5-7.4 <input type="checkbox"/> Alkaline >7.4 <input type="checkbox"/> No Water <p>Surficial Geologic Deposit Under Wetland</p> <input type="checkbox"/> Low Permeability Stratified Deposits <input type="checkbox"/> High Permeability Stratified Deposits <input type="checkbox"/> Glacial Till <p>Wetland Land Use:</p> <input type="checkbox"/> High Intensity (ie. agriculture) <input type="checkbox"/> Moderate Intensity (ie. forestry) <input type="checkbox"/> Low Intensity (ie. open space) <p>Wetland Water Regime:</p> <input type="checkbox"/> Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded <input type="checkbox"/> Drier: Seasonally Flooded, Temporarily Flooded, Saturated <p>Basin Topographic Gradient:</p> <input type="checkbox"/> High Gradient >2% <input type="checkbox"/> Low Gradient <2% <p>Degree of Outlet Restriction:</p> <input type="checkbox"/> Restricted Outflow <input type="checkbox"/> Unrestricted Outflow <input type="checkbox"/> No Outflow <p>Ratio of Wetland Area to Watershed Area:</p> <input type="checkbox"/> High >10% <input type="checkbox"/> Low <10%	<p>Soil Lacking:</p> <input type="checkbox"/> <p>Histisol:</p> <input type="checkbox"/> Fibric <input type="checkbox"/> Hemic <input type="checkbox"/> Sapric <p>Mineral Hydric Soil:</p> <input type="checkbox"/> Gravelly <input type="checkbox"/> Sandy <input type="checkbox"/> Silty <input type="checkbox"/> Clayey	<p>Vegetation Lacking:</p> <input type="checkbox"/> <p>Dominant Wetland Type:</p> <input type="checkbox"/> Forested - Evergreen - Needle-leaved <input type="checkbox"/> Forested - Deciduous - Broad-leaved <input type="checkbox"/> Forested - Deciduous - Needle-leaved <input type="checkbox"/> Scrub Shrub - Evergreen - Broad-leaved <input type="checkbox"/> Scrub Shrub - Evergreen - Needle-leaved <input type="checkbox"/> Scrub Shrub - Deciduous - Broad-leaved <input type="checkbox"/> Scrub Shrub - Deciduous - Needle-leaved <input type="checkbox"/> Emergent - Persistent <input type="checkbox"/> Emergent - Non-persistent <input type="checkbox"/> Aquatic Bed																						

SM-1 (35 ac) ● DEPRESSION 26.1 ac (74%)
● SLOPE 9.0 ac (26%)

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 Piezometric 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 Piezometric 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
			14	-	-	-
		Total Score:				
		Model Range:	3-18	2-15	3-15	3-18
		Functional Capacity Index:	Total Score	15	15	18
			18 $\frac{14}{18} = 0.78$	15 $\frac{15}{15} = 1.0$	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)

VARIABLES	CONDITIONS	HGM TYPES: D	WEIGHTS				
			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 Piezometric 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:		0					
Model Range:		4-21	4-18	2-12	4-18	4-21	
Functional Capacity Index:		Total Score 21	18	12	18	21	
Index Range:		0.1-1.0	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	WEIGHTS					
		HGM TYPES: <u>D</u>	<u>S</u>	L	EP	R	F
Indicators of disfunction	none						
Direct Indicators of Function	no outlet	27	21				30
<u>Primary Variables</u>							
• 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	<u>1</u>	<u>1</u>	0	0	0	1
	• perennial inlet/perennial outlet	1	1	0	0	0	1
• Degree of Outlet Restriction	• restricted	<u>3</u>	0	0	0	0	3
	• unrestricted	0	0	0	0	0	0
• Basin Topographic Gradient	• low gradient	<u>3</u>	3	0	3	3	3
	• high gradient	1	<u>1</u>	0	0	1	1
• Wetland Water Regime	• Drier: seasonally flooded, temporarily flooded, saturated	3	<u>3</u>	3	0	3	3
	• Wet: permanently flooded, intermittently exposed, semipermanently flooded	<u>1</u>	1	1	0	1	1
• Surface Water Level Fluctuation of the Wetland	• high fluctuation	3	0	3	0	3	3
	• low fluctuation	<u>2</u>	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	<u>1</u>	<u>1</u>	1	0	1	1
• Microrelief of Wetland Surface	• pronounced	<u>3</u>	3	3	3	3	3
	• well developed	2	<u>2</u>	2	2	2	2
	• poorly developed	1	<u>1</u>	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	<u>3</u>	<u>3</u>	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)

2.9.5 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
			14	11				
	Total Score:							
	Model Range:		4-18	3-15	2-12	1-12	2-12	4-18
	Functional Capacity Index:		Total Score					
			14	11				
			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

$14 \div 18 = 0.78$
 $11 \div 15 = 0.73$

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							
<u>Primary Variables</u>								
• 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
			11	14	—	—	—	—
	Total Score:							
	Model Range:		5-18	4-15	3-12	2-10	3-12	5-18
	Functional Capacity Index:							
			Total Score = 0.61	14 = 0.93				
			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	
<u>Primary Variables</u>			
•	Plant Species Diversity	<ul style="list-style-type: none"> • high diversity • medium diversity • low diversity 	(5) 3 1
•	Vegetation Density/Dominance	<ul style="list-style-type: none"> • high/very high • medium • sparse/low 	(5) 3 1
•	Wetland Juxtaposition	<ul style="list-style-type: none"> • connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated 	(5) 3 1
			0 <u>15</u>
		Total Score:	
		Model Range:	2-15
		Functional Capacity Index:	= Total Score / 15
		Index Range:	0.13-1.0

15 = 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	
<u>Primary Variables</u>		
• 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
• Vegetation Interspersion	• moderately even distribution	2
	• highly uneven distribution	1
	• no vegetation	0
	• high interspersion	3
• Number of Layers and Percent Cover	• moderate interspersion	2
	• low interspersion	1
	• no vegetation	0
	• 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
	• no vegetation	0

(continued)

