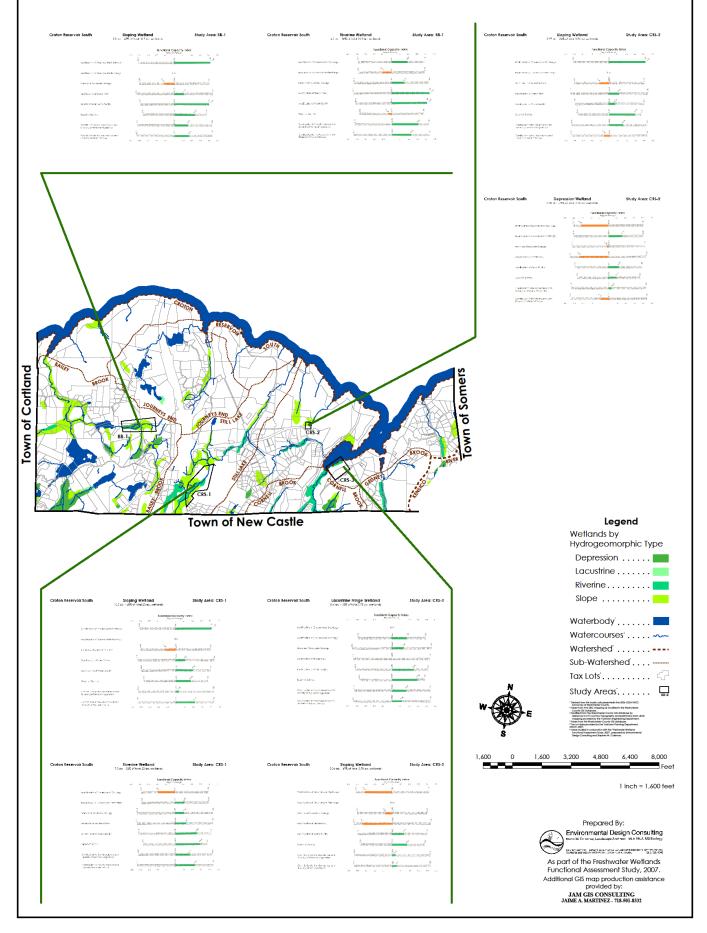
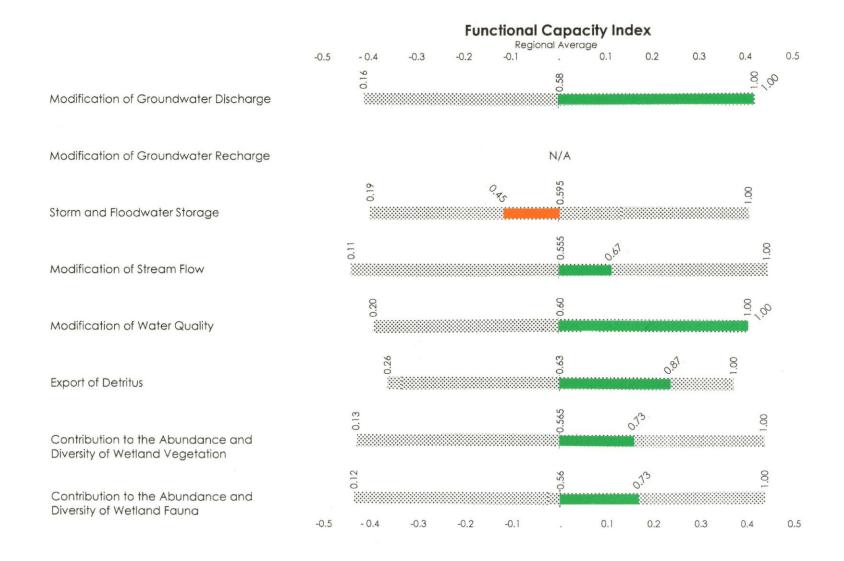
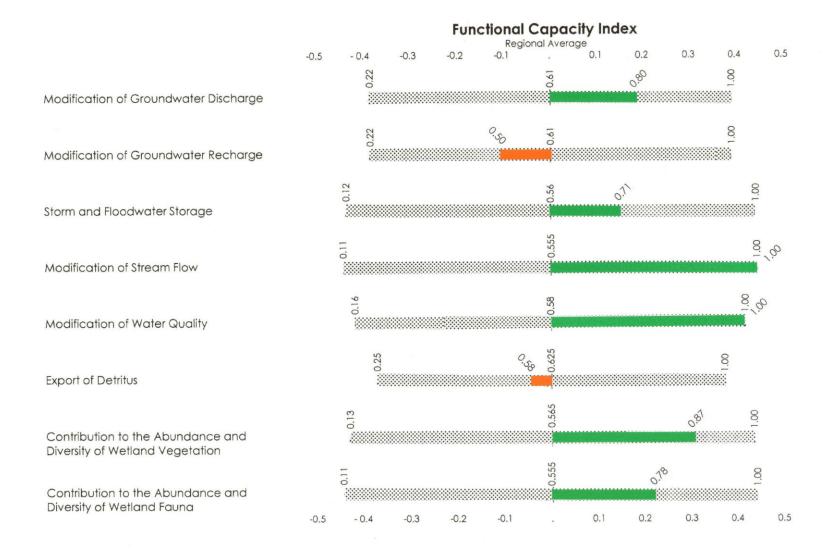
## Town of Yorktown, New York Wetland Functional Assessment Study Croton Reservoir South Watershed



5.0 ac. - 47% of total 10.7 ac. wetlands



4.1 ac. - 38% of total 10.7 ac. wetlands



#### WETLAND INVENTORY DATA

| WEILIAM INV                    | ENTORIL |            |  |
|--------------------------------|---------|------------|--|
| Project Number: YORKTOON       | Date:   | BOTH       |  |
| Wetland Number: BB-1           |         |            |  |
| USGS Quadrangle: OSSILILIG     |         |            |  |
| Field Investigators: BA & S.C. |         |            |  |
| PART 1 - CHARACTER             | IZATION | of WETLAND |  |

| SURFAC  | CE WATER FLOW VE   | CTORS  | PLANT   | SPECIES   |
|---|--|--|---|---|
| Condition   | Percent/Acreag   | Depressional  Slope Flat  Extensive Peatland  Lacustrine Fringe Riverine | Red Maple Sweet Birch Chashark Hekory Tulp toplar Red Oak American Reseh American Elm Reschoot Spice bush Witchhazel Gilky Dansoal Lingsof Enourous Japanese Barberry Arronemoal Viburhum |   |
| Type  | VEGETATION TYPES Percent/Acreage   |  | Carlic Mustard<br>Tussek George<br>Skunk Castare<br>Dennsylvania Selce  |   |
| Forested Wetland Evergreen Needle-leaved Deciduous Broad-leaved Needle-leaved         | 1%   | Histosol  Fibric  Hemic  Sapric  | Pennsylvania Selje<br>Prisen lyg<br>Prisay Willew   |   |
| Scrub Shrub Evergreen Broad-leaved Needle-leaved Deciduous Broad-leaved Needle-leaved | 14%  | Mineral Hydric Soil Gravelly Sandy Silty Clayey                          | OW Obligate Wetland   | COM Common  |
| Emergent Wetland<br>Persistent<br>Non-persistent<br>Aquatic Bed                       | and the later of t | GEOLOGY Surficial: Glacial till  | FW Facultative Wetland F Facultative FU Facultative Upland OU Obligate Upland DOM Dominant  | OCC Occasional C Canopy S Sapling TS Tall Shrub LS Low Shrub  |
| Total   | 100%   | Bedrock:   | DDE EMPI  | H Herb  |
|   |  |  | Public ownership Wildlife management area Fisheries management area Designated State or Federal protected wetlar  | Documented habitat fo<br>state or federal listed<br>species<br>Regionally scarce<br>wetland category<br>Historic/archaeologic |

### WETLAND INVENTORY DATA (continued)

### PART 2 - CHARACTERIZATION of MODEL VARIABLES

| LANDSCAPE VARIABLES  | Microrelief of Wetland Surface:  | Number of Types & Relative Proportions:   |
|--|--|---|
| Size: Smail (<10 acres) Medium (10-100 acres)  | Pronounced >45 cm Well Developed 15-45 cm Poorly Developed <15 cm Absent   | Number of Types Evenness of Distribution  Actual # Even Distribution  Moderately Even Distribution  Highly Uneven Distribution  |
| Wetland Juxtaposition:  Connected Upstream and Downstream Only Connected Above Only Connected Below Other Wetlands Nearby but not Connected Wetland Isolated  Fire Occurence and Frequency: Natural; Predictable Frequency Natural; Sporadic Frequency Human-caused; Predictable Human-caused; Sporadic Rare Event No Evidence  Regional Scarcity: Not Scarce (>5% of total wetland area of region) Scarce (<5% of total wetland area of region) Watershed Land Use: | Inlet/Outlet Class:  No Inlet/No Outlet No Indet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Untervoutlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Recharge Discharge Index Outlet Data: Recharge Discharge Recharge Piezometric Surface: Piezometric Surface: Piezometric Surface: | Vegetation Density/Dominance:    Sparse (0-20%)     Low Density (20-40%)     Medium Density (40-60%)     High Density (80-100%)     Very High Density (80-100%)     Vegetative Interspersion:   High (small groupings, diverse and interspersed)     Moderate (broken irregular rings)     Low (large patches, concentric rings)     Number of Layers and Percent Cover:   Number of Layers % Cover     6 or > (actual #)   1. submergents:     5   2. floating:     4   3. moss-lichen:     3   4. short herb: |
| 25-50% urbanized 0-25% urbanized HYDROLOGIC VARIABLES  | Not Available  Evidence of Sedimentation:  No Evidence Observed  | 2 5. tall herb: 1 6. dwarf shrub: 7. short shrub: 8. tall shrub:  |
| Surface Water Level Fluctuation of Wetland:  High Fluctuation Low Fluctuation Never Inundated  Frequency of Overbank Flooding: Return Interval > 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:   | Fluvaquent Soits  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  | Plant Species Diversity:  Low 1-2 plots sampled Medium 3-4 plots sampled Froportion of Animal Food Plants:  Low (5-25% cover) Medium (25-50% cover) Fligh (>50% cover)  Cover Distribution:  Continuous Cover Small Scattered Patches 1 or More Large Patches; Parts of Site Open Solitary, Scattered Stems  Dead Woody Material:  Abrundant (>50 of wetland surface) Moderately Abrundant (25-50% of surface)  |
| 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:                          | VEGETATION VARIABLES  Vegetation Lacking:  Dominant Wetland Type:  Forested - Evergreen - Needle-leaved Forested - Deciduous - Broad-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  | Interspersion of Cover and Open Water:    26-75% Scauered or Peripheral   >75% Scautered 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   |
| High >10% Low <10%   |  |   |

BB-1 Total Wetlands 10,700 = 5%, ws.

Slope 50ne = 47%

Piverine 411 ne = 38%

Depression 1.6 es - 15%\*

Modification of Ground Water Discharge \*\*HLLM TYPES & 25% not evaluated separately

### 2.9.1

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

(continued)

|             |                            |                | WEIG  | HTS   |       |
|-------------|----------------------------|----------------|-------|-------|-------|
| VARIABLES   | CONDITIONS HGM TYPES:      | D              | S     | R     | F     |
| Soil Type   | • histosol                 | 3              | 3     | 3     | 3     |
| • Soil Type | mineral hydric soil        | 1              | 1     | 1     | 1     |
|             |                            | -              | -     | ĪZ    | -     |
|             | Total Score:               |                |       |       |       |
|             | Model Range:               | 3-18           | 2-15  | 3-15  | 3-18  |
|             | Functional Capacity Index: | Total<br>Score | 15 de |       |       |
|             | •                          | 18             | 15    | 15    | 18    |
|             | Index Range:               | 0.19-1.0       | 0.16- | 0.22- | 0.19- |

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

|  |   |                                 |   |   | WEIGH | TS |   |
|--|---|---------------------------------|---|---|-------|----|---|
| VARIABLES  | CONDITIONS HGM TYPES:                                 |                                 | D | L | EP    | R  | F |
| Indicators of Disfunction  Inlet/Outlet Class                          | <ul> <li>no inlet/perent tent inlet/perent</li> </ul> | nial outlet; intermit-          | 0 |   |       |    | 0 |
| Nested Piezometer Data   | discharge conc  | lition                          | 0 | 0 | 0     | 0  | 0 |
| <ul> <li>Relationship to Regional Piezo-<br/>metric Surface</li> </ul> | wetland substr     or at piezomet                     | ate elevation above ric surface | 0 | 0 | 0     | 0  | 0 |
| Presence of Seeps and Springs  | <ul> <li>presence of se</li> </ul>                    | eps or springs                  | 0 | 0 | 0     | 0  | 0 |

(continued)

|  |   |                                       |                               | WEIGHTS  |              |              |       |  |  |
|--|---|---------------------------------------|-------------------------------|--|--------------|--------------|-------|--|--|
| VARIABLES  | CONDITIONS  | CONDITIONS HGM TYPES:                 |                               | L  | EP           | R            | F     |  |  |
| Direct Indicators of Function  Inlet/Outlet Class            | • perennial inlet                                     | /no outlet                            | 21                            |  |              |              | 21    |  |  |
| Nested Piezometer Data                                       | • recharge condi                                      | ition                                 | 21                            |  |              |              | 21    |  |  |
| Relationship to Regional Peizometeric Surface                | <ul> <li>wetland substr<br/>piezometric su</li> </ul> | rate elevation below<br>orface        | 21                            | Lucia Reva   |              |              | 21    |  |  |
| Primary Variables  Microrelief of Wetland Surface            | Poorly Develo   | nned .                                | 3                             | 3  | 1            | 3            | 3     |  |  |
| Microreller of Welland Surface                               | Absent  | pea                                   | 3 2                           | 3  | 2 3          | 3 3 2        | 3 2 1 |  |  |
|  | Well Develope   | ed                                    |                               | 2  | 2            | 2            | 1     |  |  |
|  | <ul> <li>Pronounced</li> </ul>                        |                                       | 1                             | 1  | 3            | 1            |       |  |  |
| Inlet/Outlet Class   | Perennial Inle     All Other Class                    | t/Intermittent Outlet                 | 3                             | 0  | 0            | 0            | 3     |  |  |
|  | • Acid  |                                       | 3                             | 3  | 3            | 3            | 3     |  |  |
| • pH   | Circumneutral   | 1                                     | 2                             | 2  | 3<br>2<br>1  | 2            | 3 2 1 |  |  |
|  | Alkaline  |                                       | 1                             | 1  |              | 1            | 1     |  |  |
|  | No water pres   | sent                                  | 0                             | 0  | 0            | 0            | 0     |  |  |
|  | 2 - 100 200   |                                       | 4                             |  | 1            | 1            | 3     |  |  |
| <ul> <li>Surficial Geologic Deposit Under Wetland</li> </ul> |   | oility Stratified Depos-              | 3 2                           | 1 2  | 2            | 1 2          | 2     |  |  |
|  | High Permeatits                                       | bility Stratified Depos-              | 1                             | 3  | 3            | 3            | 1     |  |  |
|  | High Fluctuat   | rion                                  | 3                             | 3  | 0            | 3            | 3 2   |  |  |
| Surface Water Level Fluctuation of the Wetland               | Low Fluctuati   | ion                                   | 3 2                           | 3 2  | 0            | 2            | 2     |  |  |
| of the wettand   | Never Inunda  |                                       | 1                             | 1  | 0            | 1            | 1     |  |  |
| Wetland Water Regime   | Drier: Season   | nally Flooded, Tem-<br>ded, Saturated | 3                             | 3  | 0            | 3            | 3     |  |  |
|  | a Wet Perman  | nently Flooded, Inter-                | 1                             | 1  | 0            | 0            | 1     |  |  |
|  | mittently Exp<br>manently Flo                         | osed, Semiper-                        | _                             |  |              | _            | _     |  |  |
|  | Gravelly or S   | Sandy Mineral Hydric                  | 3                             | 3  | 0            | 3            | 3     |  |  |
| Soil Type  | Silty or Clave  | ey Mineral Hydric                     | 2                             | 2  | 0            | 2            | 2     |  |  |
|  | Sapric Histos     Fibric or Her                       | iol                                   | 0                             | 0  | 0            | 0            | 0     |  |  |
|  |   | Total Score:                          | 9                             | and the state of t |              |              |       |  |  |
|  |   | Model Range:                          | 4-<br>21                      | 4-18   | 2-12         | 4-18         | 4-2   |  |  |
| •  | Fun   | ctional Capacity Index:               | To-<br>tal<br>Sco<br>re<br>21 | 0A3<br>18  | 12           | 9 = 0        | 21    |  |  |
|  |   | Index Range:                          |                               | 0.22-<br>1.0   | 0.16-<br>1.0 | 0.22-<br>1.0 | 0.1   |  |  |

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.

|  |   |     |     | WEI | GHTS |     |    |
|--|---|-----|-----|-----|------|-----|----|
| VARIABLES                                    | CONDITIONS HGM TYPES:                                   | D   | S   | L   | EP   | R   | F  |
| ndicators of disfunction                     | none  |     |     |     |      |     |    |
| Direct Indicators of Function                | no outlet   | 27  | 21  |     |      |     | 30 |
| Primary Variables                            |   |     |     |     |      |     |    |
| Inlet/Outlet Class                           | <ul> <li>perennial inlet/intermittent outlet</li> </ul> | 3   | 3   | 0   | 0    | 0   | 3  |
| a lillet/Outlet Class                        | 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  |
|  | · consisted   | 3   | 0   | 0   | 0    | 0   | 3  |
| Degree of Outlet                             | restricted unrestricted                                 | 0   | 0   | 0   | 0    | 0   | 0  |
| Restriction                                  | unrestricted  |     |     |     |      |     |    |
|  | *   | 3   | 3   | 0   | 3    | (3) | 3  |
| <ul> <li>Basin Topographic</li> </ul>        | low gradient  | 1   | 1   | 0   | 0    | 1   | 1  |
| Gradient                                     | <ul> <li>high gradient</li> </ul>                       | 1   | 0   | · · |      |     |    |
|  |   |     | (2) | 3   | 0    | 3   | 3  |
| <ul> <li>Wetland Water Regime</li> </ul>     | <ul> <li>Drier: seasonally flooded,</li> </ul>          | 3   | (3) | 3   | U    | ,   |    |
|  | temporarily flooded, saturated                          |     |     |     | 0    | 0   | 1  |
|  | Wet: permanently flooded, intermit-                     | 1   | 1   | 1   | 0    |     | 1  |
|  | tently exposed, semipermanently                         |     |     |     |      |     |    |
|  | flooded   |     |     |     |      |     |    |
|  | 110,000   |     |     |     |      |     |    |
| Surface Water Level                          | <ul> <li>high fluctuation</li> </ul>                    | 3   | 0   | 3   | 0    | 3   | 3  |
|  | low fluctuation   | 2   | 0   | 2   | 0    | 2   | 2  |
| Fluctuation of the                           |   | 0   | 0   | 0   | 0    | 0   | 0  |
| Wetland                                      | <ul> <li>never inundated</li> </ul>                     |     | ~   |     |      |     |    |
|  |   | 2   | 3   | 3   | 0    | 3   | 3  |
| <ul> <li>Ratio of Wetland Area to</li> </ul> | • large   | 3   | 3   | 1   | 0    | 1   | 1  |
| Watershed Area                               | • small   | 1   | (1  | 1   |      |     |    |
|  |   |     |     | 2   | 3    | 3   | 3  |
| <ul> <li>Microrelief of Wetland</li> </ul>   | <ul><li>pronounced</li></ul>                            | 3   | 3   | 3   |      | 2   | 2  |
| Surface                                      | <ul> <li>well developed</li> </ul>                      | 2   | 2   | 2   | 2    |     |    |
|  | poorly developed  | 1   | (1) | 1   | 1    | 1   | 0  |
|  | <ul><li>absent</li></ul>                                | 0   | 0   | 0   | 0    | 0   |    |
| <ul> <li>Frequency of Overbank</li> </ul>    | <ul> <li>overbank flooding absent</li> </ul>            | 0   | 0   | 0   | 0    | 0   | 0  |
| Flooding                                     | <ul> <li>return interval of &gt;5 yrs</li> </ul>        | 0   | 0   | 1   | 0    | 1   | 1  |
| Flooding                                     | • return interval of 2-5 yrs                            | 0   | 0   | 2   | 0    | 2   | 2  |
|  | • return interval of 1-2 yrs                            | 0   | 0   | 3   | 0    | (3) | 3  |
|  | - Tetuth interval of 1-2 year                           |     |     |     |      | _   |    |
|  | a high/uppy high  | 3   | 3   | 3   | 3    | (3) | 3  |
| <ul><li>Vegetation</li></ul>                 | high/very high  | 2   | 6   | 2   | 2    | 3 2 | 2  |
| Density/Dominance                            | • moderate  | 1   | 1   | ī   | 1    | 1   | 1  |
|  | • sparse/low  | 0   | 0   | 0   | 0    | 0   | 0  |
|  | <ul> <li>no vegetation</li> </ul>                       | U   | U   | 0   | 0    |     |    |

### 2.9.3 Storm and Flood-Water Storage (Continued)

|                     |  |                       |                  |              | WEIG             | HTS              |         |                  |
|---------------------|--|-----------------------|------------------|--------------|------------------|------------------|---------|------------------|
| VARIABLES           | CONDITIONS HGM TYPES:                                |                       | D                | s            | L                | EP               | R       | F                |
| Dead Woody Material | abundant     moderately abunda     sparse     absent | nt                    | 3<br>2<br>1<br>0 | 3 2 1 0      | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 | 3 2 1 0 | 3<br>2<br>1<br>0 |
|                     |  | Total Score:          | T                | 10           | _                | -                | 77      |                  |
|                     |  | Model Range:          | 4-27             | 4-21         | 2-21             | 0-12             | 3-24    | 4-30             |
|                     | Funct  | ional Capacity Index: | Score            | ARAGATA      | 21               | 12               | 17 =    | 0.11             |
|                     |  | Index Range:          | 0.15-<br>1.0     | 0.19-<br>1.0 | 0.09-            | 0-1.0            | 0.12-   | 0.13             |

### 2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

|            | VARIABLES                      | 3   |  | CON                         | DITIONS  | WEIGHTS           |
|------------|--------------------------------|---|--|-----------------------------|--|-------------------|
| ndicators  | of Disfunction                 |   | no outlet  |                             |  | 0                 |
| Direct Ind | licators of Function           | on  | none   |                             | WICO,  |                   |
|            | d Flood Water Ston Model Score | x<br>x<br>x<br>x<br>x<br>x<br>x<br>x<br>x | Modifica<br>Discharge<br>High<br>High<br>Mod<br>Mod<br>Low<br>Low<br>Low | Function M  3 3 3 2 2 2 1 1 |  | 9 6 3 6 4 2 3 2 1 |
| ٠          |                                |   |  | Function                    | Total Score:  Model Range: al Capacity Index: Index Range: | Total 9 - 10      |

<sup>\*</sup>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.

|   | Communication of the Association Communication Communicati |            |         | WEIG  | HTS  |      |            |
|---|--|------------|---------|-------|------|------|------------|
| VARIABLES                                 | CONDITIONS HGM TYPES   | D          | S       | L     | EP   | R    | F          |
| ndicators of disfunction                  | поле   |            |         |       |      |      |            |
| Direct Indicators of Function             | evidence of sedimentation  | 18         | 15      | 12    | 12   | 12   | 18         |
|   |  |            |         |       |      | -    |            |
| Primary Variables                         | • low intensity  | 3          | 3       | 3     | 3    | 3    | 3          |
| <ul> <li>Wetland Land Use</li> </ul>      | moderate intensity   | 2          | 2 .     | 2     | 2    |      | 2          |
|   | • high intensity   | 1          | i       | 1     | 1    | 1    | 1          |
|   | tand and gow   | 3          | 0       | 0     | 0    | 0    | 3          |
| <ul> <li>Degree of Outlet</li> </ul>      | • restricted outflow   | 2          | 0       | 0     | 0    | 0    | 2          |
| Restriction                               | <ul> <li>no outlet</li> <li>unrestricted outflow</li> </ul>  | 1          | 0       | 0     | 0    | 0    | 1          |
|   |  | 2          | 3       | 0     | 0    | 0    | 3          |
| <ul> <li>Inlet/Outlet Type</li> </ul>     | <ul> <li>no outlet</li> </ul>  | 3          |         | 0     | 0    | 0    | 2          |
|   | • intermittent outlet .  | 2          | 2       | 0     | 0    | 0    | 1          |
|   | • perennial outlet   | 1          | 0       | 0     |      | -    |            |
|   | forested wetland   | 3          | 3       | 3     | 3    | 3    | 3          |
| <ul> <li>Dominant Wetland Type</li> </ul> |  | 2          | 2       | 2     | 2    | 2    | 2          |
|   | scrub-shrub  | 2          | 2       | 2     | 2    | 2    | 2          |
|   | <ul> <li>emergent wetland</li> </ul>   | 1          | 0       | 0     | 0    | 0    | 0          |
|   | aquatic bed  | .0         | 0       | 0     | 0    | 0    | 0          |
|   | <ul> <li>no vegetation</li> </ul>  | . 0        |         |       |      |      |            |
|   | • forming a continuous cover   | 3          | (3)     | 3     | 3    | - 3  | 3          |
| <ul> <li>Cover Distribution</li> </ul>    | growing in small scattered patches   | 2          | 2       | 2     | 2    | 2    | 2          |
|   | e growing in small scattered pateries  | 1          | 1       | 1     | 1    | - 1  | 1          |
|   | one or more large patches  | i          | 1       | 1     | 1    | 1    | 1          |
|   | <ul> <li>solitary scattered stems</li> </ul>   | 0          | 0       | 0     | 0    | 0    | 0          |
| •   | <ul> <li>no vegetation</li> </ul>  | U          |         |       |      | 4    | 3          |
|   | <ul> <li>histosol or clayey soil</li> </ul>  | 3          | 3       | 3     | 3    | 3    |            |
| <ul> <li>Soil Type</li> </ul>             | • silty soil   | 2          | 2       | 2     | 0    | 2    | 2          |
|   |  | 1          | 1       | 1     | 0    | 1    | 1          |
|   | sandy or gravelly soil   | -          |         |       |      |      |            |
|   | Total Sco  | re:        |         |       |      |      |            |
|   | Model Ran  | ge: 4-18   | 3-15    | 2-12  | 1-12 | 2-12 | 4-         |
|   | Functional Capacity Ind  | ex: Tota   | 1 900 - | 1.0   |      | 17 : | 110        |
|   |  | Scor<br>18 | 15      | 12    | 12   | 12   | 11         |
|   | Index Rar  | ige: 0.22  | 0.20-   | 0.16- | 0.8- | 0.16 | - 0.<br>1. |
|   | INCX Kai   | 1.0        | 1.0     | 1.0   | 1.0  | 1.0  |            |

|  | and the second s |         |  | WEIG  | HTS   |   |      |
|--|--|---------|--|-------|-------|---|------|
| VARIABLES                                | CONDITIONS HGM TYPES:  | D       | S  | L     | EP    | R                                       | F    |
| Indicators of disfunction                | no outlet  | 0       | 0  |       | 0     |   | 0    |
| indicators of distunction                |  |         | ANNUAL SERVICE |       |       |   |      |
| Direct Indicators of Function            | none   | -       |  |       |       |   |      |
| Primary Variables                        |  | 3       | 3  | 3     | 3     | 3                                       | 3    |
| Wetland Land Use                         | <ul> <li>moderate intensity</li> </ul>   | 2       | (2)  | 2     | 2     | 2                                       | 2    |
|  | <ul> <li>low intensity</li> </ul>  | 1       | 4  | 1     | 1     | 1                                       | 1    |
|  | <ul> <li>high intensity</li> </ul>   | 1       | 1  | •     |       |   |      |
|  |  | 3       | 0  | 0     | 0     | 0                                       | 3    |
| Degree of Outlet                         | • unrestricted outflow   | 1       | 0  | 0     | 0     | 0                                       | 1    |
| Restriction                              | <ul> <li>restricted outflow</li> </ul>   | *       |  | -     |       |   |      |
|  |  | 3       | 3  | 0     | 0     | 0                                       | 3    |
| <ul> <li>Inlet/Outlet Class</li> </ul>   | perennial outlet   | 1       | 1  | 0     | 0     | 0                                       | 1    |
| 11100                                    | • intermittent outlet  | 1       | ,  | •     |       |   |      |
|  |  | 3       | 3  | 3     | 0     | 3                                       | 3    |
| <ul> <li>Wetland Water Regime</li> </ul> | e drier: seasonally flooded,   | 3       | 9  |       |       |   |      |
|  | temporarily flooded, saturated   | 1       | 1  | 1     | 1     | 1                                       | 1    |
|  | wet: permanently flooded,  | 1       | 1  |       | •     |   |      |
|  | intermittently exposed,  |         |  |       |       |   |      |
|  | semipermanently flooded  |         |  |       |       |   |      |
|  |  |         |  | 2     | 3     | 3                                       | 3    |
| - Managian Den                           | <ul> <li>high/very high</li> </ul>   | 3       | 3  | 3     | 2     | 2                                       | 2    |
| Vegetation Den-                          | • medium   | 2       | 2  | 2     |       | 1                                       | 1    |
| sity/Dominance                           | • sparse/low   | 1       | 1  | 1     | 1     | 0                                       | 0    |
|  |  | 0       | 0  | 0     | 0     | 0                                       | U    |
|  | o no vegetation  |         |  |       |       |   | 3    |
| *  | • mineral hydric soil  | 3       | (3)  | 3     | 3     | 3                                       |      |
| <ul> <li>Soil Type</li> </ul>            |  | 1       | 1  | 1     | 1     | 1                                       | 1    |
|  | <ul><li>histosol</li></ul>   |         |  |       |       |   | -    |
|  |  | 17      | 13   |       |       | 7                                       |      |
|  | Total Score  | :       |  |       |       |   |      |
|  |  |         | 4-15   | 3-12  | 2-10  | 3-12                                    | 5-17 |
|  | - Model Range  | : 5-18  | 4-13   | 1172  | 2 10  | 100000000000000000000000000000000000000 |      |
|  |  | en .    |  | 10.0  |       |   | 181  |
|  | Functional Capacity Index  | c: Tota | 10.63  | 0.    |       | 7,                                      | 2    |
|  |  | Scor    | 2  | 12    | 10    | 12                                      | 18   |
|  |  | 18      | 15   | 12    | 10    |   |      |
|  |  |         | 0.04   | 0.25- | 0.20- | 0.25-                                   | 0.2  |
|  | Index Range  | e: 0.27 |  | 1.0   | 1.0   | 1.0                                     | 1.0  |
|  |  | 1.0     | 1.0  | 1.0   | 1.0   | a t w                                   |      |

# 2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation (This model is identical for all HGM types)

| VARIABLES  | CONDITIONS   | WEIGHTS                       |                  |  |
|--|--|-------------------------------|------------------|--|
| Indicators of Disfunction                                  | no vegetation  |                               | 0                |  |
| Direct Indicators of Function                              | none   |                               |                  |  |
| Primary Variables Plant Species Diversity                  | <ul> <li>high diversity</li> <li>medium diversity</li> <li>low diversity</li> </ul>  |                               |                  |  |
| • Vegetation Density/D minance                             |  |                               | 5                |  |
| <ul> <li>Wetland</li> <li>Juxtaposit</li> <li>n</li> </ul> | connected upstream and downstream     connected above or below     other wetlands nearby but not     connected (400 m or closer) |                               | 1                |  |
|  | • isolated   |                               | 13 11            |  |
|  |  | Total Score:                  |                  |  |
|  |  | Model Range:                  | 2-15             |  |
|  |  | Functional Capacity<br>Index: | = Total Score 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                                     | CONTRACTOR OF THE SECTION AND ADDRESS AND |
| Direct Indicators of Function                            | none                                     |   |
|  |  | (3)   |
| Primary Variables  Watershed Land Use                    | low intensity (0-25% urbanized)          | 3   |
| Watershed Land Use                                       | moderate intensity (25-50% urbanized)    | 1   |
|  | • high intensity (>50% urbanized)        |   |
|  | low intensity                            | 3   |
| <ul> <li>Wetland Land Use</li> </ul>                     | • moderate intensity                     | 1   |
|  | • high intensity                         | 1   |
|  |  | (3)   |
|  | wet: permanently flooded, intermittently | 0   |
| Wetland Water Regime                                     | avnosed seminermanently flooded          |   |
|  | drier: seasonally flooded, temporarily   | D   |
|  | flooded, saturated                       |   |
|  |  | 3   |
| a and a life of the same                                 | • pronounced                             | 2   |
| <ul> <li>Microrelief of Wetland Surface</li> </ul>       | well developed                           | 3 2   |
|  | poorly developed                         | 0   |
|  | • absent                                 |   |
| *  |  | 3<br>2<br>1<br>0  |
| CWalland types and Relative                              | • 5 or more types                        | (2)   |
| <ul> <li>Number of Wetland types and Relative</li> </ul> | • 3-4 types                              |   |
| Proportions  | • 1-2 types                              | 0   |
|  | • no vegetation                          |   |
|  | even distribution                        | 3<br>2<br>0   |
|  | moderately even distribution             |   |
|  | highly uneven distribution               | 0   |
|  | • no vegetation                          |   |
|  |  | 3   |
| <ul> <li>Vegetation Interspersion</li> </ul>             | • high interspersion                     | C   |
|  | moderate interspersion                   | 1   |
|  | • low interspersion                      | O   |
|  | • no vegetation                          | 3   |
| Number of Layers and Percent Cover                       | • 5 or more layers                       | 2   |
| Number of Layers and reference                           | • 3-4 layers                             | 1   |
|  | • 1-2 layers                             | 0   |
|  | • no vegetation                          |   |
|  | • layers well developed (>50% cover)     |   |
|  | e layers with moderate cover (26-50%     | 1   |
|  | cover)                                   | 0   |
|  | e layers poorly distinguishable (<25%    | Y Comments  |
|  | cover)                                   | 0   |
|  | • no vegetation                          | V   |
|  | - 110 Ackerment                          |   |