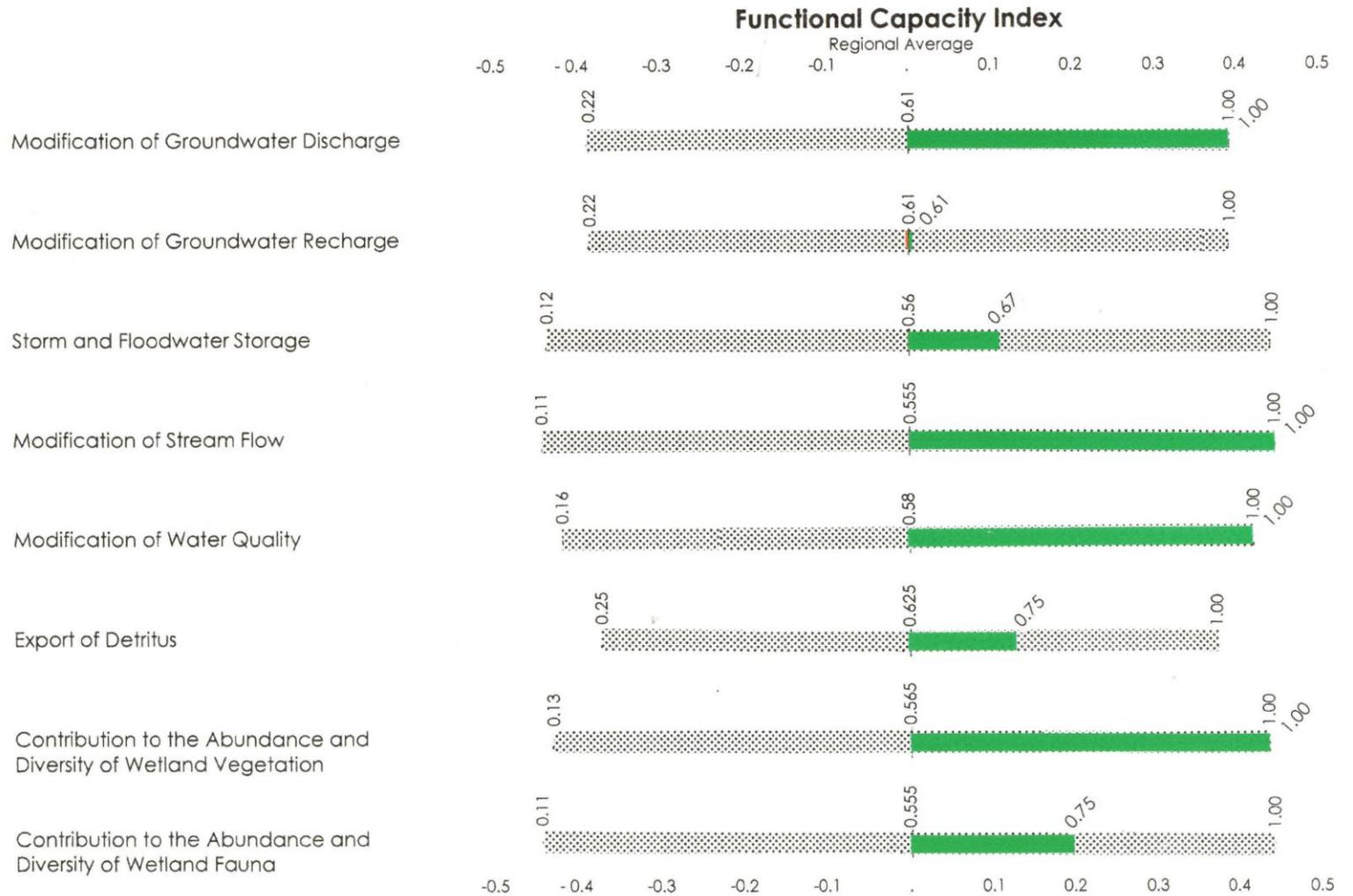
2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

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:	All Other HGM Types:	Total Score: 31 24
Model Range: 4-33		Model Range: 4-36
Functional Capacity Index = $\frac{\text{Total Score}}{33}$ 24 = 0.73		Functional Capacity Index = $\frac{\text{Total Score}}{36}$ 31 = 0.86
Index Range: 0.12-1.0		Index Range: 0.11-1.0

**Croton Reservoir North
Saw Mill Brook**

Riverine Wetland
18.1 ac. - 69% of total 21.6 ac. wetlands

Study Area: SM-2



WETLAND INVENTORY DATA

RIVERINE 69% 10 ac
 *SLOPE 18% 5 ac
 *DEPRESSION 13% 3 ac

Project Number: YORKTOWN Date: _____
 Wetland Number: SM-2
 Aerial Photo Numbers: _____
 USGS Quadrangle: MONTECAL LAKES & OSSINING
 Field Investigators: BD

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

PART 1 - CHARACTERIZATION of WETLAND

SURFACE WATER FLOW VECTORS		PLANT SPECIES																			
Condition	Percent/Acreage																				
	13%	Depressional	DS	RED MAPLE																	
	18%	Slope	RD	AMERICAN ELM																	
		Flat	S	MULTIFLORA ROSE																	
		Extensive Peatland	S	SMOOTH ALDER																	
		Lacustrine Fringe	SD	BUTTERNUT HICKORY																	
	69%	Riverine	SD	GREEN ASH																	
			S	TULIP PEARL																	
			S	JAPANESE BARBERRY																	
			S	PHAZAN																	
			D	SPHAGNUM MOSS																	
			D	HORNBEAM																	
			SD	SWEET BIRCH																	
			D	HIGHBUSH BLUEBERRY																	
			SD	RIVER BIRCH																	
			D	WINTERBERRY																	
			S	POSSY WILLOW																	
			S	WINGED EUPHYMIUM																	
			S	AMERICAN BEECH																	
			S	SPIGEBUSH																	
			S	CHRISTMAS FERN																	
			S	GREY BIRCH																	
			B	BUTTON BUSH																	
			D	TUSSOCK SEDGE																	
			S	PRIVET																	
			S	HONEY SUCKLE																	
			D	SILKY DOGWOOD																	
			D	WEeping WILLOW																	
			S	BITTER SWEET																	
			D	REDOSIKLE DOGWOOD																	
			S	HOBBLE BUSH																	
				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																	
VEGETATION TYPES		PRE-EMPTIVE STATUS																			
Type	Percent/Acreage																				
Forested Wetland																					
Evergreen																					
Needle-leaved																					
Deciduous	50%																				
Broad-leaved																					
Needle-leaved																					
Scrub Shrub																					
Evergreen																					
Broad-leaved	45%																				
Needle-leaved																					
Deciduous																					
Broad-leaved																					
Needle-leaved																					
Emergent Wetland																					
Persistent	5%																				
Non-persistent																					
Aquatic Bed																					
Total	100																				
Comments:																					

SOIL TYPES

- Histosol
 - Fibric
 - Hemic
 - Sapric

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

GEOLOGY

Surficial: TILL

Bedrock:

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	MICRORELIEF OF WETLAND SURFACE:	NUMBER OF TYPES & RELATIVE PROPORTIONS:																						
<p>Size:</p> <input type="checkbox"/> Small (<10 acres) <input checked="" type="checkbox"/> Medium (10-100 acres) <input type="checkbox"/> Large (>100 acres) <p>Wetland Juxtaposition:</p> <input checked="" type="checkbox"/> Connected Upstream and Downstream <input type="checkbox"/> Only Connected Above <input type="checkbox"/> Only Connected Below <input type="checkbox"/> Other Wetlands Nearby but not Connected <input type="checkbox"/> Wetland Isolated <p>Fire Occurrence and Frequency:</p> <input type="checkbox"/> Natural; Predictable Frequency <input type="checkbox"/> Natural; Sporadic Frequency <input type="checkbox"/> Human-caused; Predictable <input type="checkbox"/> Human-caused; Sporadic <input type="checkbox"/> Rare Event <input type="checkbox"/> No Evidence <p>Regional Scarcity:</p> <input type="checkbox"/> Not Scarce (>5% of total wetland area of region) <input checked="" type="checkbox"/> Scarce (<5% of total wetland area of region) <p>Watershed Land Use:</p> <input type="checkbox"/> > 50% urbanized <input checked="" type="checkbox"/> 25-50% urbanized <input type="checkbox"/> 0-25% urbanized	<p>Microrelief of Wetland Surface:</p> <input type="checkbox"/> Pronounced >45 cm <input checked="" type="checkbox"/> Well Developed 15-45 cm <input type="checkbox"/> Poorly Developed <15 cm <input type="checkbox"/> Absent <p>Inlet/Outlet Class:</p> <input type="checkbox"/> No Inlet/No Outlet <input type="checkbox"/> No Inlet/Intermittent Outlet <input type="checkbox"/> No Inlet/Perennial Outlet <input type="checkbox"/> Intermittent Inlet/No Outlet <input type="checkbox"/> Intermittent Inlet/Intermittent Outlet <input type="checkbox"/> Intermittent Outlet/Perennial Outlet <input type="checkbox"/> Perennial Inlet/No Outlet <input type="checkbox"/> Perennial Inlet/Intermittent Outlet <input checked="" type="checkbox"/> Perennial Inlet/Perennial Outlet <p>Nested Piezometer Data:</p> <input type="checkbox"/> Recharge <input type="checkbox"/> Discharge <input type="checkbox"/> Horizontal Flow <input checked="" type="checkbox"/> Not Available <p>Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:</p> <input type="checkbox"/> Piez. Surface Above or at Substrate elev. <input type="checkbox"/> Piez. Surface below Substrate elev. <input checked="" type="checkbox"/> Not Available <p>Evidence of Sedimentation:</p> <input type="checkbox"/> No Evidence Observed <input checked="" type="checkbox"/> Sediment Observed on Wetland Substrate <input type="checkbox"/> Fluvaquent Soils <p>Evidence of Seeps and Springs:</p> <input type="checkbox"/> No Seeps or Springs <input checked="" type="checkbox"/> Seeps Observed <input type="checkbox"/> Perennial Spring <input type="checkbox"/> Intermittent Spring	<p>Number of Types & Relative Proportions:</p> <p>Number of Types</p> <input type="checkbox"/> Actual # <input checked="" type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <p>Evenness of Distribution</p> <input type="checkbox"/> Even Distribution <input checked="" type="checkbox"/> Moderately Even Distribution <input type="checkbox"/> Highly Uneven Distribution <p>Vegetation Density/Dominance:</p> <input type="checkbox"/> Sparse (0-20%) <input type="checkbox"/> Low Density (20-40%) <input type="checkbox"/> Medium Density (40-60%) <input type="checkbox"/> High Density (60-80%) <input checked="" type="checkbox"/> Very High Density (80-100%) <p>Vegetative Interspersion:</p> <input type="checkbox"/> High (small groupings, diverse and interspersed) <input checked="" type="checkbox"/> Moderate (broken irregular rings) <input type="checkbox"/> Low (large patches, concentric rings) <p>Number of Layers and Percent Cover:</p> <table style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Number of Layers</th> <th style="text-align: left;">% Cover</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> 6 or > (actual #)</td> <td>1. submergents:</td> </tr> <tr> <td><input type="checkbox"/> 5</td> <td>2. floating:</td> </tr> <tr> <td><input type="checkbox"/> 4</td> <td>3. moss-lichen:</td> </tr> <tr> <td><input type="checkbox"/> 3</td> <td>4. short herb:</td> </tr> <tr> <td><input type="checkbox"/> 2</td> <td>5. tall herb:</td> </tr> <tr> <td><input type="checkbox"/> 1</td> <td>6. dwarf shrub:</td> </tr> <tr> <td></td> <td>7. short shrub:</td> </tr> <tr> <td></td> <td>8. tall shrub:</td> </tr> <tr> <td></td> <td>9. sapling:</td> </tr> <tr> <td></td> <td>10. tree:</td> </tr> </tbody> </table> <p>Plant Species Diversity:</p> <input type="checkbox"/> Low 1-2 plots sampled <input type="checkbox"/> Medium 3-4 plots sampled <input checked="" type="checkbox"/> High 5 or more plots sampled <p>Proportion of Animal Food Plants:</p> <input type="checkbox"/> Low (5-25% cover) <input type="checkbox"/> Medium (25-50% cover) <input checked="" type="checkbox"/> High (>50% cover) <p>Cover Distribution:</p> <input checked="" type="checkbox"/> Continuous Cover <input type="checkbox"/> Small Scattered Patches <input type="checkbox"/> 1 or More Large Patches; Parts of Site Open <input type="checkbox"/> Solitary, Scattered Stems <p>Dead Woody Material:</p> <input type="checkbox"/> Abundant (>50 of wetland surface) <input type="checkbox"/> Moderately Abundant (25-50% of surface) <input checked="" type="checkbox"/> Low Abundance (0-25% of surface) <p>Interspersion of Cover and Open Water:</p> <input type="checkbox"/> 26-75% Scattered or Peripheral <input type="checkbox"/> >75% Scattered or Peripheral <input type="checkbox"/> <25% Scattered or Peripheral <input checked="" type="checkbox"/> 100% Cover or Open Water <p>Stream Sinuosity:</p> <input type="checkbox"/> Highly Convoluted (index 1.50 or >) <input type="checkbox"/> Moderately Convoluted (index 1.25-1.50) <input checked="" type="checkbox"/> Straight/Slightly Irreg. (index) 1.10-1.25 <p>Presence of Islands:</p> <input type="checkbox"/> Several to Many <input type="checkbox"/> One or Few <input checked="" type="checkbox"/> Absent	Number of Layers	% Cover	<input checked="" type="checkbox"/> 6 or > (actual #)	1. submergents:	<input type="checkbox"/> 5	2. floating:	<input type="checkbox"/> 4	3. moss-lichen:	<input type="checkbox"/> 3	4. short herb:	<input type="checkbox"/> 2	5. tall herb:	<input type="checkbox"/> 1	6. dwarf shrub:		7. short shrub:		8. tall shrub:		9. sapling:		10. tree:
Number of Layers	% Cover																							
<input checked="" type="checkbox"/> 6 or > (actual #)	1. submergents:																							
<input type="checkbox"/> 5	2. floating:																							
<input type="checkbox"/> 4	3. moss-lichen:																							
<input type="checkbox"/> 3	4. short herb:																							
<input type="checkbox"/> 2	5. tall herb:																							
<input type="checkbox"/> 1	6. dwarf shrub:																							
	7. short shrub:																							
	8. tall shrub:																							
	9. sapling:																							
	10. tree:																							
HYDROLOGIC VARIABLES	SOIL VARIABLES	VEGETATION VARIABLES																						
<p>Surface Water Level Fluctuation of Wetland:</p> <input type="checkbox"/> High Fluctuation <input checked="" type="checkbox"/> Low Fluctuation <input type="checkbox"/> Never Inundated <p>Frequency of Overbank Flooding:</p> <input type="checkbox"/> Return Interval > 5 yrs. <input type="checkbox"/> Return Interval 2-5 yrs. <input checked="" type="checkbox"/> Return Interval 1-2 yrs. <input type="checkbox"/> No Overbank Flooding <p>pH:</p> <input type="checkbox"/> Acid <5.5 <input checked="" type="checkbox"/> Circumneutral 5.5-7.4 <input type="checkbox"/> Alkaline >7.4 <input type="checkbox"/> No Water <p>Surficial Geologic Deposit Under Wetland</p> <input type="checkbox"/> Low Permeability Stratified Deposits <input type="checkbox"/> High Permeability Stratified Deposits <input checked="" type="checkbox"/> Glacial Till <p>Wetland Land Use:</p> <input type="checkbox"/> High Intensity (i.e. agriculture) <input type="checkbox"/> Moderate Intensity (i.e. forestry) <input checked="" type="checkbox"/> Low Intensity (i.e. open space) <p>Wetland Water Regime:</p> <input type="checkbox"/> Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded <input checked="" type="checkbox"/> Drier: Seasonally Flooded, Temporarily Flooded, Saturated <p>Basin Topographic Gradient:</p> <input checked="" type="checkbox"/> High Gradient >2% <input type="checkbox"/> Low Gradient <2% <p>Degree of Outlet Restriction:</p> <input checked="" type="checkbox"/> Restricted Outflow <input type="checkbox"/> Unrestricted Outflow <input type="checkbox"/> No Outflow <p>Ratio of Wetland Area to Watershed Area:</p> <input type="checkbox"/> High >10% <input checked="" type="checkbox"/> Low <10%	<p>Soil Lacking:</p> <input type="checkbox"/> <p>Histosol:</p> <input type="checkbox"/> Fibric <input type="checkbox"/> Hemic <input checked="" type="checkbox"/> Sapric <p>Mineral Hydric Soil:</p> <input type="checkbox"/> Gravelly <input checked="" type="checkbox"/> Sandy <input type="checkbox"/> Silty <input type="checkbox"/> Clayey	<p>Vegetation Lacking:</p> <input type="checkbox"/> <p>Dominant Wetland Type:</p> <input type="checkbox"/> Forested - Evergreen - Needle-leaved <input checked="" type="checkbox"/> Forested - Deciduous - Broad-leaved <input type="checkbox"/> Forested - Deciduous - Needle-leaved <input type="checkbox"/> Scrub Shrub - Evergreen - Broad-leaved <input type="checkbox"/> Scrub Shrub - Evergreen - Needle-leaved <input type="checkbox"/> Scrub Shrub - Deciduous - Broad-leaved <input type="checkbox"/> Scrub Shrub - Deciduous - Needle-leaved <input type="checkbox"/> Emergent - Persistent <input type="checkbox"/> Emergent - Non-persistent <input type="checkbox"/> Aquatic Bed																						