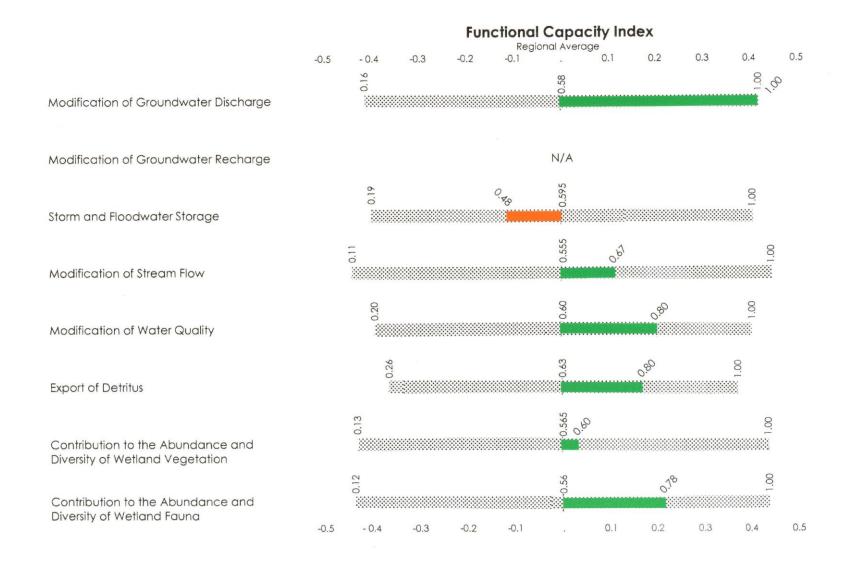
# 2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

| VARIABLES   | CONDITIONS  |                              |                                     | WEIGHTS                   |
|---|---|------------------------------|-------------------------------------|---------------------------|
| Interspersion of Vegetation Cover and<br>Open Water | <ul> <li>26-75% scattered of</li> <li>&gt;75% scattered of</li> <li>&lt;25% scattered of</li> <li>100% cover or ope</li> <li>no vegetation</li> </ul> | r peripheral<br>r peripheral |                                     | 3 2 0                     |
| • Size  | <ul> <li>large (&gt; 100 acres)</li> <li>medium (10-100 a</li> <li>small (&lt; 10 acres)</li> </ul>   | cres)                        |                                     | 3 17                      |
| Wetland Juxtaposition                               | other wetlands with connected above of their wetlands with their wetlands with their wetlands with their wetlands.                                    | or below                     |                                     | 1                         |
|   | o wetland isolated  | :                            |                                     | 0 78 30                   |
| Slope Wetlands:                                     |   | All Other HGM Types:         | Total Score:                        | -25                       |
| Model Range: 4-33                                   |   |                              | Model Range:<br>Functional Capacity | 4-36  Total Score ZS = 01 |
| Functional Capacity Index = Total Score 33          | 24 =0.73  |                              | Index =                             | 36<br>0.11-1.0            |
| Index Range: 0.12-1.0                               |   |                              | Index Range                         |                           |

### **Sloping Wetland**

16.0 ac. - 68% of total 23 ac. wetlands

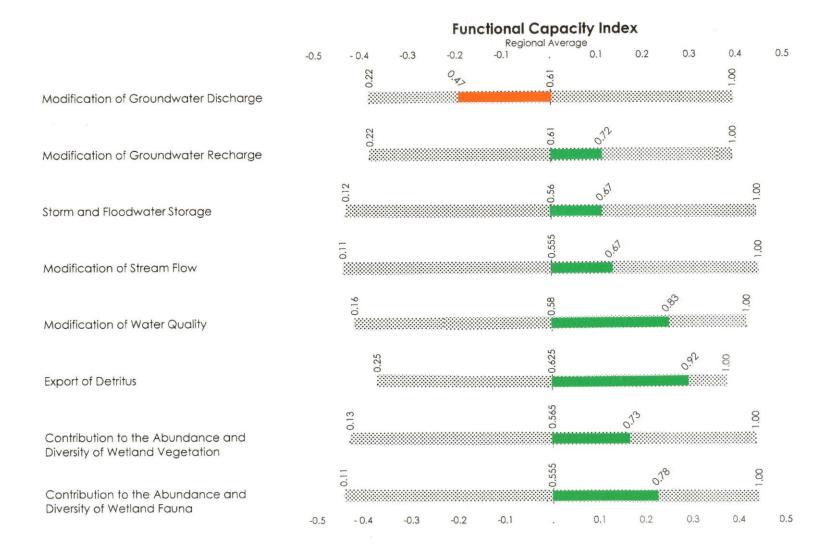
Study Area: CRS-1



#### **Riverine Wetland**

7.0 ac. - 32% of total 23 ac. wetlands

Study Area: CRS-1



### WETLAND INVENTORY DATA

SLOPE 16 ac 68% 400 PIVERINE 7 ac 32% 400

| Project Number: YOLKTOWL | Date: DEPLESION 0,15 at 419.* |
|--------------------------|-------------------------------|
| Wetland Number: CRS-1    | Total Wetland 23 ac           |
| Aerial Photo Numbers:    | * WETLAND CLASSES Z Z5        |
| USGS Quadrangle:         | AN EVALUATED SEPARATED        |
| Field Investigators:     |                               |

| SURFAC  | E WATER FLOW VEC | TORS   | PLANT   | SPECIES   |
|---|------------------|--|---|---|
| Condition   | Percent/Acreage  |  | PLANT  PLANT  PLANT  PLANT  PLANT  AMERICAN ISAM  TOTIC FEPTE  ARCHAN KAH  WHITE HOH  WITCHHARDEL  BRIAR  ARABE SPP  GILLET DOGWOOD  JAPANEE HONEY SULLE  | \$ 1. 2 8 2 5 5 5 5 5 2 2 2 1 1 1 1 1 1 1 1 1 1 1   |
| <u> </u>  | 32%              | Fringe<br>Riverine   | SHADBUSH SHEVICEREDRY<br>PLANCHIAW VIRURIUM.<br>SWEET BIRCH<br>JAPANISSE ROSE<br>BITTERSWEET  |   |
| *   | VEGETATION TYPES |  | HOENBEAN  |   |
| Forested Wetland Evergreen Needle-leaved Deciduous Broad-leaved Needle-leaved Scrub Shrub Evergreen Broad-leaved Needle-leaved Deciduous Broad-leaved Needle-leaved Deciduous Broad-leaved Needle-leaved Needle-leaved Emergent Wetland Persistent Non-persistent Aquatic Bed | 90% 5% 100%      | SOIL TYPES  Histosol  • Fibric    • Hemic    • Sapric    Mineral Hydric Soil  • Gravelly    • Sandy  • Silty    • Clayey    GEOLOGY  Surficial:  Acial  Bedrock: | LED ONE  JUNE PINE  CHRISTMA FERM  MUSTARD GARLIC  LOTICE BUSH  APRONHOOD VIROLULA  APRONHOOD VIROLULA  FUTER FERM  OW Obligate Wetland  FW Facultative Wetland  F Facultative Upland  OU Obligate Upland | COM Common OCC Occasional C Canopy S Sapling TS Tall Shrub LS Low Shrub H Herb                                  |
|   |                  |  | PRE-EMP  Public ownership Wildlife management area Fisheries management area Designated State or Federal protected wetla  | Documented habitat for state or federal listed species Regionally scarce wetland category Historic/archaeologic |

### WETLAND INVENTORY DATA (continued)

## PART 2 - CHARACTERIZATION of MODEL VARIABLES

| LANDSCAPE VARIABLES   | Microrelief of Wetland Surface:   | 1 Number of The control of the contr |
|---|---|--|
| Size:    Small (<10 acres)   Medium (10-100 acres)   Large (>100 acres)   Wetland Juxtaposition:   Connected Upstream and Downstream  | Pronounced >45 cm  Well Developed 15-45 cm  Poorly Developed <15 cm  Absent  Inlet/Outlet Class:  | Number of Types & Relative Proportions:  Number of Types   |
| Only Connected Above Only Connected Below Other Wetlands Nearby but not Connected Wetland Isolated  Fire Occurence and Frequency: Natural; Sporadic 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   0-25% urbanized   HYDROLOGIC VARIABLES | No Inter/Intermittent Outlet No Inter/Perennial Outlet Intermittent Inter/No Outlet Intermittent Interviolet Intermittent Outlet Intermittent Interviolet Intermittent Outlet Perennial Outlet Intermittent Outlet Intermittent Outlet Perennial Outlet Intermittent Outlet | Vegetation Density/Dominance:    Sparse (0-20%)   Low Density (20-40%)   Medium Density (40-60%)   Were High Density (60-80%)   Very High Density (80-100%)  |
| Surface Water Level Fluctuation of Wetland:  High Fluctuation Low Fluctuation Never Inundated  Frequency of Overbank Flooding:  Return Interval > 5 yrs.  | Sediment Observed on Wetland Substrate Fluvaquent Soils  Evidence of Seeps and Springs: No Seeps or Springs Seeps Observed Perennial Spring Intermittent Spring   | 9. sapling: 10. tree:  Plant Species Diversity:  Low 1-2 plots sampled Medium 3-4 plots sampled High 5 or more plots sampled   |
| Return Interval 2-5 yrs. Return Interval 1-2 yrs. No Overbank Flooding pH:  | SOIL VARIABLES Soil Lacking:  | Proportion of Animal Food Plants:  Low (5-25% cover)  Medium (25-50% cover)  High (>50% cover)   |
| Acid <5.5 Circumneutral 5.5-7.4 Alkaline >7.4 No Water  | Histosol:    Fibric   Hemic   Sapric  | Cover Distribution:  Continuous Cover  Small Scattered Patches   |
| Surficial Geologic Deposit Under Wetland  Low Permeability Stratified Deposits  High Permeability Stratified Deposits  Glacial Till   | Mineral Hydric Soil:  Gravelly Sandy Silty  | l or More Large Patches; Parts of Site Open Solitary, Scattered Stems Dead Woody Material:   |
| Wetland Land Use:  High Intensity (ie. agriculture)  Moderate Intensity (ie. forestry)  Low Intensity (ie. open space)  | VEGETATION VARIABLES Vegetation Lacking:  | Abrundant (>50 of wetland surface) Moderately Abrundant (25-50% of surface) Low Abrundance (0-23% of surface) Interspersion of Cover and Open Water:   |
| Wetland Water Regime:  Wet: Perm Flooded, Intermittently Exposed, Semiperm. Flooded Drier: Seasonally Flooded, Temporarily Flooded, Saturated   | Dominant Wetland Type:    Forested - Evergreen - Needle-leaved   Forested - Deciduous - Broad-leaved   Forested - Deciduous - Needle-leaved   | 26-75% Scattered or Peripheral >75% Scattered or Peripheral <25% Scattered or Peripheral 100% Cover or Open Water Stream Sinuosity:  |
| High Gradient > 2%   Low Gradient < 2%  | Scrub Shrub - Evergreen - Broad-leaved Scrub Shrub - Evergreen - Needle-leaved Scrub Shrub - Deciduous - Broad-leaved Scrub Shrub - Deciduous - Broad-leaved Scrub Shrub - Deciduous - Needle-leaved Emergent - Persistent Emergent - Non-persistent Aquatic Bed  | 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   |

CRS-1 SLOPE 16 ac 68% RIVERINE 7 ac 32%: \*DETRESSION 0.15 ac 21%

2 25% MOT BUHLLIGHED SISPARATELY

## 2.9.1 Modification of Ground Water Discharge

Wetland Water

Regime

WEIGHTS VARIABLES CONDITIONS HGM TYPES: D S B F Indicators of Disfunction Inlet/Outlet Class perennial inlet/no outlet 0 0 0 0 Nested Piezometer recharge condition 0 0 0 0 Data Relationship to wetland substrate elevation above 0 0 0 0 Regional Piezopiezometric surface metric Surface Direct Indicators of (15) Function evidence of perennial seeps or 18 15 18 Presence of Springs springs and Seeps Nested Piezometer discharge condition 18 15 15 18 Data Relationship to wetland substrate elevation below 15 18 15 18 Regional piezometric surface Peizometeric Surface Inlet/Outlet Class no inlet/perennial outlet 18 15 15 18 Primary Variables Microrelief of pronounced 3 3 3 3 Wetland Surface 2 well developed 2 2 poorly developed 1 0 0 0 0 Inlet/Outlet Class 0 perennial inlet/perennial outlet 3 3 3 intermittent inlet/perennial outlet 2 2 2 all other classes 0 0 0 pH alkaline 3 3 3 2 2 20 circumneutral 0 0 no water present 0 0 0 Surficial Geologic high permeability stratified deposits 3 3 3 Deposit Under low permeability stratified deposits 2 2 2 Wetland glacial till 1 1

wet; permanently flooded, inter-

drier; seasonally flooded, tempo-

rarily flooded, saturated

mittently exposed, semipermanently

3

1

0

0

3

1

(continued)

3

|  |   |                                      |                  | ,            | WEIGH        | ITS          |             |
|--|---|--------------------------------------|------------------|--------------|--------------|--------------|-------------|
| VARIABLES  | CONDITIONS  | HGM TYPES:                           | D                | L            | EP           | R            | F           |
| Direct Indicators of Function Inlet/Outlet Class             | perennial inlets  | /no outlet                           | 21               |              |              |              | 21          |
| Nested Piezometer Data                                       | • recharge condi  | tion                                 | 21               |              |              |              | 21          |
| Relationship to Regional Peizometeric Surface                | wetland substra     piezometric su                          | ate elevation below                  | 21               |              |              |              | 21          |
| Primary Variables  |   |                                      |                  |              |              |              |             |
| <ul> <li>Microrelief of Wetland Surface</li> </ul>           | <ul> <li>Poorly Develop</li> </ul>                          | ped                                  | 3                | 3 2          | 1            | 3            | 3           |
|  | Absent     Well Develope                                    | .a                                   | 3 2              | 3            | 1 2          | 3            | 3           |
|  | <ul> <li>Well Develope</li> <li>Pronounced</li> </ul>       | d                                    | 1                | 1            | 3            | 1            | 3<br>2<br>1 |
| • Inlet/Outlet Class   | Perennial Inlet.     All Other Clas                         | /Intermittent Outlet                 | 3                | 0            | 0            | 0            | 3           |
|  |   |                                      |                  |              |              |              |             |
| • pH   | • Acid  |                                      | 3                | 3            | 3            | 3            | 3           |
|  | <ul> <li>Circumneutral</li> <li>Alkaline</li> </ul>         |                                      | 3<br>2<br>1      | 2            | 2            | 3            | 3<br>2<br>1 |
|  | No water prese  | ent                                  | Ô                | 0            | 0            | Ó            | Ô           |
| <ul> <li>Surficial Geologic Deposit Under Wetland</li> </ul> |   | lity Stratified Depos-               | 3 2              | 1 2          | 1 2          | 1            | 3 2         |
|  | <ul> <li>High Permeabing</li> <li>its</li> </ul>            | ility Stratified Depos-              | 1                | 3            | 3            | 3            | 1           |
| Surface Water Level Fluctuation                              | High Fluctuation  | on                                   | 3                | 3            | 0            | 3            | 3           |
| of the Wetland   | <ul> <li>Low Fluctuation</li> </ul>                         |                                      | 3 2 1            | 2            | Ö            | 3            | 2           |
|  | <ul> <li>Never Inundate</li> </ul>                          | ed                                   | 1                | 1            | 0            | 1            | 1           |
| Wetland Water Regime   | Drier: Seasons     porarily Floods                          | ally Flooded, Tem-                   | 3                | 3            | 0            | 3            | 3           |
|  | <ul> <li>Wet: Permane</li> </ul>                            | ntly Flooded, Inter-                 | 1                | 1            | 0            | 1            | 1           |
|  | mittently Expo  | sed, Semiper-<br>ded                 |                  | _            | _            | _            | _           |
| Soil Type  | Gravelly or Sar   | ndy Mineral Hydric                   | 3                | 3            | 0            | 3            | 3 2         |
|  | <ul> <li>Silty or Clayey</li> </ul>                         | ndy Mineral Hydric<br>Mineral Hydric | 2                | 2            | 0            |              | 2           |
|  | <ul> <li>Sapric Histosol</li> <li>Fibric or Hemi</li> </ul> | c Histosol                           | 1                | 0            | 3            | 0            | 0           |
|  |   | Total Score:                         |                  |              |              | 13           |             |
|  |   | Model Range:                         | 4-<br>21         | 4-18         | 2-12         | 4-18         | 4-21        |
|  | Functi  | ional Capacity Index:                | To-              |              |              |              | 0.12        |
|  |   | ,                                    | Sco<br>re<br>21  | 18           | 12           | 13 7         | 21          |
|  |   | Index Range:                         | 0.1<br>9-<br>1.0 | 0.22-<br>1.0 | 0.16-<br>1.0 | 0.22-<br>1.0 | 0.19        |

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.

| VARIABLES |   | WEIGHTS        |       |       |      |  |
|-----------|---|----------------|-------|-------|------|--|
|           | CONDITIONS HGM TYPES:                   | D              | S     | R     | E    |  |
| Soil Type | <ul><li>histosol</li></ul>              | 3              | 3     | 3     | 3    |  |
|           | <ul> <li>mineral hydric soil</li> </ul> | 1              | 1     | 0     | 1    |  |
|           |   | -              | -     | 9     | -    |  |
|           | Total Score:                            |                |       |       |      |  |
|           | Model Range:                            | 3-18           | 2-15  | 3-15  | 3-18 |  |
|           | Functional Capacity Index:              | Total<br>Score | 15=10 | Z=0   | 47   |  |
|           |   | 18             | 15    | 15    | 18   |  |
|           | Index Range:                            | 0.19-1.0       | 0.16- | 0.22- | 0.19 |  |
|           |   |                | 1.0   | 1.0   | 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  |    |                                     |                                    |   |   | WEIGH | ITS |   |
|--|----|-------------------------------------|------------------------------------|---|---|-------|-----|---|
|  | CO | NDITIONS                            | HGM TYPES:                         | D | L | EP    | R   | F |
| Indicators of Disfunction  Inlet/Outlet Class                          | •  | no inlet/perenn<br>tent inlet/peren | nial outlet; intermit-             | 0 |   |       |     | 0 |
| Nested Piezometer Data   | •  | discharge cond                      | lition                             | 0 | 0 | 0     | 0   | 0 |
| <ul> <li>Relationship to Regional Piezo-<br/>metric Surface</li> </ul> | •  | wetland substruction at piezometr   | ate elevation above<br>ric surface | 0 | 0 | 0     | 0   | 0 |
| <ul> <li>Presence of Seeps and Springs</li> </ul>                      |    | presence of se                      | eps or springs                     | 0 | 0 | 0     | 0   | 0 |

(continued)

|  |   |                                      |                  | ,            | WEIGH        | ITS          |             |
|--|---|--------------------------------------|------------------|--------------|--------------|--------------|-------------|
| VARIABLES  | CONDITIONS  | HGM TYPES:                           | D                | L            | EP           | R            | F           |
| Direct Indicators of Function Inlet/Outlet Class             | perennial inlets  | /no outlet                           | 21               |              |              |              | 21          |
| Nested Piezometer Data                                       | • recharge condi  | tion                                 | 21               |              |              |              | 21          |
| Relationship to Regional Peizometeric Surface                | wetland substra     piezometric su                          | ate elevation below                  | 21               |              |              |              | 21          |
| Primary Variables  |   |                                      |                  |              |              |              |             |
| <ul> <li>Microrelief of Wetland Surface</li> </ul>           | <ul> <li>Poorly Develop</li> </ul>                          | ped                                  | 3                | 3 2          | 1            | 3            | 3           |
|  | Absent     Well Develope                                    | .a                                   | 3 2              | 3            | 1 2          | 3            | 3           |
|  | <ul> <li>Well Develope</li> <li>Pronounced</li> </ul>       | d                                    | 1                | 1            | 3            | 1            | 3<br>2<br>1 |
| • Inlet/Outlet Class   | Perennial Inlet.     All Other Clas                         | /Intermittent Outlet                 | 3                | 0            | 0            | 0            | 3           |
|  |   |                                      |                  |              |              |              |             |
| • pH   | • Acid  |                                      | 3                | 3            | 3            | 3            | 3           |
|  | <ul> <li>Circumneutral</li> <li>Alkaline</li> </ul>         |                                      | 3<br>2<br>1      | 2            | 2            | 3            | 3<br>2<br>1 |
|  | No water prese  | ent                                  | Ô                | 0            | 0            | Ó            | Ô           |
| <ul> <li>Surficial Geologic Deposit Under Wetland</li> </ul> |   | lity Stratified Depos-               | 3 2              | 1 2          | 1 2          | 1            | 3 2         |
|  | <ul> <li>High Permeabing</li> <li>its</li> </ul>            | ility Stratified Depos-              | 1                | 3            | 3            | 3            | 1           |
| Surface Water Level Fluctuation                              | High Fluctuation  | on                                   | 3                | 3            | 0            | 3            | 3           |
| of the Wetland   | <ul> <li>Low Fluctuation</li> </ul>                         |                                      | 3 2 1            | 2            | Ö            | 3            | 2           |
|  | <ul> <li>Never Inundate</li> </ul>                          | ed                                   | 1                | 1            | 0            | 1            | 1           |
| Wetland Water Regime   | Drier: Seasons     porarily Floods                          | ally Flooded, Tem-                   | 3                | 3            | 0            | 3            | 3           |
|  | <ul> <li>Wet: Permane</li> </ul>                            | ntly Flooded, Inter-                 | 1                | 1            | 0            | 1            | 1           |
|  | mittently Expo  | sed, Semiper-<br>ded                 |                  | _            | _            | _            | _           |
| Soil Type  | Gravelly or Sar   | ndy Mineral Hydric                   | 3                | 3            | 0            | 3            | 3 2         |
|  | <ul> <li>Silty or Clayey</li> </ul>                         | ndy Mineral Hydric<br>Mineral Hydric | 2                | 2            | 0            |              | 2           |
|  | <ul> <li>Sapric Histosol</li> <li>Fibric or Hemi</li> </ul> | c Histosol                           | 1                | 0            | 0            | 0            | 0           |
|  |   | Total Score:                         |                  |              |              | 13           |             |
|  |   | Model Range:                         | 4-<br>21         | 4-18         | 2-12         | 4-18         | 4-21        |
|  | Functi  | ional Capacity Index:                | To-              |              |              |              | 0.12        |
|  |   | ,                                    | Sco<br>re<br>21  | 18           | 12           | 13 7         | 21          |
|  |   | Index Range:                         | 0.1<br>9-<br>1.0 | 0.22-<br>1.0 | 0.16-<br>1.0 | 0.22-<br>1.0 | 0.19        |

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.

|  |   |    |     | WE   | IGHTS |     |    |
|--|---|----|-----|--|-------|-----|----|
| VARIABLES  | CONDITIONS HGM TYPES:                                   | D  | S   | L  | EP    | R   | F  |
| Indicators of disfunction  | none  |    |     |  |       |     |    |
| Direct Indicators of Function  | no outlet   | 27 | 21  | California de la calenta de la |       |     | 30 |
| Primary Variables  |   |    |     |  |       |     |    |
| Inlet/Outlet Class   | <ul> <li>perennial inlet/intermittent outlet</li> </ul> | 3  | 3   | 0  | 0     | 0   | 3  |
|  | intermittent inlet/intermittent outlet                  | 2  | 2   | 0  | 0     | 0   | 2  |
|  | no inlet/intermittent outlet                            | 1  | D   | 0  | 0     | 0   | 1  |
|  | • non inlet/perennial outlet                            | 1  | 1   | 0  | 0     | 0   | 1  |
|  | • intermittent inlet/perennial outlet                   | 1  | 1   | 0  | 0     | 0   |    |
|  | perennial inlet/perennial outlet                        | 1  | 1   | 0  | 0     | 0   | 1  |
|  | perennal med perennal outlet                            | 1  | 1   | U  | 0     | 0   | 1  |
| Degree of Outlet   | • restricted  | 3  | 0   | 0  | 0     | 0   | 3  |
| Restriction  | • unrestricted  | 0  | 0   | 0  | 0     | 0   | 0  |
|  |   |    |     |  |       | G   |    |
| Basin Topographic  | low gradient  | 3  | 3   | 0  | 3     | 3   | 3  |
| Gradient   | high gradient   | 1  | Ō   | 0  | 0     | 0   | 1  |
| Wetland Water Regime   | Drier: seasonally flooded,                              | 3  | (3) | 3  | 0     | 3   | 3  |
|  | temporarily flooded, saturated                          |    |     |  |       | 0   |    |
|  | Wet: permanently flooded, intermit-                     | 1  | 1   | 1 .  | 0     | 1   | 1  |
|  | tently exposed, semipermanently flooded                 |    |     |  |       |     |    |
| Surface Water Level  | <ul> <li>high fluctuation</li> </ul>                    | 3  | 0   | 3  | 0     | 3   | 3  |
| Fluctuation of the   | low fluctuation   | 2  | 0   | 2  | 0     | (2) | 2  |
| Wetland  | never inundated   | 0  | 0   | 0  | 0     | 0   | 0  |
| Ratio of Wetland Area to   | • large   | 3  | 3   | 3  | 0     | 3   | 3  |
| Watershed Area   | • small   | 1  | 3   | 1  | 0     | 3   | 1  |
| Microrelief of Wetland   | • pronounced  | 3  | 3   | 3  | 3     | 3   | 3  |
| Surface  | well developed  | 2  | 2   | 2  | 2     | 2   | 2  |
|  | poorly developed  | 1  | 1   | 1  | 1     | 1   | 1  |
|  | • absent  | 0  | 0   | 0  | 0     | 0   | Ó  |
| Frequency of Overbank  | overbank flooding absent                                | 0  | 0   | 0  | 0     | 0   | 0  |
| Flooding   | • return interval of > 5 yrs                            | 0  | 0   | 1  | 0     | 1   | 1  |
| The state of the s | 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   | high/very high  | 3  | (3) | 3  | 3     | 3   | 3  |
| Density/Dominance  | • moderate  | 2  | 3 2 | 2  | 3 2   | 2   | 2  |
|  | • sparse/low  | 1  | 1   | 1  | 1     | - 1 | 1  |
|  | • no vegetation   | 0  | 0   | o  | 0     | 0   | 0  |

### 2.9.3 Storm and Flood-Water Storage (Continued)

|                     | *  | WEIGHTS              |                  |                  |                  |                  |                  |
|---------------------|--|----------------------|------------------|------------------|------------------|------------------|------------------|
| VARIABLES           | CONDITIONS HGM TYPES:                                  | D                    | S                | L                | EP               | R                | F                |
| Dead Woody Material | abundant     moderately abundant     sparse     absent | 3<br>2<br>1<br>0     | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 |
| *                   | Total Score:   | -                    | 10               | _                | -                | 16               | _                |
|                     | Model Range:   | 4-27                 | 4-21             | 2-21             | 0-12             | 3-24             | 4-30             |
|                     | Functional Capacity Index:                             | Total<br>Score<br>27 | 10 =0            | 21<br>21         | 12               | 16 =0            | 67<br>30         |
|                     | Index Range:   | 0.15-                | 0.19-<br>1.0     | 0.09-            | 0-1.0            | 0.12-<br>1.0     | 0.13             |

### 2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

|                       | VARIAB                     | LES         |                      | CO            | NDITIONS   | WEIGHTS  |
|-----------------------|----------------------------|-------------|----------------------|---------------|--|--|
| Indicators            | of Disfunction             | on          | no outlet            |               |  | 0  |
| Direct Ind            | icators of Fu              | nction      | none                 |               |  |  |
| Primary V             | ariables                   |             |                      |               | Name of the last o |  |
| Storm and<br>Function | Flood Water<br>Model Score | Storage     | Modific<br>Discharge | ation of Grou | indwater<br>odel Score   |  |
| High*<br>Mod<br>Low   | 3 2                        | x<br>x      | High<br>High         | 3 3 2 2 2 2   | =  | 9<br>6<br>3<br>6<br>4<br>2<br>3                |
| High<br>Mod           | 3                          | X<br>X<br>X | High<br>Mod<br>Mod   | 2             | =  | 6  |
| Low<br>High           | 1 3                        | x<br>x      | Mod<br>Low           | 2             | =  | 2  |
| Mod<br>Low            | 2                          | X<br>X      | Low                  | i             | =  | 1  |
|                       |                            |             |                      |               | Total Score:   | ener   |
|                       |                            |             |                      |               | Model Range:   | 1-9 6 - 0.67                                   |
|                       |                            |             |                      | Functiona     | Capacity Index:  | 1-9 6 = 0.67 Total Score 9 6/4 = 0.67 0.11-1.0 |
|                       |                            |             |                      |               | Index Range:   | 0.11-1.0                                       |

<sup>\*</sup>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

| Indicators of disfunction   Indicators of disfunction   Indicators of disfunction   Indicators of Function   Indicators |                               |  |           | WEIGHTS |      |      |      |      |
|--|-------------------------------|--|-----------|---------|------|------|------|------|
| Direct Indicators of Function   evidence of sedimentation   18   15   12   12   12   12   12   12   12   | VARIABLES                     | CONDITIONS HGM TYPES:  |           | S       | L    | EP   | R    | F    |
| New test   | indicators of disfunction     | none   |           |         |      |      |      |      |
| New Ideal Land Use   | Direct Indicators of Function | evidence of sedimentation  | 18        | 15      | 12   | 12   | 12   | 18   |
| New Index   Now Intensity   3   3   3   3   3   3   3   3   3  | Primary Variables             |  |           |         |      |      |      |      |
| <ul> <li>high intensity</li> <li>1</li> <li>0</li> <li>0</li></ul>  |                               | <ul><li>low intensity</li></ul>  |           | (3)     | 3    | 3    | 3    | 3    |
| ● Degree of Outlet Restriction         • restricted outflow         3         0         0         0         0           • no outlet unrestricted outflow         1         0         0         0         0         0           • Inlet/Outlet Type         • no outlet intermittent outlet eperennial outlet         3         3         0   |                               | <ul> <li>moderate intensity</li> </ul>   | 2         | 2       | 2    | 2    | 2    | 2    |
| Restriction  |                               |  | 1         | 1       | 1    | 1    | 1    | 1    |
| Restriction  | Degree of Outlet              | • restricted outflow   | 3         | 0       | 0    | 0    | 0    | 3    |
| Unrestricted outflow   1   |                               |  | 2         | 0       | 0    | 0    |      | 2    |
| intermittent outlet  |                               |  |           |         |      |      | 0    | 1    |
| Intermittent outlet  | Inlet/Outlet Type             | • no outlet  | 3         | 3       | 0    | 0    | 0    | 3    |
| Dominant Wetland Type  |                               | • intermittent outlet  | 2         | (2)     | 0    | 0    | 0    | 2    |
| • scrub-shrub • emergent wetland • aquatic bed • no vegetation • forming a continuous cover • growing in small scattered patches • one or more large patches • solitary scattered stems • no vegetation • histosol or clayey soil • sandy or gravelly soil  Total Score:  Model Range:  4-18 3-15 2-12 1-12 2-12  - Comparison of the patches  Total Score  Functional Capacity Index:  Total Score  |                               | The state of the s |           |         | 0    |      | 0    | 1    |
| • scrub-shrub • emergent wetland • aquatic bed • no vegetation • forming a continuous cover • growing in small scattered patches • one or more large patches • solitary scattered stems • no vegetation • histosol or clayey soil • sandy or gravelly soil  Total Score:  Model Range:  4-18  3-15  2-12  2 2  2 2  2 2  2 2  2 2  2 2  2  | Dominant Wetland Type         | forested wetland   | 3         | (3)     | 3    | 3    | 3    | 3    |
| emergent wetland   | -,,                           | scrub-shrub  | 2         |         | 2    | 2    | 2    | 2    |
| • aquatic bed • no vegetation • Cover Distribution • forming a continuous cover • growing in small scattered patches • one or more large patches • solitary scattered stems • solitary scattered stems • no vegetation • histosol or clayey soil • silty soil • silty soil • sandy or gravelly soil  • Soil Type  • hore solitary scattered stems • histosol or clayey soil • sandy or gravelly soil  • Soil Type • histosol or clayey soil • sandy or gravelly soil • Soil Type • histosol or clayey soil • sandy or gravelly soil • Soil Type • histosol or clayey soil • sandy or gravelly soil • Soil Type • histosol or clayey soil  |                               |  | 2         |         |      |      |      | 2    |
| • no vegetation  |                               |  |           |         |      |      | 0    | 0    |
| • growing in small scattered patches 2 2 2 2 2 2 2 2 0 0 1 1 1 1 1 1 1 1 1 1   |                               |  | - 0       | 0       |      |      | 0    | 0    |
| • growing in small scattered patches 2 2 2 2 2 2 2 2 0 0 1 1 1 1 1 1 1 1 1 1   |                               | - 5  | 2         | (2)     | 2    | 3    | (3)  | 3    |
| • one or more large patches • solitary scattered stems • no vegetation • histosol or clayey soil • silty soil • sandy or gravelly soil  Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score  | • Cover Distribution          |  |           |         |      |      |      | 2    |
| • solitary scattered stems • no vegetation • Soil Type • histosol or clayey soil • silty soil • sandy or gravelly soil  Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score  |                               |  | 1         | - T     | 1    |      |      | 1    |
| • no vegetation 0 0 0 0 0 0  • Soil Type • histosol or clayey soil 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3   |                               |  | 1         |         | 1    | 10   |      | 1    |
| • Soil Type  • histosol or clayey soil • silty soil • sandy or gravelly soil  Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score  10 00 00 00 00 00 00 00 00 00 00 00 00 0  |                               |  | _         |         | 7.05 | 100  |      | 0    |
| • silty soil • sandy or gravelly soil  Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score   |                               | • no vegetation  | 0         | 0       | U    | U    | 0    | U    |
| Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score  | Soil Type                     |  |           |         |      |      |      | 3    |
| Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score 12 0.50 10 =0  |                               |  |           | 2       |      |      | 2    | 2    |
| Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score 12 0.50 10 = 0   | ,                             | <ul> <li>sandy or gravelly soil</li> </ul>   | 1         | (1)     | 1    | 0    | 0    | 1    |
| Total Score:  Model Range: 4-18 3-15 2-12 1-12 2-12  Functional Capacity Index: Total Score  |                               |  | -         | 12      | -    | _    | 10   | -    |
| Functional Capacity Index: Total Score 12 = 0.80 10 = 0  |                               | Total Sci  | ore:      |         |      |      |      |      |
| Functional Capacity Index: Total Score 17 0.50 12 12 12 12   |                               | Model Rai  | ige: 4-18 | 3-15    | 2-12 | 1-12 | 2-12 | 4-1  |
| Score 18 15 12 12 12   |                               | Functional Capacity Inc  | lex: Tota | 1       | 20   |      | 10   | 0 83 |
| 10 13 12 12 12   |                               |  | Scor      | e 12=0  | 12   | 12   | 12   | 18   |
|  |                               |  |           |         |      |      |      |      |
| Index Range: 0.22- 0.20- 0.16- 0.8- 0.16-<br>1.0 1.0 1.0 1.0 1.0   |                               | Index Rai  |           |         |      |      |      | 0.2  |