GM-2

RIVERINE 18 ac (69%)
 * SLOPE 5 ac (18%)
 * DEPRESSION 3 ac (13%)
 26 ac

* WETLAND CLASSES COMPRISING LESS THAN 25% OF WETLAND AREA ARE 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 Piezometric 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 Piezometric Surface	• wetland substrate elevation below piezometric surface		18	15	15	18
• Inlet/Outlet Class	• no inlet/perennial outlet		18	15	15	18
Primary Variables						
• Microrelief of Wetland Surface	• pronounced		3	3	3	3
	• well developed		2	2	2	2
	• poorly developed		1	1	1	1
	• absent		0	0	0	0
• Inlet/Outlet Class	• perennial inlet/perennial outlet		3	3	0	3
	• intermittent inlet/perennial outlet		2	2	0	2
	• all other classes		0	0	0	0
• pH	• alkaline		3	3	3	3
	• circumneutral		2	2	2	2
	• acid		0	0	0	0
	• no water present		0	0	0	0
• Surficial Geologic Deposit Under Wetland	• high permeability stratified deposits		3	3	3	3
	• low permeability stratified deposits		2	2	2	2
	• glacial till		1	1	1	1
• Wetland Water Regime	• wet; permanently flooded, intermittently exposed, semipermanently flooded		3	0	3	3
	• drier; seasonally flooded, temporarily flooded, saturated		1	0	1	1

(continued)

2.9.1

Modification of Ground Water Discharge (Continued)

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

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

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

2.9.2

Modification of Ground Water Recharge

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

(continued)