### 2.9.6 Export of Detritus

|                                      |   |                |       | WEIG  | HTS   |       |        |
|--------------------------------------|---|----------------|-------|-------|-------|-------|--------|
| VARIABLES                            | CONDITIONS HGM TYPES:   |                | S     | L     | EP    | R     | F      |
| ndicators of disfunction             | no outlet   | 0              | 0     |       | 0     |       | 0      |
| Direct Indicators of Function        | none  |                |       |       |       |       |        |
| rimary Variables                     |   |                |       |       |       |       |        |
| <ul> <li>Wetland Land Use</li> </ul> | <ul> <li>moderate intensity</li> </ul>  | 3              | 3     | 3     | 3     | 3     | 3      |
|                                      | <ul> <li>low intensity</li> </ul>   | 2              | 2     | 2     | 2     | 2     | 2      |
|                                      | <ul> <li>high intensity</li> </ul>  | 1              | 1     | 1     | 1     | 1     | 1      |
| Degree of Outlet                     | unrestricted outflow  | 3              | 0     | 0     | 0     | 0     | 3      |
| Restriction                          | • restricted outflow  | 1              | 0     | 0     | 0     | 0     | 1      |
| Inlet/Outlet Class                   | • perennial outlet  | 3              | 3     | 0     | 0     | 0     | 3      |
| • Intel Outlet Class                 | • intermittent outlet   | 1              | 1     | 0     | 0     | 0     | 1      |
| Wetland Water Regime                 | drier: seasonally flooded,<br>temporarily flooded, saturated                    | 3              | 3     | 3     | 0     | 3     | 3      |
|                                      | wet: permanently flooded,<br>intermittently exposed,<br>semipermanently flooded | 1              | 1     | 1     | 1     | *     | 1      |
| Vegetation Den-                      | high/very high  | 3              | 3     | 3     | 3     | 3     | 3      |
| sity/Dominance                       | • medium  | 2              | 2     | 2     | 2     | 2     | 2      |
| SK). Dominance                       | • 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      |
| 3011 1/ре                            | • histosol  | 1              | 1     | 1     | 1     | 1     | 1      |
|                                      |   | 1200           | 17    | -     | -     | 11    | -      |
|                                      | Total Score:  |                | -     |       |       | 11    |        |
|                                      | - Model Range:  | 5-18           | 4-15  | 3-12  | 2-10  | 3-12  | 5-1    |
|                                      |   | Territ         |       | 0.00  |       |       | 6.1    |
|                                      | Functional Capacity Index:  | Total<br>Score | 12 20 | ,00   |       | 11 =0 | 2 1010 |
|                                      |   | 18             | 15    | 12    | 10    | 12    | 18     |
|                                      | Index Range:  | 0.27-          | 0.26- | 0.25- | 0.20- | 0.25- | 0.2    |
|                                      | midex Range.  | 1.0            | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    |

### 2.9.6 Export of Detritus

|                                      |   |                |       | WEIG  | HTS   |       |        |
|--------------------------------------|---|----------------|-------|-------|-------|-------|--------|
| VARIABLES                            | CONDITIONS HGM TYPES:   |                | S     | L     | EP    | R     | F      |
| ndicators of disfunction             | no outlet   | 0              | 0     |       | 0     |       | 0      |
| Direct Indicators of Function        | none  |                |       |       |       |       |        |
| rimary Variables                     |   |                |       |       |       |       |        |
| <ul> <li>Wetland Land Use</li> </ul> | <ul> <li>moderate intensity</li> </ul>  | 3              | 3     | 3     | 3     | 3     | 3      |
|                                      | <ul> <li>low intensity</li> </ul>   | 2              | 2     | 2     | 2     | 2     | 2      |
|                                      | <ul> <li>high intensity</li> </ul>  | 1              | 1     | 1     | 1     | 1     | 1      |
| Degree of Outlet                     | unrestricted outflow  | 3              | 0     | 0     | 0     | 0     | 3      |
| Restriction                          | • restricted outflow  | 1              | 0     | 0     | 0     | 0     | 1      |
| Inlet/Outlet Class                   | • perennial outlet  | 3              | 3     | 0     | 0     | 0     | 3      |
| • Intel Outlet Class                 | • intermittent outlet   | 1              | 1     | 0     | 0     | 0     | 1      |
| Wetland Water Regime                 | drier: seasonally flooded,<br>temporarily flooded, saturated                    | 3              | 3     | 3     | 0     | 3     | 3      |
|                                      | wet: permanently flooded,<br>intermittently exposed,<br>semipermanently flooded | 1              | 1     | 1     | 1     | *     | 1      |
| Vegetation Den-                      | high/very high  | 3              | 3     | 3     | 3     | 3     | 3      |
| sity/Dominance                       | • medium  | 2              | 2     | 2     | 2     | 2     | 2      |
| SK). Dominance                       | • 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      |
| 3011 1/ре                            | • histosol  | 1              | 1     | 1     | 1     | 1     | 1      |
|                                      |   | 1200           | 17    | -     | -     | 11    | -      |
|                                      | Total Score:  |                | -     |       |       | 11    |        |
|                                      | - Model Range:  | 5-18           | 4-15  | 3-12  | 2-10  | 3-12  | 5-1    |
|                                      |   | Territ         |       | 0.00  |       |       | 6.1    |
|                                      | Functional Capacity Index:  | Total<br>Score | 12 20 | ,00   |       | 11 =0 | 2 1010 |
|                                      |   | 18             | 15    | 12    | 10    | 12    | 18     |
|                                      | Index Range:  | 0.27-          | 0.26- | 0.25- | 0.20- | 0.25- | 0.2    |
|                                      | midex Range.  | 1.0            | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    |

# 2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation (This model is identical for all HGM types)

| VARIABLES              |                                     | CONDITIONS   |                               | WEIGHTS                | 5                  |
|------------------------|-------------------------------------|--|-------------------------------|------------------------|--------------------|
| Indicators of Disfunc  | tion                                | no vegetation  |                               | 0                      |                    |
| Direct Indicators of F | unction                             | none   |                               |                        |                    |
| Primary Variables  •   | Plant<br>Species<br>Diversity       | <ul> <li>high diversity</li> <li>medium diversity</li> <li>low diversity</li> </ul>  |                               | 5 3                    |                    |
| •                      | Vegetation<br>Density/Do<br>minance | <ul> <li>high/very high</li> <li>medium</li> <li>sparse/low</li> </ul>   |                               | 5 3                    |                    |
| •                      | Wetland<br>Juxtapositio<br>n        | <ul> <li>connected upstream and downstream</li> <li>connected above or below</li> <li>other wetlands nearby but not</li> </ul> |                               | 3                      |                    |
|                        |                                     | connected (400 m or closer)  isolated  | ,                             | 0                      |                    |
|                        |                                     |  | Total Score:                  | at                     |                    |
|                        |                                     |  | Model Range:                  | 2-15                   | 0.1                |
|                        |                                     |  | Functional Capacity<br>Index: | = Total<br>Score<br>15 | 15 = 0.1<br>%= 0.1 |
|                        |                                     |  | 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                   | <ul> <li>low intensity (0-25% urbanized)</li> </ul>        | 3 2     |
|                                      | <ul> <li>moderate intensity (25-50% urbanized)</li> </ul>  | 2       |
|                                      | <ul><li>high intensity (&gt;50% urbanized)</li></ul>       | . 1     |
| Wetland Land Use                     | • low intensity  | 3       |
| Wettand Land Osc                     | moderate intensity   | 2       |
|                                      | • high intensity   | 1       |
| Wetland Water Regime                 | • wet: permanently flooded, intermittently                 | (3)     |
| Trouble Training Trogition           | exposed, semipermanently flooded                           |         |
|                                      | drier: seasonally flooded, temporarily                     |         |
|                                      | flooded, saturated   |         |
| Microrelief of Wetland Surface       | • pronounced   | 3       |
| Whiteforeher or wedand outland       | • well developed   | 2       |
|                                      | poorly developed   | 1       |
|                                      | • absent   | 1       |
| Number of Wetland types and Relative | • 5 or more types  | 3 2     |
| Proportions                          | • 3-4 types  | 2       |
|                                      | • 1-2 types  | 0       |
|                                      | • no vegetation  | 0       |
|                                      | • even distribution  | 3       |
|                                      | <ul> <li>moderately even distribution</li> </ul>           | 2       |
|                                      | <ul> <li>highly uneven distribution</li> </ul>             | 1 0     |
|                                      | • no vegetation  | 0       |
| Vegetation Interspersion             | • high interspersion                                       | 2       |
|                                      | <ul> <li>moderate interspersion</li> </ul>                 | 2       |
|                                      | low interspersion  |         |
|                                      | • 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       |
|                                      | <ul> <li>layers with moderate cover (26-50%</li> </ul>     | 2       |
|                                      | cover)   | 1       |
|                                      | <ul> <li>layers poorly distinguishable (&lt;25%</li> </ul> | 0       |
|                                      | cover)   |         |
|                                      | • no vegetation  | 0       |

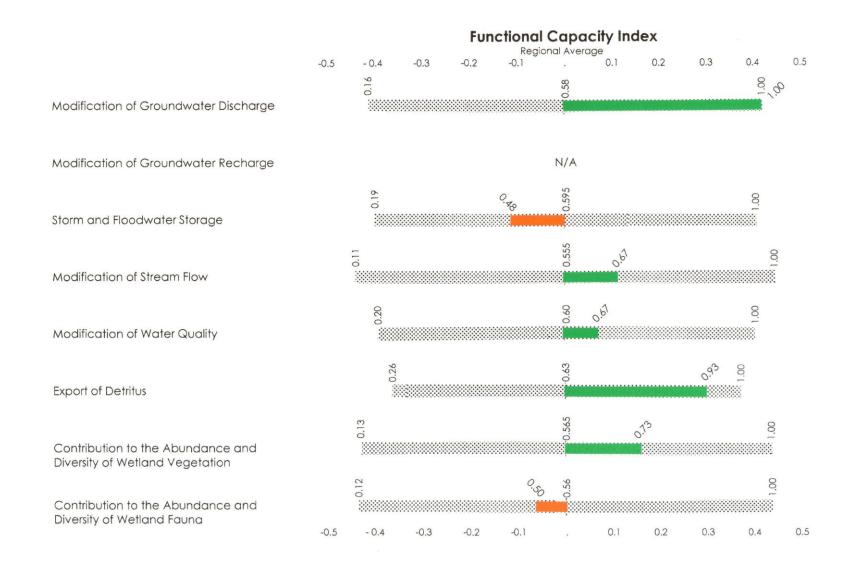
### 2.9.8 Contribution to Abundance and Diversity of Wetland Fauna (Continued)

| VARIABLES                              | CONDITIONS  |                     | WEIGHTS                      |
|--|---|---------------------|------------------------------|
| Interspersion of Vegetation Cover and  | • 26-75% scattered or peripheral                            |                     | 3                            |
| Open Water                             | • >75% scattered or peripheral                              |                     | 2                            |
|  | <25% scattered or peripheral                                |                     | 1                            |
|  | • 100% cover or open water                                  |                     | i                            |
|  | • no vegetation   |                     | 0                            |
| Size                                   | • large (>100 acres)  |                     | 3                            |
|  | medium (10-100 acres)                                       |                     | (2)                          |
|  | • small (<10 acres)   |                     | 3 2                          |
| Wetland Juxtaposition                  | other wetlands within 400 m and<br>connected above or below |                     | 0                            |
|  | <ul> <li>other wetlands within 400 m but not</li> </ul>     |                     | 1                            |
|  | connected   |                     |                              |
|  | • wetland isolated  |                     | 0                            |
|  |   |                     | 78 78                        |
| Slope Wetlands:                        | All Other HGM Types:  | Total Score:        | CO C8                        |
| Model Range: 4-33                      |   | Model Range:        | 4-36                         |
| unctional Capacity Index = Total Score |   | Functional Capacity | Total Score                  |
| 33                                     |   | Index =             | 36                           |
| Index Range: 0.12-1.0                  |   |                     | 4-36 Total Score 36 0.11-1.0 |
| muck Range. 0.12-1.0                   |   | Index Range         | 0.11-1.0                     |

### **Sloping Wetland**

Study Area: CRS-2

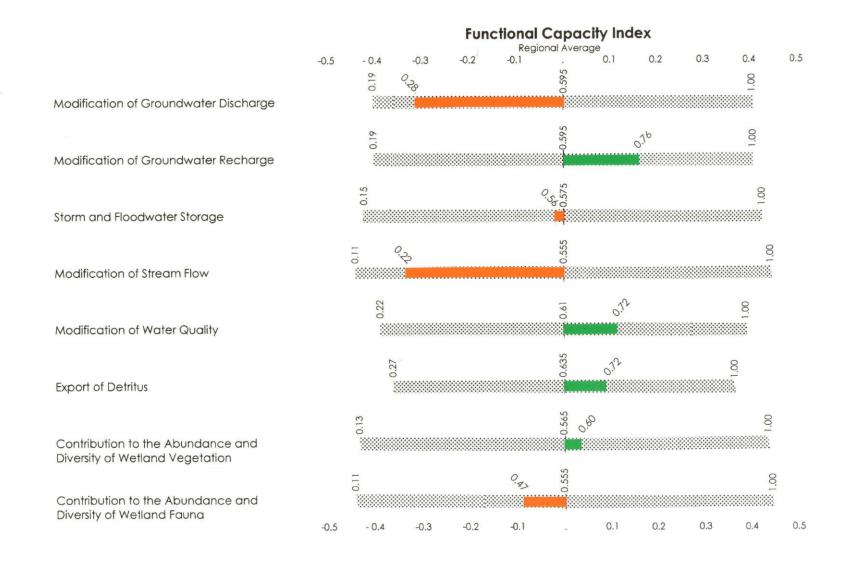
0.27 ac. - 74% of total 0.36 ac. wetlands



### **Depression Wetland**

Study Area: CRS-2

0.09 ac. - 26% of total 0.36 ac. wetlands



| Project Number: YOUKTOWN                        | Date: | Total | 0.36 ac |
|---|-------|-------|---------|
| Wetland Number: CRS-Z SLOPE DEPRESSION          |       |       |         |
| Aerial Photo Numbers:                           |       |       |         |
| USGS Quadrangle: OSSINING: Field Investigators: |       |       |         |

| SURFAC  | E WATER FLOW VE | CTORS   | PLAN  | T SPECIES   |
|---|-----------------|---|---|---|
| Condition   | Percent/Acrea   | ge  |   | OW<br>FFW<br>COM<br>CCOM<br>CCOM<br>CCOM<br>CCOM<br>CCOM<br>CCOM<br>CCOM  |
| $\rightarrow \downarrow \leftarrow$   | 76%             | Depressional                                    | HIGH BUSH BLOOBERRY<br>SWEET BIRGH  |   |
| ###   | 74%             | Slope<br>Flat                                   | BLACK CHERRY<br>BUSH<br>CINHAMON FERN   | . 000000000000000000000000000000000000  |
| $\stackrel{\longleftarrow}{\longleftrightarrow}$                                      |                 | Extensive Peatland                              | Misc Feels<br>Gelsses Scoars  |   |
|   | ************    | Lacustrine<br>Fringe                            |   |   |
| <u> </u>  | -               | Riverine  |   |   |
| *   | VEGETATION TYPE | S   |   |   |
| Туре  | Percent/Acreage |   |   |   |
| Forested Wetland Evergreen Needle-leaved Deciduous Broad-leaved Needle-leaved         |                 | Histosol  • Fibric  • Hemic  • Sapric           |   |   |
| Scrub Shrub Evergreen Broad-leaved Needle-leaved Deciduous Broad-leaved Needle-leaved |                 | Mineral Hydric Soil Gravelly Sandy Silty Clayey | OW Obligate Wetland   | COM Common  |
| Emergent Wetland Persistent Non-persistent Aquatic Bed                                | 100%            | GEOLOGY Surficial:                              | FW Facultative Wetland F Facultative FU Facultative Upland OU Obligate Upland DOM Dominant                      | OCC Occasional C Canopy S Sapling TS Tall Shrub LS Low Shrub H Herb   |
| Total   | 100%            | Bedrock:  | PRE-EMP   | TIVE STATUS   |
| Comments: MALL LI DPLAND WATER TABLE DEPRESSION                                       | SOIL - POSSIB   | OF EXAVATION AT INTERCEPTION AUGED              | Public ownership Wildlife management area Fisheries management area Designated State or Federal protected wetl: | Documented habitat fo state or federal listed species Regionally scarce wetland category Historic/archaeologic area |

## WETLAND INVENTORY DATA (continued)

## PART 2 - CHARACTERIZATION of MODEL VARIABLES

| LANDSCAPE VARIABLES  | Microrellef of Wetland Surface:  | Number of Types & Relative Proportions:  |
|--|--|--|
| Size:  | Pronounced >45 cm Well Developed 15-45 cm Poorly Developed <15 cm Absent   | Number of Types Everness of Distribution  Actual # Even Distribution  S Moderately Even Distribution  Highly Uneven Distribution   |
| Wetland Juxtaposition:  Comected Upstream and Downstream Only Connected Above Only Connected Below Other Wetlands Nearby but not Comnected Wetland Isolated Fire Occurence and Frequency: Natural; Predictable Frequency Natural; Sporadic Frequency Human-caused; Predictable Human-caused; Sporadic Rare Event No Evidence  Regional Scarcity: Not Scarce (<5% of total wetland area of region) Scarce (<5% of total wetland area of region) | Inlet/Outlet Class:  No Inlet/No Outlet No Inlet/No Outlet No Inlet/Peremial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/No Outlet Intermittent Inlet/No Outlet Intermittent Outlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Recharge Discharge Horizontal Flow Not Available Relationship of Wetlands' Substrate Elevation to Regional Plezometric Surface: | Vegetation Density/Dominance:    Sparse (0-20%)  |
| Watershed Land Use:  > 50% urbanized    25-50% urbanized    0-25% urbanized  HYDROLOGIC VARIABLES  | Piez. Surface Above or at Substrate elev. Piez. Surface below Substrate elev. Not Available  Evidence of Sedimentation:  No Evidence Observed  | 5   2. floating:   4   3. moss-lichen:   3   4. short herb:   2   5. tall herb:   1   6. dwarf shrub:   7. short shrub:   8. tall shrub:   8. tall shrub:  |
| Surface Water Level Fluctuation of Wetland:  | Sediment Observed on Wetland Substrate Fluvaquent Soits  | 9. sapling:<br>10. tree:   |
| High Fluctuation Low Fluctuation Never Inundated  Frequency of Overbank Flooding: Return Interval > 5 yrs.   | Evidence of Seeps and Springs:  No Seeps or Springs Seeps Observed Perennial Spring Intermittent Spring  | Plant Species Diversity:  Low 1-2 plots sampled Medium 3-4 plots sampled High 5 or more plots sampled  |
| Return Interval 2-5 yrs.  Return Interval 1-2 yrs.  No Overbank Flooding   | SOIL VARIABLES Soil Lacking:   | Proportion of Animal Food Plants:  |
| pH:  Acid <5.5  Circumneutral 5.5-7.4  Alkaline >7.4  No Water   | Histosol:  Fibric  Hemic  Sapric   | Medium (25-50% cover)   High (>50% cover)     Cover Distribution:   Continuous Cover   Small Scattered Patches   |
| Surficial Geologic Deposit Under Wetland  Low Permeability Stratified Deposits  High Permeability Stratified Deposits  Glacial Till  Wetland Land Use:   | Mineral Hydric Soil:  Gravelly Sandy Silty Clayey  | 1 or More Large Patches; Parts of Site Open     Solitary, Scattered Stems  Dead Woody Material:      Abrundant (>50 of wetland surface)     Moderately Abrundant (25-50% of surface)   |
| High Intensity (ie. agriculture)  Moderate Intensity (ie. forestry)  | VEGETATION VARIABLES   | Low Abrundance (0-25% of surface)  |
| 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 No Outflow Ratio of Wetland Area to Watershed Area:  High >10%  Low <10%                                   | 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 - Needle-leaved Scrub Shrub - Deciduous - Needle-leaved Emergent - Persistent Emergent - Non-persistent Aquatic Bed  | 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 |

CRS-Z GLOPE/DEPRESSION (0.36 m)

### 2.9.1 Modification of Ground Water Discharge

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

(continued)

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

|           |   |          | WEI   | GHTS       |      |
|-----------|---|----------|-------|------------|------|
| VARIABLES | CONDITIONS HGM TYPES:                   | D        | S     | R          |      |
| Soil Type | histosol                                | 3        | 3     | 3          | 3    |
| -77       | <ul> <li>mineral hydric soil</li> </ul> | (1)      | (I)   | 1          | 1    |
|           |   | 5        | 4     | _          | -    |
|           | Total Score:                            |          |       |            |      |
|           | Model Range:                            | 3-18     | 2-15  | 3-15       | 3-18 |
|           | Functional Capacity Index:              | Total    | 0.25  | 11         |      |
|           |   | Score 5  |       | - Contract | 18   |
|           | :                                       | 18       | 15    | 15         | 10   |
|           | Index Range:                            | 0.19-1.0 | 0.16- | 0.22-      | 0.19 |
|           |   |          | 1.0   | 1.0        | 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

|   |                                    |                        |   |   | WEIGH | TS |   |
|---|------------------------------------|------------------------|---|---|-------|----|---|
| VARIABLES   | CONDITIONS HGM TYPES:              |                        |   | L | EP    | R  | F |
| Indicators of Disfunction  Inlet/Outlet Class     | no inlet/perent tent inlet/perent  | nial outlet; intermit- | 0 |   |       |    | 0 |
| Nested Piezometer Data                            | discharge conc                     | lition                 | 0 | 0 | 0     | 0  | 0 |
| Relationship to Regional Piezo-<br>metric Surface | wetland substr     or at piezomet  | ate elevation above    | 0 | 0 | 0     | 0  | 0 |
| Presence of Seeps and Springs                     | <ul> <li>presence of se</li> </ul> | eps or springs         | 0 | 0 | 0     | 0  | 0 |

(continued)

|  |  |                          |                 |             | WEIGH | TS      |     |
|--|--|--------------------------|-----------------|-------------|-------|---------|-----|
| VARIABLES  | CONDITIONS   | HGM TYPES:               | D               | L           | EP    | R       | F   |
| Direct Indicators of Function Inlet/Outlet Class             | • perennial inlet.   | /no outlet               | 21              |             |       |         | 21  |
| Nested Piezometer Data                                       | • recharge condi   | tion                     | 21              |             |       |         | 21  |
| Relationship to Regional<br>Peizometeric Surface             | wetland substra<br>piezometric su                          | ate elevation below      | 21              |             |       |         | 21  |
| Primary Variables  |  |                          |                 |             |       |         |     |
| Microrelief of Wetland Surface                               | Poorly Develo  | ped                      | 3               | 3 2         | 1     | 3 2     | 3 2 |
|  | Well Develope  | ed                       | 2               | 2           | 2     | 2       | 2   |
|  | <ul> <li>Pronounced</li> </ul>                             |                          | 1               | 1           | 3     | ī       | ī   |
| Inlet/Outlet Class   | <ul><li>Perennial Inlet</li><li>All Other Class</li></ul>  | /Intermittent Outlet ses | 3               | 0           | 0     | 0       | 3   |
| • pH   | Acid   |                          | 3               | 3           | 3     | 3       | 3   |
|  | <ul> <li>Circumneutral</li> </ul>                          |                          | 3               | 2           | 2     | 2       | 2   |
|  | • Alkaline   |                          | 1               | 1           | 1     | 1       | 1   |
|  | No water prese   | ent                      | 0               | 0           | 0     | 0       | 0   |
| <ul> <li>Surficial Geologic Deposit Under Wetland</li> </ul> | Glacial Till     Low Permeahi                              | lity Stratified Depos-   | 3 2             | 1 2         | 1 2   | 1 2     | 3 2 |
| der wettand  | its Low Perineadi  | nty Stratified Depos-    | 4               | . 2         | 2     | 2       | 4   |
|  | High Permeabi its  | ility Stratified Depos-  | 1               | 3           | . 3   | 3       | 1   |
| Surface Water Level Fluctuation                              | High Fluctuation   | on                       | 3               | 3           | 0     | 3       | 3   |
| of the Wetland   | <ul> <li>Low Fluctuation</li> </ul>                        | on                       | 2               | 2           | 0     | 2       | 2   |
| *  | Never Inundate   | ed                       | 1               | 1           | 0     | 1       | 1   |
| Wetland Water Regime   | Drier: Season     porarily Floods                          | ally Flooded, Tem-       | 3               | 3           | 0     | 3       | 3   |
|  | • Wet: Permane   | ently Flooded, Inter-    | 1               | 1           | 0     | 1       | 1   |
|  | mittently Expo   | sed, Semiper-            | -               | -           | -     | -       | -   |
| Soil Type  | Gravelly or Sa   | ndy Mineral Hydric       | 3               | 3           | 0     | 3       | 3   |
|  | <ul> <li>Silty or Clayey</li> </ul>                        | Mineral Hydric           | 3 2 1           | 2           | 0     | 2       | 2   |
|  | <ul> <li>Sapric Histoso</li> <li>Fibric or Hemi</li> </ul> | ic Histosol              | 0               | 0           | 0     | 0       | 0   |
|  |  | Total Score:             | 16              |             |       |         |     |
|  |  | Model Range:             | 4-<br>21        | 4-18        | 2-12  | 4-18    | 4-2 |
|  |  | in al Constitution       |                 |             |       |         |     |
|  | Funct  | ional Capacity Index:    | To-             |             |       |         |     |
|  |  |                          | Sco             | 18          | 12    | 18      | 21  |
|  |  |                          | Sco<br>re<br>21 | =0          |       |         |     |
|  |  | Index Range:             | 0.1             | 0.22-       | 0.16- | 0.22-   | 0.1 |
|  |  | muca Nange.              | 9-              | 1.0         | 1.0   | 1.0     | 1.0 |
|  |  |                          | 1.0             | 0.012-0.000 | 1.0   | and the |     |

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.

|  |  |     |     | WEI | GHTS |   |    |
|--|--|-----|-----|-----|------|---|----|
| VARIABLES                                    | CONDITIONS HGM TYPES:  | D   | S   | L   | EP   | R | F  |
| indicators of disfunction                    | none   |     |     |     |      |   |    |
| Direct Indicators of Function                | no outlet  | 27  | 21  |     |      |   | 30 |
| Primary Variables                            |  |     |     |     |      |   |    |
| Inlet/Outlet Class                           | <ul> <li>perennial inlet/intermittent outlet</li> </ul>  | 3   | 3   | 0   | 0    | 0 | 3  |
| • Infeb Outlet Class                         | 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  |
|  | perenana nines perenana sanor  | 0   | 0   |     |      |   |    |
| - 10.1                                       | • restricted   | 3   | 0   | 0   | 0    | 0 | 3  |
| Degree of Outlet                             | • unrestricted   | 0   | 0   | 0   | 0    | 0 | 0  |
| Restriction                                  | • unestricted  |     |     |     |      |   |    |
|  | a tour and tour  | 3   | 3   | 0   | 3    | 3 | 3  |
| Basin Topographic                            | low gradient   | 1   | 0   | 0   | 0    | 1 | 1  |
| Gradient                                     | <ul> <li>high gradient</li> </ul>  | T.  | 0.  |     |      |   |    |
|  | The state of the s | (3) | (3) | 3   | 0    | 3 | 3  |
| <ul> <li>Wetland Water Regime</li> </ul>     | <ul> <li>Drier: seasonally flooded,</li> </ul>   | 3   | 3   | 3   | · ·  |   |    |
|  | temporarily flooded, saturated   |     |     | 1.  | 0    | 1 | 1  |
|  | • Wet: permanently flooded, intermit-  | 1   | 1   | 13  | U    |   | •  |
|  | tently exposed, semipermanently  | -   |     |     |      |   |    |
|  | flooded  |     |     |     |      |   |    |
|  |  |     |     | 200 |      |   | 2  |
| Surface Water Level                          | • high fluctuation   | 3   | 0   | 3   | 0    | 3 | 3  |
|  | low fluctuation  | 3   | 0   | 2   | 0    | 2 | 2  |
| Fluctuation of the                           | • never inundated  | 0   | 0   | 0   | 0    | 0 | 0  |
| Wetland                                      | • Hevel indidated  |     |     |     |      |   |    |
|  | · Posterior  | 3   | 3   | 3   | 0    | 3 | 3  |
| <ul> <li>Ratio of Wetland Area to</li> </ul> | • large  | 1   | 1   | 1   | 0    | 1 | 1  |
| Watershed Area                               | • small  |     | 0   | 5   |      |   |    |
|  |  | 3   | 3   | 3   | 3    | 3 | 3  |
| <ul> <li>Microrelief of Wetland</li> </ul>   | <ul><li>pronounced</li></ul>   |     |     | 2   | 2    | 2 | 2  |
| Surface                                      | <ul> <li>well developed</li> </ul>   | 2   | 2   | 1   | 1    | 1 | 1  |
|  | <ul> <li>poorly developed</li> </ul>   | 1   |     | 0   | 0    | 0 | 0  |
|  | • absent   | 0   | 0   | 0   | 0    | U | 0  |
| <ul> <li>Frequency of Overbank</li> </ul>    | <ul> <li>overbank flooding absent</li> </ul>   | 0   | 0   | 0   | 0    | 0 | 0  |
| Flooding                                     | • return interval of >5 yrs  | 0   | 0   | 1   | 0    | 1 | 1  |
| Piooding                                     | • return interval of 2-5 yrs   | 0   | 0   | 2   | 0    | 2 | 2  |
|  | • return interval of 1-2 yrs   | 0   | 0   | 3   | 0    | 3 | 3  |
|  | - Ician moral of the jiv   |     |     |     |      |   |    |
|  | high/very high   | 3   | 3   | 3   | 3    | 3 | 3  |
| <ul> <li>Vegetation</li> </ul>               |  | 2   | 2   | 2   | 2    | 2 | 2  |
| Density/Dominance                            | • moderate   | 1   | 1   | 1   | 1    | 1 | 1  |
|  | • sparse/low   | 0   | 0   | 0   | 0    | 0 | 0  |
|  | <ul> <li>no vegetation</li> </ul>  | 0   | 0   |     |      |   |    |

### 2.9.3 Storm and Flood-Water Storage (Continued)

|                     |                                       |                       |       |                  | WEI   | GHTS      |       |      |
|---------------------|---------------------------------------|-----------------------|-------|------------------|-------|-----------|-------|------|
| VARIABLES           | CONDITIONS HGM TYPES:                 |                       |       | S                | L     | EP        | R     | F    |
| Dead Woody Material | abundant                              |                       | 3     | 3                | 3     | 3         | 3     | 3    |
|                     | <ul> <li>moderately abunda</li> </ul> | ant                   | 2     | 2                | 2     | 2         | 2     | 3 2  |
|                     | • sparse                              |                       | 1     | 1                | 1     | 1         | 1     | 1    |
|                     | • absent                              |                       | 0     | 0                | 0     | 0         | 0     | 0    |
|                     |                                       | Total Score:          | 15    | 9                | -     | -         | _     | -    |
|                     |                                       | Model Range:          | 4-27  | 4-21             | 2-21  | 0-12      | 3-24  | 4-30 |
|                     | Funct                                 | ional Capacity Index: | Total | 5 = 0.5<br>9 = 0 | 43    |           |       |      |
|                     |                                       |                       | Score | 9=0              | //    | - Control | 10000 | -    |
|                     |                                       |                       | 27    | 21               | 21    | 12        | 24    | 30   |
|                     |                                       | Index Range:          | 0.15- | 0.19-            | 0.09- | 0-1.0     | 0.12- | 0.13 |

### 2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

|                       | VARIAB                   | LES            |                      | CO           | NDITIONS                | WEIGHTS          |
|-----------------------|--------------------------|----------------|----------------------|--------------|-------------------------|------------------|
| Indicators            | of Disfuncti             | on             | no outlet            |              |                         | 0                |
| Direct Ind            | icators of Fu            | inction        | none                 |              |                         |                  |
| Primary V             | 'ariables                |                |                      |              |                         |                  |
| Storm and<br>Function | Flood Wate<br>Model Scor | r Storage<br>e | Modific<br>Discharge | ation of Gro | undwater<br>lodel Score |                  |
| High*                 | 3                        | x              | High                 | 3            | =                       | 9                |
| Mod                   | 2                        | X              | High                 | 3            | =                       | 9<br>6<br>3      |
| Low                   | 1                        | X              | High                 | 3            | =                       | 3                |
| High                  | 3                        | X              | Mod                  | 2            | =                       | 6                |
| Mod                   | 2                        | X              | Mod                  | 2            | =                       | 4                |
| _ow                   | 1                        | X              | Mod                  | 2            | ==                      | 2                |
| ligh                  | 3                        | X              | Low                  | 1            | =                       | 4<br>2<br>3<br>2 |
| Mod                   | 2                        | X              | Low                  | 1            |                         | (2)              |
| Low                   | 1                        | X              | Low                  | 1            | =                       | 1                |
|                       |                          |                |                      |              | Total Score:            |                  |
|                       |                          |                |                      |              | Model Range:            | 1-9 7 00         |
|                       |                          |                |                      | Functiona    | l Capacity Index:       | Total Score      |
|                       |                          |                |                      |              | Index Range:            | 0.11-1.0         |