2.9.2

Modification of Ground Water Recharge (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS				
			D	L	EP	R	F
Direct Indicators of Function							
• Inlet/Outlet Class	• perennial inlet/no outlet		21				21
• Nested Piezometer Data	• recharge condition		21				21
• Relationship to Regional Piezometric 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 = 0.61 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
<u>Primary Variables</u>								
• 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
				—	—	—	—	16
Total Score:							16	
Model Range:			4-27	4-21	2-21	0-12	3-24	4-30
Functional Capacity Index:			Total Score				16 = 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					
<u>Primary Variables</u>						
<u>Storm and Flood Water Storage Function Model Score</u>		<u>Modification of Groundwater Discharge Function Model Score</u>				
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
			—	—	—	—	12	—
	Total Score:						12	
	Model Range:		4-18	3-15	2-12	1-12	2-12	4-18
	Functional Capacity Index:							
			Total Score				12 = 1.0	
			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							
<u>Primary Variables</u>								
• 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
			—	—	—	—	9	—
Total Score:							9	
• Model Range:			5-18	4-15	3-12	2-10	3-12	5-18
Functional Capacity Index:			Total Score				$\frac{9}{12} = 0.75$	
			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	
<u>Primary Variables</u>		
• Plant Species Diversity	<ul style="list-style-type: none"> • high diversity • medium diversity • low diversity 	5 3 1
• Vegetation Density/Dominance	<ul style="list-style-type: none"> • high/very high • medium • sparse/low 	5 3 1
• Wetland Juxtaposition	<ul style="list-style-type: none"> • connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated 	5 3 1 0 <u>15</u>
	Total Score:	
	Model Range:	2-15
	Functional Capacity Index:	= Total Score / 15 = 15 / 15 = 1.0
	Index Range:	0.13-1.0

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna

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

VARIABLES	CONDITIONS	WEIGHTS
Direct Indicators of Disfunction	none	
Direct Indicators of Function	none	
<u>Primary Variables</u>		
• 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
• Vegetation Interspersion	• even distribution	3
	• moderately even distribution	2
	• highly uneven distribution	1
	• no vegetation	0
• Number of Layers and Percent Cover	• 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)

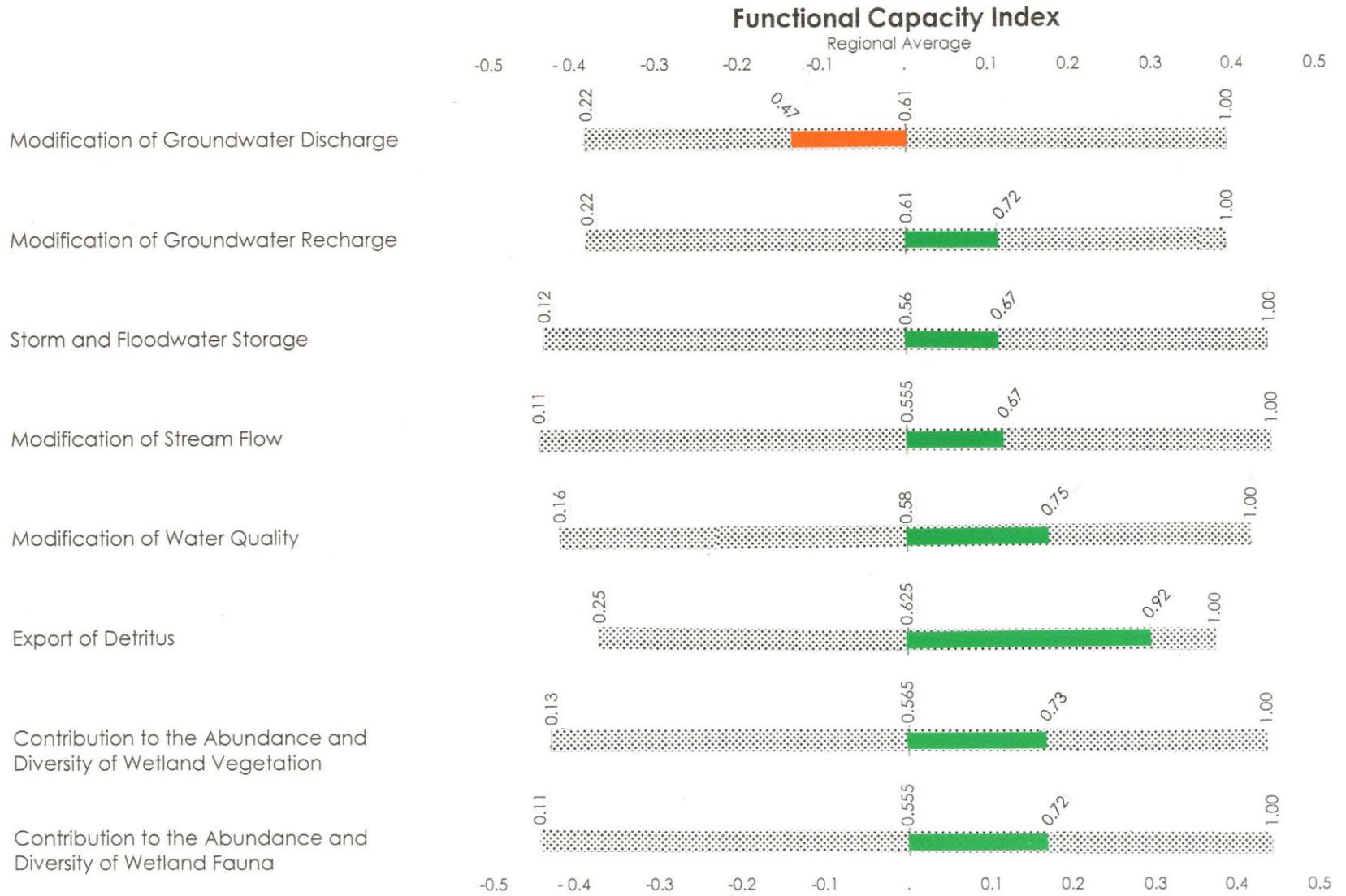
2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

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
		<u>27</u>
Slope Wetlands:	All Other HGM Types:	Total Score:
Model Range: 4-33		Model Range: 4-36
Functional Capacity Index = $\frac{\text{Total Score}}{33}$		Functional Capacity Index = $\frac{\text{Total Score}}{36}$ 27 = 0.75
Index Range: 0.12-1.0		Index Range: 0.11-1.0

1.6 ac. - 47% of total 3.4 ac. wetlands



1.8 ac. - 53% of total 3.4 ac. wetlands



WETLAND INVENTORY DATA (continued)

PART 2 - CHARACTERIZATION of MODEL VARIABLES

LANDSCAPE VARIABLES	MICRORELIEF OF WETLAND SURFACE:	NUMBER OF TYPES & RELATIVE PROPORTIONS:																						
<p>Size:</p> <input type="checkbox"/> Small (<10 acres) <input type="checkbox"/> Medium (10-100 acres) <input type="checkbox"/> Large (>100 acres) <p>Wetland Juxtaposition:</p> <input type="checkbox"/> Connected Upstream and Downstream <input type="checkbox"/> Only Connected Above <input type="checkbox"/> Only Connected Below <input type="checkbox"/> Other Wetlands Nearby but not Connected <input type="checkbox"/> Wetland Isolated <p>Fire Occurrence and Frequency:</p> <input type="checkbox"/> Natural; Predictable Frequency <input type="checkbox"/> Natural; Sporadic Frequency <input type="checkbox"/> Human-caused; Predictable <input type="checkbox"/> Human-caused; Sporadic <input type="checkbox"/> Rare Event <input type="checkbox"/> No Evidence <p>Regional Scarcity:</p> <input type="checkbox"/> Not Scarce (>5% of total wetland area of region) <input type="checkbox"/> Scarce (<5% of total wetland area of region) <p>Watershed Land Use:</p> <input type="checkbox"/> > 50% urbanized <input type="checkbox"/> 25-50% urbanized <input type="checkbox"/> 0-25% urbanized	<p>Inlet/Outlet Class:</p> <input type="checkbox"/> No Inlet/No Outlet <input type="checkbox"/> No Inlet/Intermittent Outlet <input type="checkbox"/> No Inlet/Perennial Outlet <input type="checkbox"/> Intermittent Inlet/No Outlet <input type="checkbox"/> Intermittent Inlet/Intermittent Outlet <input type="checkbox"/> Intermittent Outlet/Perennial Outlet <input type="checkbox"/> Perennial Inlet/No Outlet <input type="checkbox"/> Perennial Inlet/Intermittent Outlet <input type="checkbox"/> Perennial Inlet/Perennial Outlet <p>Nested Piezometer Data:</p> <input type="checkbox"/> Recharge <input type="checkbox"/> Discharge <input type="checkbox"/> Horizontal Flow <input type="checkbox"/> Not Available <p>Relationship of Wetlands' Substrate Elevation to Regional Piezometric Surface:</p> <input type="checkbox"/> Piez. Surface Above or at Substrate elev. <input type="checkbox"/> Piez. Surface below Substrate elev. <input type="checkbox"/> Not Available <p>Evidence of Sedimentation:</p> <input type="checkbox"/> No Evidence Observed <input type="checkbox"/> Sediment Observed on Wetland Substrate <input type="checkbox"/> Fluvaquent Soils <p>Evidence of Seeps and Springs:</p> <input type="checkbox"/> No Seeps or Springs <input type="checkbox"/> Seeps Observed <input type="checkbox"/> Perennial Spring <input type="checkbox"/> Intermittent Spring	<p>Number of Types & Relative Proportions:</p> <p>Number of Types</p> <input type="checkbox"/> Actual # <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <p>Evenness of Distribution</p> <input type="checkbox"/> Even Distribution <input type="checkbox"/> Moderately Even Distribution <input type="checkbox"/> Highly Uneven Distribution <p>Vegetation Density/Dominance:</p> <input type="checkbox"/> Sparse (0-20%) <input type="checkbox"/> Low Density (20-40%) <input type="checkbox"/> Medium Density (40-60%) <input type="checkbox"/> High Density (60-80%) <input type="checkbox"/> Very High Density (80-100%) <p>Vegetative Interspersion:</p> <input type="checkbox"/> High (small groupings, diverse and interspersed) <input type="checkbox"/> Moderate (broken irregular rings) <input type="checkbox"/> Low (large patches, concentric rings) <p>Number of Layers and Percent Cover:</p> <table style="width: 100%;"> <thead> <tr> <th>Number of Layers</th> <th>% Cover</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> 6 or > (actual #)</td> <td>1. submergents:</td> </tr> <tr> <td><input type="checkbox"/> 5</td> <td>2. floating:</td> </tr> <tr> <td><input type="checkbox"/> 4</td> <td>3. moss-lichen:</td> </tr> <tr> <td><input type="checkbox"/> 3</td> <td>4. short herb:</td> </tr> <tr> <td><input type="checkbox"/> 2</td> <td>5. tall herb:</td> </tr> <tr> <td><input type="checkbox"/> 1</td> <td>6. dwarf shrub:</td> </tr> <tr> <td></td> <td>7. short shrub:</td> </tr> <tr> <td></td> <td>8. tall shrub:</td> </tr> <tr> <td></td> <td>9. sapling:</td> </tr> <tr> <td></td> <td>10. tree:</td> </tr> </tbody> </table> <p>Plant Species Diversity:</p> <input type="checkbox"/> Low 1-2 plots sampled <input type="checkbox"/> Medium 3-4 plots sampled <input type="checkbox"/> High 5 or more plots sampled <p>Proportion of Animal Food Plants:</p> <input type="checkbox"/> Low (5-25% cover) <input type="checkbox"/> Medium (25-50% cover) <input type="checkbox"/> High (>50% cover) <p>Cover Distribution:</p> <input type="checkbox"/> Continuous Cover <input type="checkbox"/> Small Scattered Patches <input type="checkbox"/> 1 or More Large Patches; Parts of Site Open <input type="checkbox"/> Solitary, Scattered Stems <p>Dead Woody Material:</p> <input type="checkbox"/> Abundant (>50 of wetland surface) <input type="checkbox"/> Moderately Abundant (25-50% of surface) <input type="checkbox"/> Low Abundance (0-25% of surface) <p>Interspersion of Cover and Open Water:</p> <input type="checkbox"/> 26-75% Scattered or Peripheral <input type="checkbox"/> >75% Scattered or Peripheral <input type="checkbox"/> <25% Scattered or Peripheral <input type="checkbox"/> 100% Cover or Open Water <p>Stream Sinuosity:</p> <input type="checkbox"/> Highly Convoluted (index 1.50 or >) <input type="checkbox"/> Moderately Convoluted (index 1.25-1.50) <input type="checkbox"/> Straight/Slightly Irreg. (index) 1.10-1.25 <p>Presence of Islands:</p> <input type="checkbox"/> Several to Many <input type="checkbox"/> One or Few <input type="checkbox"/> Absent	Number of Layers	% Cover	<input type="checkbox"/> 6 or > (actual #)	1. submergents:	<input type="checkbox"/> 5	2. floating:	<input type="checkbox"/> 4	3. moss-lichen:	<input type="checkbox"/> 3	4. short herb:	<input type="checkbox"/> 2	5. tall herb:	<input type="checkbox"/> 1	6. dwarf shrub:		7. short shrub:		8. tall shrub:		9. sapling:		10. tree:
Number of Layers	% Cover																							
<input type="checkbox"/> 6 or > (actual #)	1. submergents:																							
<input type="checkbox"/> 5	2. floating:																							
<input type="checkbox"/> 4	3. moss-lichen:																							
<input type="checkbox"/> 3	4. short herb:																							
<input type="checkbox"/> 2	5. tall herb:																							
<input type="checkbox"/> 1	6. dwarf shrub:																							
	7. short shrub:																							
	8. tall shrub:																							
	9. sapling:																							
	10. tree:																							
HYDROLOGIC VARIABLES	SOIL VARIABLES	VEGETATION VARIABLES																						
<p>Surface Water Level Fluctuation of Wetland:</p> <input type="checkbox"/> High Fluctuation <input type="checkbox"/> Low Fluctuation <input type="checkbox"/> Never Inundated <p>Frequency of Overbank Flooding:</p> <input type="checkbox"/> Return Interval > 5 yrs. <input type="checkbox"/> Return Interval 2-5 yrs. <input type="checkbox"/> Return Interval 1-2 yrs. <input type="checkbox"/> No Overbank Flooding <p>pH:</p> <input type="checkbox"/> Acid <5.5 <input type="checkbox"/> Circumneutral 5.5-7.4 <input type="checkbox"/> Alkaline >7.4 <input type="checkbox"/> No Water <p>Surficial Geologic Deposit Under Wetland</p> <input type="checkbox"/> Low Permeability Stratified Deposits <input type="checkbox"/> High Permeability Stratified Deposits <input type="checkbox"/> Glacial Till <p>Wetland Land Use:</p> <input type="checkbox"/> High Intensity (i.e. agriculture) <input type="checkbox"/> Moderate Intensity (i.e. forestry) <input type="checkbox"/> Low Intensity (i.e. open space) <p>Wetland Water Regime:</p> <input type="checkbox"/> Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded <input type="checkbox"/> Drier: Seasonally Flooded, Temporarily Flooded, Saturated <p>Basin Topographic Gradient:</p> <input type="checkbox"/> High Gradient >2% <input type="checkbox"/> Low Gradient <2% <p>Degree of Outlet Restriction:</p> <input type="checkbox"/> Restricted Outflow <input type="checkbox"/> Unrestricted Outflow <input type="checkbox"/> No Outflow <p>Ratio of Wetland Area to Watershed Area:</p> <input type="checkbox"/> High >10% <input type="checkbox"/> Low <10%	<p>Soil Lacking:</p> <input type="checkbox"/> <p>Histosol:</p> <input type="checkbox"/> Fibric <input type="checkbox"/> Hemic <input type="checkbox"/> Sapric <p>Mineral Hydric Soil:</p> <input type="checkbox"/> Gravelly <input type="checkbox"/> Sandy <input type="checkbox"/> Silty <input type="checkbox"/> Clayey	<p>Vegetation Lacking:</p> <input type="checkbox"/> <p>Dominant Wetland Type:</p> <input type="checkbox"/> Forested - Evergreen - Needle-leaved <input type="checkbox"/> Forested - Deciduous - Broad-leaved <input type="checkbox"/> Forested - Deciduous - Needle-leaved <input type="checkbox"/> Scrub Shrub - Evergreen - Broad-leaved <input type="checkbox"/> Scrub Shrub - Evergreen - Needle-leaved <input type="checkbox"/> Scrub Shrub - Deciduous - Broad-leaved <input type="checkbox"/> Scrub Shrub - Deciduous - Needle-leaved <input type="checkbox"/> Emergent - Persistent <input type="checkbox"/> Emergent - Non-persistent <input type="checkbox"/> Aquatic Bed																						