<sup>\*</sup>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.

|                               |  |            |                           | WEI    | GHTS |       |     |
|-------------------------------|--|------------|---------------------------|--------|------|-------|-----|
| VARIABLES                     | CONDITIONS HGM TYPES                                   | : <b>D</b> | S                         | L      | EP   | R     | F   |
| ndicators of disfunction      | none   |            |                           |        |      |       |     |
| Direct Indicators of Function | evidence of sedimentation                              | 18         | 15                        | 12     | 12   | 12    | 18  |
| Primary Variables             |  |            |                           |        |      |       |     |
| Wetland Land Use              | <ul> <li>low intensity</li> </ul>                      | 3          | 3                         | 3      | 3    | 3     | 3   |
|                               | <ul> <li>moderate intensity</li> </ul>                 | 2          | (2)                       | 2      | 2    | 2     | 2   |
|                               | <ul> <li>high intensity</li> </ul>                     | 1          | 1                         | 1      | 1    | 1     | 1   |
| Degree of Outlet              | • restricted outflow                                   | 3          | 0                         | 0      | 0    | 0     | 3   |
| Restriction                   | <ul><li>no outlet</li></ul>                            | 2          | 0                         | 0      | 0    | 0     | 2   |
|                               | <ul> <li>unrestricted outflow</li> </ul>               | 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   |
|                               | <ul> <li>scrub-shrub</li> </ul>                        | 2          | 2                         | 2      | 2    | 2     | 2   |
|                               | <ul> <li>emergent wetland</li> </ul>                   | 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   |
|                               | <ul> <li>growing in small scattered patches</li> </ul> | 2          | 2                         | 2      | 2    | 2     | 2   |
|                               | <ul> <li>one or more large patches</li> </ul>          | 1          | 1                         | 1      | 1    | 1     | 1   |
|                               | <ul> <li>solitary scattered stems</li> </ul>           | 1          | 1                         | 1      | 1    | 1     | 1   |
|                               | <ul> <li>no vegetation</li> </ul>                      | 0          | 0                         | 0      | 0    | 0     | 0   |
| Soil Type                     | • histosol or clayey soil                              | 3          | 3                         | 3      | 3    | 3     | 3   |
|                               | <ul> <li>silty soil</li> </ul>                         | 2          | 2                         | 2      | 0    | 2     | 2   |
|                               | <ul> <li>sandy or gravelly soil</li> </ul>             | 1          | (1)                       | 1      | 0    | 1     | 1   |
|                               |  | 13         | Ti                        | -      | _    | -     | _   |
|                               | Total Score  |            |                           |        |      |       |     |
|                               | Model Rang   | e: 4-18    | 3-15<br>3 = 0.7<br>11 = ( | 1 2-12 | 1-12 | 2-12  | 4-1 |
|                               | Functional Capacity Inde.                              | Total      | 13-01                     | 42     |      |       |     |
|                               | Functional Capacity Inde.                              | Score      | 11= (                     | ),1    |      |       |     |
|                               |  | 18         | 15                        | 12     | 12   | 12    | 18  |
|                               |  | 10         | 13                        | 12     | 14   | 1.2   | 10  |
|                               | Index Rang   | e: 0.22-   | 0.20-                     | 0.16-  | 0.8- | 0.16- | 0.2 |
|                               |  | 1.0        | 1.0                       | 1.0    | 1.0  | 1.0   | 1.0 |

### 2.9.6 Export of Detritus

|                               |   | WEIGHTS |                   |       |       |       |   |
|-------------------------------|---|---------|-------------------|-------|-------|-------|---|
| VARIABLES                     | CONDITIONS HGM TYPES:   |         | S                 | L     | EP    | R     | F                                       |
| Indicators of disfunction     | no outlet   | 0       | 0                 |       | 0     |       | 0                                       |
| Direct Indicators of Function | none  |         |                   |       |       |       | 111111111111111111111111111111111111111 |
| Primary Variables             |   |         | One of the second |       |       |       |   |
| Wetland Land Use              | <ul> <li>moderate intensity</li> </ul>  | (3)     | 3                 | 3     | 3     | 3     | 3                                       |
|                               | <ul> <li>low intensity</li> </ul>   | 2       | 2                 | 2     | 2     | 2     | 2                                       |
|                               | <ul> <li>high intensity</li> </ul>  | 1       | 1                 | 1     | 1     | 1     | 1                                       |
| Degree of Outlet              | unrestricted outflow  | 3       | 0                 | 0     | 0     | 0     | 3                                       |
| Restriction                   | <ul> <li>restricted outflow</li> </ul>  | 1       | 0                 | 0     | 0     | 0     | 1                                       |
| Inlet/Outlet Class            | perennial outlet  | 3       | 3                 | 0     | 0     | 0     | 3                                       |
|                               | • intermittent outlet   | Î       | 1                 | 0     | 0     | 0     | 1                                       |
| Wetland Water Regime          | <ul> <li>drier: seasonally flooded,<br/>temporarily flooded, saturated</li> </ul> | 3       | 3                 | 3     | 0     | 3     | 3                                       |
|                               | wet: permanently flooded,<br>intermittently exposed,<br>semipermanently flooded.  | 1       | 1                 | 1     | 1     | 1     | 1                                       |
| Vegetation Den-               | • high/very high  | 3       | 3                 | 3     | 3     | 3     | 3                                       |
| sity/Dominance                | • 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       | 73                | 3     | 3     | 3     | 3                                       |
|                               | • histosol  | 1       | 4                 | 1     | 1     | 1     | 1                                       |
|                               | Total Score:  | 13      | 17                |       | -     | -     | -                                       |
|                               | - Model Range:  | 5-18    | 4-15              | 3-12  | 2-10  | 3-12  | 5-1                                     |
|                               | Functional Capacity Index:  | Total   | 41                | 1     |       |       |   |
|                               | runctional Capacity Index:  | Score   |                   | 0.80  |       |       |   |
|                               |   | 18      | 15                | 12    | 10    | 12    | 18                                      |
|                               | Index Range:  | 0.27-   | 0.26-             | 0.25- | 0.20- | 0.25- | 0.2                                     |
|                               |   | 1.0     | 1.0               | 1.0   | 1.0   | 1.0   | 1.0                                     |

# 2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation (This model is identical for all HGM types)

| VARIABLES CONDITIONS  Indicators of Disfunction no vegetation |                                     |  | WEIGHTS                       |                        |
|---|-------------------------------------|--|-------------------------------|------------------------|
|   |                                     | no vegetation  |                               | 0                      |
| Direct Indicators of F  | unction                             | none   |                               |                        |
| Primary Variables   | Plant<br>Species<br>Diversity       | <ul> <li>high diversity</li> <li>medium diversity</li> <li>low diversity</li> </ul>  |                               | 5<br>3<br>1            |
| •   | Vegetation<br>Density/Do<br>minance | <ul> <li>high/very high</li> <li>medium</li> <li>sparse/low</li> </ul>   |                               | ⑤<br>3<br>1            |
| •   | Wetland<br>Juxtapositio<br>n        | <ul> <li>connected upstream and downstream</li> <li>connected above or below</li> <li>other wetlands nearby but not connected (400 m or closer)</li> <li>isolated</li> </ul> | ,                             | 5<br>3)<br>1           |
|   |                                     | 130 Med  | Total Score: Model Range:     | 2-15                   |
|   |                                     |  | Functional Capacity<br>Index: | = Total<br>Score<br>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                   | <ul><li>low intensity (0-25% urbanized)</li></ul>                                 | 3                |
|                                      | <ul> <li>moderate intensity (25-50% urbanized)</li> </ul>                         | 2                |
|                                      | • high intensity (>50% urbanized)   | 0                |
| Wetland Land Use                     | • low intensity   | 3                |
| Wettalid Land Osc                    | • moderate intensity  | 2                |
|                                      | • high intensity  | 1                |
|                                      |   |                  |
| Wetland Water Regime                 | • wet: permanently flooded, intermittently  | 3                |
|                                      | exposed, semipermanently flooded  |                  |
|                                      | <ul> <li>drier: seasonally flooded, temporarily<br/>flooded, saturated</li> </ul> | Ô                |
|                                      | Hooded, Saturated   |                  |
| Microrelief of Wetland Surface       | • pronounced  | 3                |
|                                      | well developed  | 2                |
|                                      | poorly developed  | 3<br>2<br>1      |
|                                      | • absent  | 0                |
| Number of Wetland types and Relative | • 5 or more types   | 3                |
| Proportions                          | • 3-4 types   | 2                |
|                                      | • 1-2 types   | 3<br>2<br>①<br>0 |
|                                      | • no vegetation   | 0                |
|                                      | • even distribution   | 3                |
|                                      | <ul> <li>moderately even distribution</li> </ul>                                  | 2                |
|                                      | <ul> <li>highly uneven distribution</li> </ul>                                    | 1                |
|                                      | • no vegetation   | 0                |
| Vegetation Interspersion             | • high interspersion  | 3                |
|                                      | <ul> <li>moderate interspersion</li> </ul>  | 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                |
|                                      | <ul> <li>no vegetation</li> </ul>   | 0                |
|                                      | • layers well developed (>50% cover)  | 3                |
|                                      | <ul> <li>layers with moderate cover (26-50%</li> </ul>                            | 2                |
|                                      | cover)  |                  |
|                                      | <ul> <li>layers poorly distinguishable (&lt;25%</li> </ul>                        | 0                |
|                                      | cover)  |                  |
|                                      | • no vegetation   | 0                |

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

| VARIABLES  | CONDITIONS  | WE                     | EIGHTS      |
|--|---|------------------------|-------------|
| Interspersion of Vegetation Cover and  | • 26-75% scattered or peripheral                        |                        | 3           |
| Open Water   | <ul> <li>&gt;75% scattered or peripheral</li> </ul>     |                        | 2           |
|  | < 25% scattered or peripheral                           |                        | 1           |
|  | • 100% cover or open water                              |                        | 0           |
|  | • no vegetation   |                        | 0           |
| • Size   | • large (>100 acres)                                    |                        | 3           |
|  | medium (10-100 acres)                                   |                        | 2           |
|  | • small (< 10 acres)                                    |                        | Ф           |
| Wetland Juxtaposition  | other wetlands within 400 m and                         |                        | 3           |
| The state of the s | connected above or below                                |                        |             |
|  | <ul> <li>other wetlands within 400 m but not</li> </ul> |                        | 1           |
|  | connected   |                        |             |
|  | <ul> <li>wetland isolated</li> </ul>                    |                        | 0           |
|  | •   | 16                     | 11          |
| Slope Wetlands:  | All Other HGM Types:                                    | Total Coores           |             |
| Model Range: 4-33  |   | Model Range:           | 4-36 15 5 A |
| Functional Capacity Index = Total Score  |   | Functional Capacity To | tal Score   |
| 33   |   | Index =                | 36          |
| Index Range: 0.12-1.0  |   | Index Range 0          | 0.11-1.0    |

### **Sloping Wetland**

0.36 ac. - 47% of total 0.78 ac. wetlands

Study Area: CRS-3

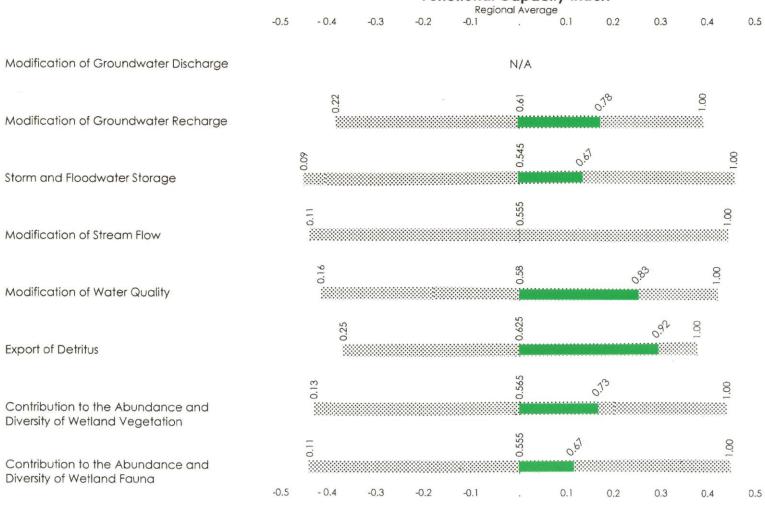


### Lacustrine Fringe Wetland

0.41ac. - 53% of total 0.78 ac. wetlands

**Functional Capacity Index** 

Study Area: CRS-3



# WETLAND INVENTORY DATA LACOSTRULE FRANCE 0.41 & 0.56 ac

| Project Number: York Town    | Date:  | 0.784 |
|------------------------------|--|-------|
|                              | - The state of the |       |
| Wetland Number: <u>CP5-3</u> | g, regregated a Ministry e   |       |
| Aerial Photo Numbers:        |  |       |
| USGS Quadrangle: DSSILILIG   |  |       |
| Field Investigators:         |  |       |

### PART 1 - CHARACTERIZATION of WETLAND

| SURFAC   | E WATER FLOW VE  | CTORS  | PLANT SPECIES  |   |  |  |  |
|--|--|--|--|---|--|--|--|
| Condition  | Percent/Acreag   | e  | Des handle   | FW DOW COM  |  |  |  |
| → <u></u>  | valuation of temperary   | Depressional   | AMORKAN ELM<br>SWEET BIECH   |   |  |  |  |
| <b>##</b>  | 47%  | Slope<br>Flat  | GRAY BIECH   |   |  |  |  |
| ←  | Appendix Committee Committ | Extensive Peatland   | MULTIFLAN POSIS  |   |  |  |  |
|  | 53%  | Lacustrine<br>Fringe   | MUSTARD GARLIC<br>ONION GRASS  |   |  |  |  |
| 9-0-   | ***************************************  | Riverine   | SKULL CARRAGE  | #00000 <b>5</b> 000000<br>0000000000000000000000000   |  |  |  |
| 7 7  | VEGETATION TYPES   | S  | BLAKEFTER  |   |  |  |  |
| Type .   | Percent/Acreage  |  |  |   |  |  |  |
| Forested Wetland Evergreen Needle-leaved Deciduous Broad-leaved Needle-leaved Scrub Shrub Evergreen Broad-leaved Needle-leaved Deciduous Broad-leaved Needle-leaved Emergent Wetland Persistent Non-persistent Aquatic Bed | 40%  | Histosol Fibric Hemic Sapric  Mineral Hydric Soil Gravelly Sandy Silty Clayey  GEOLOGY  Surficial: | 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 Herb   |  |  |  |
| Comments: 150  | evoir is made control of water   |  | Public ownership Wildlife management area Fisheries management area Designated State or Federal protected wet  | Documented habitat for state or federal listed species Regionally scarce wetland category Historic/archaeologic |  |  |  |