CRH-2 RIVERINE 1,80 ac (54%)
 SLOPE 1.55 ac (46%)
 Total 3.36 ac

2.9.1 Modification of Ground Water Discharge

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS			
			D	S	R	F
Indicators of Disfunction						
• Inlet/Outlet Class	• perennial inlet/no outlet		0	0	0	0
• Nested Piezometer Data	• recharge condition		0	0	0	0
• Relationship to Regional Piezometric 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 Piezometric 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
			-	-	7	-
		Total Score:				
		Model Range:	3-18	2-15	3-15	3-18
		Functional Capacity Index:	Total Score			
			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 Piezometric Surface	• wetland substrate elevation below piezometric surface		21				21
Primary Variables							
• Microrelief of Wetland Surface	• Poorly Developed		3	3	1	3	3
	• Absent		3	3	1	3	3
	• Well Developed		2	2	2	2	2
	• Pronounced		1	1	3	1	1
• Inlet/Outlet Class	• Perennial Inlet/Intermittent Outlet		3	0	0	0	3
	• All Other Classes		0	0	0	0	0
• pH	• Acid		3	3	3	3	3
	• Circumneutral		2	2	2	2	2
	• Alkaline		1	1	1	1	1
	• No water present		0	0	0	0	0
• Surficial Geologic Deposit Under Wetland	• Glacial Till		3	1	1	1	3
	• Low Permeability Stratified Deposits		2	2	2	2	2
	• High Permeability Stratified Deposits		1	3	3	3	1
• Surface Water Level Fluctuation of the Wetland	• High Fluctuation		3	3	0	3	3
	• Low Fluctuation		2	2	0	2	2
	• Never Inundated		1	1	0	1	1
• Wetland Water Regime	• Drier: Seasonally Flooded, Temporarily Flooded, Saturated		3	3	0	3	3
	• Wet: Permanently Flooded, Intermittently Exposed, Semipermanently Flooded		1	1	0	1	1
• Soil Type	• Gravelly or Sandy Mineral Hydric		3	3	0	3	3
	• Silty or Clayey Mineral Hydric		2	2	0	2	2
	• Sapric Histosol		1	1	0	1	1
	• Fibric or Hemic Histosol		0	0	3	0	0
Total Score:							13
Model Range:			4-21	4-18	2-12	4-18	4-21
Functional Capacity Index:			Total Score 21	18	12	$\frac{13}{18} = 0.72$	21
Index Range:			0.1-1.0	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
<u>Primary Variables</u>								
• 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
				—	11	—	—	16
Total Score:								
Model Range:			4-27	4-21	2-21	0-12	3-24	4-30
Functional Capacity Index:			Total Score	11 = 0.52			16 = 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 Dysfunction	no outlet	0
Direct Indicators of Function	none	
<u>Primary Variables</u>		
<u>Storm and Flood Water Storage Function Model Score</u>		<u>Modification of Groundwater Discharge Function Model Score</u>
High	3 x	High 3 = 9
Mod	2 x	High 3 = 6
Low	1 x	High 3 = 3
High	3 x	Mod 2 = 6
Mod	2 x	Mod 2 = 4
Low	1 x	Mod 2 = 2
High	3 x	Low 1 = 3
Mod	2 x	Low 1 = 2
Low	1 x	Low 1 = 1
Total Score:		
Model Range: 1-9		
Functional Capacity Index: Total Score		
		9
Index Range: 0.11-1.0		

*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
			—	11	—	—	9	—
Total Score:								
Model Range:			4-18	3-15	2-12	1-12	2-12	4-18
Functional Capacity Index:								
	Total Score		18	11 = 0.73	12	12	9 = 0.75	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
			—	12	—	—	11	—
Total Score:								
Model Range:			5-18	4-15	3-12	2-10	3-12	5-18
Functional Capacity Index:			Total Score	12 = 0.80	12	10	11 = 0.92	18
			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	
<u>Primary Variables</u>		
• Plant Species Diversity	<ul style="list-style-type: none"> • high diversity • medium diversity • low diversity 	5 3 1
• Vegetation Density/Dominance	<ul style="list-style-type: none"> • high/very high • medium • sparse/low 	5 3 1
• Wetland Juxtaposition	<ul style="list-style-type: none"> • connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated 	5 3 1 0
		13
	Total Score:	
	Model Range:	2-15
	Functional Capacity Index:	= $\frac{\text{Total Score}}{15}$
	Index Range:	0.13-1.0

$\frac{13}{15} = 0.87$
 $\frac{11}{15} = 0.73$

2.9.8 Contribution to Abundance and Diversity of Wetland Fauna

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

VARIABLES	CONDITIONS	WEIGHTS
Direct Indicators of Disfunction	none	
Direct Indicators of Function	none	
<u>Primary Variables</u>		
● 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
● Vegetation Interspersion	● moderately even distribution	2
	● highly uneven distribution	1
	● no vegetation	0
	● high interspersion	3
	● moderate interspersion	2
● Number of Layers and Percent Cover	● low interspersion	1
	● no vegetation	0
	● 5 or more layers	3
	● 3-4 layers	2
	● 1-2 layers	1
● layers poorly distinguishable (< 25% cover)	● 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:	All Other HGM Types:	Total Score: $\frac{23}{26}$
Model Range: 4-33		Model Range: 4-36
Functional Capacity Index = $\frac{\text{Total Score}}{33}$		Functional Capacity Index = $\frac{\text{Total Score}}{36}$
Index Range: 0.12-1.0		Index Range: 0.11-1.0

$\frac{23}{36} = 0.64$
 $\frac{26}{36} = 0.72$

1.6 ac. - 84% of total 1.9 ac. wetlands



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 Occurrence 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
 Fluvisquent 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

Actual #
 5
 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%)
 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

6 or > (actual #)
 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
 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

dam

CRH-3

1.9 ac Total Wetlands.

1.6 ac Slope.

0.32 ac Lowstrine (i: < 25%, 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 Piezometric 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 Piezometric Surface	• wetland substrate elevation below piezometric surface		18	15	15	18
• Inlet/Outlet Class	• no inlet/perennial outlet		18	15	15	18
Primary Variables						
• Microrelief of Wetland Surface	• pronounced		3	3	3	3
	• well developed		2	2	2	2
	• poorly developed		1	1	1	1
	• absent		0	0	0	0
• Inlet/Outlet Class	• perennial inlet/perennial outlet		3	3	0	3
	• intermittent inlet/perennial outlet		2	2	0	2
	• all other classes		0	0	0	0
• pH	• alkaline		3	3	3	3
	• circumneutral		2	2	2	2
	• acid		0	0	0	0
	• no water present		0	0	0	0
• Surficial Geologic Deposit Under Wetland	• high permeability stratified deposits		3	3	3	3
	• low permeability stratified deposits		2	2	2	2
	• glacial till		1	1	1	1
• Wetland Water Regime	• wet; permanently flooded, intermittently exposed, semipermanently flooded		3	0	3	3
	• drier; seasonally flooded, temporarily flooded, saturated		1	0	1	1

(continued)

2.9.1

Modification of Ground Water Discharge (Continued)

VARIABLES	CONDITIONS	HGM TYPES:	WEIGHTS			
			D	S	R	F
• Soil Type	• histosol		3	3	3	3
	• mineral hydric soil		1	1	1	1
			-	-	-	-
		Total Score:				
		Model Range:	3-18	2-15	3-15	3-18
		Functional Capacity Index:	Total Score			
			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)

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 Piezometric 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	18	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				
Model Range:			4-27	4-21	2-21	0-12	3-24	4-30
Functional Capacity Index:			Total Score	$\frac{11}{21} = 0.52$				
			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						
<u>Storm and Flood Water Storage</u> Function Model Score		<u>Modification of Groundwater</u> 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 $\frac{6}{9} = 0.67$			
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
			—	11	—	—	—	—
Total Score:								
Model Range:			4-18	3-15	2-12	1-12	2-12	4-18
Functional Capacity Index:			Total Score	$\frac{11}{15} = 0.73$				
			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
			—	14	—	—	—	—
Total Score:								
Model Range:			5-18	4-15	3-12	2-10	3-12	5-18
Functional Capacity Index:			Total Score	$K = 0.93$				
			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	
<u>Primary Variables</u>			
•	Plant Species Diversity	<ul style="list-style-type: none"> • high diversity • medium diversity • low diversity 	5 3 1
•	Vegetation Density/Dominance	<ul style="list-style-type: none"> • high/very high • medium • sparse/low 	5 3 1
•	Wetland Juxtaposition	<ul style="list-style-type: none"> • connected upstream and downstream • connected above or below • other wetlands nearby but not connected (400 m or closer) • isolated 	5 3 1
			0
			13
Total Score:			
Model Range:			2-15
Functional Capacity Index:			= Total Score 13 = 0.87 15
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
• Vegetation Interspersion	• moderately even distribution	2
	• highly uneven distribution	1
	• no vegetation	0
	• high interspersion	3
	• moderate interspersion	2
• Number of Layers and Percent Cover	• low interspersion	1
	• no vegetation	0
	• 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
		<u>25</u>
Slope Wetlands:	All Other HGM Types:	Total Score:
Model Range: 4-33		Model Range: 4-36
Functional Capacity Index = $\frac{\text{Total Score}}{33}$ <i>25 = 0.76</i>		Functional Capacity Index = $\frac{\text{Total Score}}{36}$
Index Range: 0.12-1.0		Index Range: 0.11-1.0