### WETLAND INVENTORY DATA (continued)

### PART 2 - CHARACTERIZATION of MODEL VARIABLES

| T. I. D. C.  | Misseeller CW  |  |
|--|--|--|
| LANDSCAPE VARIABLES  | Microrelief of Wetland Surface:  | Number of Types & Relative Proportions:  |
| Size:  | Pronounced >45 cm  | Number of Types Evenness of Distribution   |
| Small (<10 acres)  | Poorly Developed <15 cm  | Actual # Even Distribution   |
| Medium (10-100 acres) Large (>100 acres)   | Absent   | I man the state of |
| Large (>100 acres)   | Inlet/Outlet Class:  | Highly Uneven Distribution   |
| Wetland Juxtaposition:   | The state of the s | 1 2  |
| Connected Upstream and Downstream  | No Injet/Intermittent Outlet   |  |
| Only Connected Above   | No Inlet/Intermittens Outlet No Inlet/Perennial Outlet   | Vegetation Density/Dominance:  |
| Only Connected Below   | Intermittent Injet/No Outlet   |  |
| Other Wetlands Nearby but not Connected Wetland Isolated   | Intermittent Inlet/Intermittent Outlet   | (0.20.0)   |
| A ensure isotated  | Intermittent Outlet/Perennial Outlet   | Low Density (20-40%)  Medium Density (40-60%)  |
| Fire Occurence and Frequency:  | Perennial Inlet/No Outlet  | High Density (60-80%)  |
| Natural; Predictable Frequency   | Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet   | Very High Density (80-100%)  |
| Natural: Sporadio Frequency  | and an analytic analytic and an analytic analytic and an analytic analytic analytic and an analytic a | Vegetative Interspersion:  |
| Human-caused; Predictable  | Nested Piezometer Data:  |  |
| Human-caused: Sporadic   | Recharge   | High (small groupings, diverse and interspersed)  Moderate (broken irregular rings)  |
| No Evidence  | Discharge  | Low (large pstches, concentric rings)  |
| A STATE OF THE STA | Horizontal Flow Not Available  |  |
| Regional Scarcity:   |  | Number of Layers and Percent Cover:  |
| Not Scarce (>5% of total wetland area of region)   | Relationship of Wetlands' Substrate Elevation  | Number of Layers % Cover   |
| Scarce (<5% of total wetland area of region)   | to Regional Piezometric Surface:   | 6 or > (actual #) 1. submergents:  |
| Watershed Land Use:  | Piez. Surface Above or at Substrate elev.  | 2. floating:<br>3. moss-lichen:  |
| >50% urbanized   | Piez. Surface below Substrate elev.  | 3. moss-nonen:   |
| 25-50% urbanized   | Not Available  | 2 5. tall herb:  |
| 0-25% urbanized  | Evidence of Sedimentation:   | 1 6. dwarf shrub:  |
|  | No Evidence Observed   | 7. short shrub:  |
| HYDROLOGIC VARIABLES   | Sediment Observed on Wetland Substrate   | 8. tall shrub:   |
| Surface Water Level Fluctuation of Wetland:  | Fluvaquent Soils   | 9. sapling:<br>10. tree:   |
|  | Fuldam es is   | Plant Species Diversity:   |
| High Fluctuation Low Fluctuation   | Evidence of Seeps and Springs:   | Tiant Species Diversity:   |
| Never Inundated  | No Sceps or Springs  | Low 1-2 plots sampled  |
| F  | Seeps Observed Perennial Spring  | Medium 3-4 piots sampled   |
| Frequency of Overbank Flooding:  | Intermittent Spring  | High 5 or more plots sampled   |
| Return Interval' > 5 yrs. Return Interval 2-5 yrs.   |  | Proportion of Animal Food Plants:  |
| Return Interval 1-2 yrs.   | SOIL VARIABLES   |  |
| No Overbank Flooding   | Soil Lacking:  | Low (5-25% cover)  Medium (25-50% cover)   |
| pH:  |  | Medium (25-50% cover)  High (>50% cover)   |
|  |  |  |
| Acid <5.5 Circumneutral 5.5-7.4  | Histosol:  | Cover Distribution:  |
| Alkaline >7.4  | Fibric   | Continuous Cover   |
| No Water   | Hemic .  | Small Scattered Patches  |
| S  | ☐ Sapric   | I or More Large Patches; Parts of Site Open  |
| Surficial Geologic Deposit Under Wetland   | Mineral Hydric Soil:   | Solitary, Scattered Stems  |
| Low Permeability Stratified Deposits High Permeability Stratified Deposits   | Gravelly Gravelly  | N 170 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |
| High Permeability Stratified Deposits Glacial Till   | Sandy  | Dead Woody Material:   |
| 27076 1270701011111111   | Silty  | Abrundant (>50 of wetland surface)   |
| Wetland Land Use:  | Clayey   | Moderately Abrundant (25-50% of surface)   |
| High Intensity (ie. agriculture)   | VEGETATION VARIABLES   | Low Abrundance (0-25% of surface)  |
| Moderate Intensity (ie. forestry)  |  | Interspersion of Cover and Open Water:   |
| Low Intensity (ie. open space)   | Vegetation Lacking:  |  |
| Wetland Water Regime:  |  | 26-75% Scauered or Peripheral  |
| Wet: Penn Flooded, Intermittently Exposed,   | Dominant Wetland Type:   | >75% Scattered or Peripheral   |
| Semiperm, Flooded  |  | <25% Scattered or Peripheral 100% Cover or Open Water  |
| Drier: Sessonally Flooded, Temporarily Flooded,  | Forested - Evergreen - Needle-leaved Forested - Deciduous - Broad-leaved   | Total de la di Open mater  |
| Saturated  | Forested - Deciduous - Needle-leaved   | Stream Sinuosity:  |
| Basin Topographic Gradient:  | Scrub Shrub - Evergreen - Repad-leaved   | Highly Convoluted (index 1.50 or >)  |
| High Gradient >2%  | Scrub Shrub - Evergreen - Needle-leaved  | Moderately Convoluted (index 1.30 or 5)  |
| ☐ Low Gradient <2%   | Scrub Shrub - Deciduous - Broad-leaved   | Straight/Slightly Irreg. (index) 1.10-1.25   |
| Degree of Outlet Restriction:  | Scrub Shrub - Deciduous - Needle-leaved Emergent - Persistent  |  |
| Restricted Outflow   | Emergent - Non-persistent  | Presence of Islands:   |
| Utrestricted Outlow  | Aquatic Bed  | Several to Many  |
| ☐ No Outflow   |  | One or Few   |
| Ratio of Wetland Area to Watershed Area:   |  | Absent   |
| ☐ High >10%  |  |  |
| ■ Low <10%   |  | 25   |

CES-3 LACUSTRILE FRINCE 0.41 ec (53%)
5LOPE 0.36 ec (47%)
0.78 ec

### 2.9.1 Modification of Ground Water Discharge

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

(continued)

|           |                            | WEIGHTS        |       |       |      |  |  |
|-----------|----------------------------|----------------|-------|-------|------|--|--|
| VARIABLES | CONDITIONS HGM TYPES:      | D              | S     | R     | E    |  |  |
| Soil Type | • histosol                 | 3              | 3     | 3     | 3    |  |  |
|           | mineral hydric soil        | 1              | 1     | 1     | 1    |  |  |
|           |                            | -              | 4     | -     | -    |  |  |
|           | Total Score:               |                |       |       |      |  |  |
|           | Model Range:               | 3-18           | 2-15  | 3-15  | 3-18 |  |  |
|           | Functional Capacity Index: | Total<br>Score | 4-0   | 7.7   | _    |  |  |
|           | :                          | 18             | 15    | 15    | 18   |  |  |
|           | Index Range:               | 0.19-1.0       | 0.16- | 0.22- | 0.19 |  |  |
|           |                            |                | 1.0   | 1.0   | 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

| •   |   |                                    |   |     | WEIGH | TS |   |
|---|---|------------------------------------|---|-----|-------|----|---|
| VARIABLES   | CONDITIONS HGM TYPES:                                 |                                    | D | EL) | EP    | R  | F |
| Indicators of Disfunction Inlet/Outlet Class      | no inlet/perent tent inlet/perer                      | nial outlet; intermit-             | 0 |     |       |    | 0 |
| Nested Piezometer Data                            | discharge cond  | lition                             | 0 | 0   | 0     | 0  | 0 |
| Relationship to Regional Piezo-<br>metric Surface | <ul> <li>wetland substr<br/>or at piezomet</li> </ul> | ate elevation above<br>ric surface | 0 | 0   | 0     | 0  | 0 |
| Presence of Seeps and Springs                     | <ul> <li>presence of se</li> </ul>                    | eps or springs                     | 0 | 0   | 0     | 0  | 0 |

(continued)

|   |                                     |  |                 |       | WEIGH | ITS         |             |
|---|-------------------------------------|--|-----------------|-------|-------|-------------|-------------|
| VARIABLES   | CONDITIONS                          | HGM TYPES:                             | D               | L     | EP    | R           | F           |
| Direct Indicators of Function  Inlet/Outlet Class                     | perennial inlet/no outlet           |  | 21              |       |       |             | 21          |
| Nested Piezometer Data  | • recharge condi                    | <ul> <li>recharge condition</li> </ul> |                 |       |       |             | 21          |
| <ul> <li>Relationship to Regional<br/>Peizometeric Surfacé</li> </ul> | wetland substra     piezometric sui | ate elevation below                    | 21              |       |       |             | 21          |
| Primary Variables   |                                     |  |                 | 6     | 4     |             |             |
| Microrelief of Wetland Surface  | Poorly Develop     Absent           | ped                                    | 3 2 1           | 3 2   | 1     | 3 2         | 3           |
|   | Well Develope                       | d                                      | 2               | 2     | 2     | 2           | 2           |
|   | <ul> <li>Pronounced</li> </ul>      |  | 1               | ī     | 3     | ī           | ī           |
| Inlet/Outlet Class  | Perennial Inlet     All Other Class | /Intermittent Outlet                   | 3               | 0     | 0     | 0           | 3           |
| • pH  | • Acid                              |  | 3               | 3     | 3     | 3           | 3           |
|   | <ul> <li>Circumneutral</li> </ul>   |  | 3 2 1           | 3 2   | 3 2 1 | 3<br>2<br>1 | 3<br>2<br>1 |
|   | • Alkaline                          |  | 1               | I     | 1     | 1           | 1           |
|   | <ul> <li>No water prese</li> </ul>  | ent                                    | 0               | 0     | 0     | 0           | 0           |
| Surficial Geologic Deposit Un-  | Glacial Till                        |  | 3               | (D)   | 1     | 1           | 3           |
| der Wetland   |                                     | ity Stratified Depos-                  | 3 2             | 1     | 2     | 2           | 2           |
|   | High Permeabi     its               | lity Stratified Depos-                 | 1               | 3     | 3     | 3           | 1           |
| Surface Water Level Fluctuation                                       | High Fluctuation                    | on                                     | 3               | 3     | 0     | 3           | 3           |
| of the Wetland  | <ul> <li>Low Fluctuation</li> </ul> | n                                      | 2               | 2     | Ö     | 2           | 2           |
|   | <ul> <li>Never Inundate</li> </ul>  | ed                                     | 1               | 1     | 0     | 1           | 1           |
| Wetland Water Regime  | Drier: Seasona     porarily Floode  | ally Flooded, Tem-                     | 3               | 3     | 0     | 3           | 3           |
|   | • Wet: Permane                      | ntly Flooded, Inter-                   | 1               | 1     | 0     | 1           | 1           |
|   | mittently Expos                     | sed, Semiper-<br>led                   | -               | -     | -     | -           | _           |
| Soil Type   | Gravelly or Sar                     | ndy Mineral Hydric                     | 3               | (3)   | 0     | 3           | 3           |
|   | <ul> <li>Silty or Clayey</li> </ul> | Mineral Hydric                         | 2               | 3     | 0     | 2           | 2           |
|   | Sapric Histosol     Fibric or Hemi- | c Histosol                             | 0               | 0     | 0     | 0           | 0           |
|   |                                     | Total Score:                           |                 | 14    |       |             |             |
|   |                                     | Model Range:                           | 4-<br>21        | 4-18  | 2-12  | 4-18        | 4-2         |
|   | r                                   | and Canasim I. I.                      | Т.              |       | 18    |             |             |
|   | Functi                              | onal Capacity Index:                   | To-             | 140   | 01.   |             |             |
|   |                                     |  | tal<br>Sco      | 18    | 12    | 18          | 21          |
|   |                                     |  | <u>re</u><br>21 |       |       |             |             |
|   |                                     |  |                 |       |       |             |             |
|   |                                     | Index Range:                           | 0.1             | 0.22- | 0.16- | 0.22-       | 0.19        |
|   |                                     |  | 9-              | 1.0   | 1.0   | 1.0         | 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.

|  |   |    |     | WEIGHTS      |    |   |    |
|--|---|----|-----|--------------|----|---|----|
| VARIABLES  | CONDITIONS HGM TYPES:                                   | D  | S   | The state of | EP | R | F  |
| Indicators of disfunction  | none  |    |     |              |    |   |    |
| Direct Indicators of Function  | no outlet   | 27 | 21  |              |    |   | 30 |
| Primary Variables  |   |    |     |              |    |   |    |
| Inlet/Outlet Class   | <ul> <li>perennial inlet/intermittent outlet</li> </ul> | 3  | 3   | 0            | 0  | 0 | 3  |
| THE CALLET   | 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  |
|  | <ul> <li>perennial inlet/perennial outlet</li> </ul>    | 1  | 1   | 0            | 0  | 0 | 1  |
| Degree of Outlet   | • restricted  | 3  | 0   | 0            | 0  | 0 | 3  |
| Degree of Outlet     Restriction   | • unrestricted  | 0  | 0   | 0            | 0  | 0 | 0  |
| RESTRICTION  | - uncontroled   | -  | -   |              |    |   |    |
| . D : T  | low gradient  | 3  | 3   | 0            | 3  | 3 | 3  |
| Basin Topographic  |   | 1  | (I) | 0            | 0  | 1 | 1  |
| Gradient   | • high gradient   | •  | •   |              | 7  |   |    |
|  | - Discourselly Seeded                                   | 3  | (3) | (3)          | 0  | 3 | 3  |
| <ul> <li>Wetland Water Regime</li> </ul>   | Drier: seasonally flooded,                              | ,  | 0   | 0            |    |   |    |
|  | temporarily flooded, saturated                          | 1  | 1   | 1.           | 0  | 1 | 1  |
|  | • Wet: permanently flooded, intermit-                   | 1  | 1   | 1 .          | 0  | * |    |
|  | tently exposed, semipermanently                         |    |     |              |    |   |    |
|  | flooded   |    |     |              |    |   |    |
|  |   | 2  | 0   | 3            | 0  | 3 | 3  |
| <ul> <li>Surface Water Level</li> </ul>  | <ul> <li>high fluctuation</li> </ul>                    | 2  | 0   | 2            | 0  | 2 | 2  |
| Fluctuation of the   | <ul> <li>low fluctuation</li> </ul>                     |    | 0   | 0            | 0  | 0 | 0  |
| Wetland  | <ul> <li>never inundated</li> </ul>                     | 0  | 0   | 0            | U  | U | U  |
|  |   | 3  | 3   | 3            | 0  | 3 | 3  |
| <ul> <li>Ratio of Wetland Area to</li> </ul>   | • large   | 1  | (1) | 1            | 0  | 1 | 1  |
| Watershed Area   | • small   | 1  | 0   | 0            | U  |   |    |
| The second secon |   | 3  | 3   | 3            | 3  | 3 | 3  |
| <ul> <li>Microrelief of Wetland</li> </ul>   | • pronounced  | 2  | 2   | 2            | 2  | 2 | 2  |
| Surface  | <ul> <li>well developed</li> </ul>                      |    |     | 1            | 1  | 1 | 1  |
|  | <ul> <li>poorly developed</li> </ul>                    | 1  | 1   | 0            | 0  | 0 | 0  |
|  | • absent  | 0  | 0   | 0            | 0  | U | U  |
|  | a to be flooding about                                  | 0  | 0   | 0            | 0  | 0 | 0  |
| <ul> <li>Frequency of Overbank</li> </ul>  | overbank flooding absent                                | 0  | 0   | 1            | 0  | 1 | 1  |
| Flooding   | • return interval of >5 yrs                             | 0  | 0   | 2            | 0  | 2 | 2  |
|  | • return interval of 2-5 yrs                            | 0  | 0   | 3            | 0  | 3 | 3  |
|  | <ul> <li>return interval of 1-2 yrs</li> </ul>          | 0  | 0   | (3)          | U  | 3 |    |
|  | a bish town birth                                       | 3  | (3) | 3            | 3  | 3 | 3  |
| <ul> <li>Vegetation</li> </ul>   | high/very high  | 2  | 2   | 2            | 2  | 2 | 2  |
| Density/Dominance  | • moderate  | 1  | 1   | 1            | 1  | 1 | 1  |
|  | • sparse/low  | 0  | 0   | 0            | 0  | 0 | 0  |
|  | <ul> <li>no vegetation</li> </ul>                       | U  | U   | U            | 0  |   |    |

### 2.9.3 Storm and Flood-Water Storage (Continued)

|                     |  |                        | WEIGHTS              |                  |                  |                  |                  |                  |
|---------------------|--|------------------------|----------------------|------------------|------------------|------------------|------------------|------------------|
| VARIABLES           | CONDITIONS   | HGM TYPES:             | D                    | S                | E                | EP               | R                | F                |
| Dead Woody Material | abundant     moderately abundant     sparse     absent | ant                    | 3<br>2<br>1<br>0     | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 | 3<br>2<br>1<br>0 |
|                     |  | Total Score:           |                      | 1/               | 14               |                  |                  |                  |
|                     |  | Model Range:           | 4-27                 | 4-21             | 2-21             | 0-12             | 3-24             | 4-30             |
|                     | Func   | tional Capacity Index: | Total<br>Score<br>27 | 21               | 14 =             | 12               | 24               | 30               |
|                     |  | Index Range:           | 0.15-<br>1.0         | 0.19-<br>1.0     | 0.09-            | 0-1.0            | 0.12-<br>1.0     | 0.13<br>1.0      |

### 2.9.4 Modification of Stream Flow

(This model is identical for all HGM types)

|  | VARIABLES                                 |   |                               | CO                             | NDITIONS   | WEIGHTS           |
|--|---|---|-------------------------------|--------------------------------|--|-------------------|
| Indicators   | of Disfunction                            |   | no outlet                     |                                |  | 0                 |
| Direct Ind   | icators of Function                       | 1   | none                          |                                |  |                   |
| Primary V  | 'ariables                                 |   |                               |                                |  |                   |
| Storm and<br>Function  | Flood Water Stor<br>Model Score           | age                                       | Modific<br>Discharge          | ation of Grone<br>E Function M | undwater<br>lodel Score                            |                   |
| High<br>Mod<br>Low<br>High<br>Mod<br>Low<br>High<br>Mod<br>Low | 3<br>2<br>1<br>3<br>2<br>1<br>3<br>2<br>1 | x<br>x<br>x<br>x<br>x<br>x<br>x<br>x<br>x | High High Mod Mod Low Low Low | 3 3 3 2 2 2 1 1 1              | =            | 9 6 3 6 4 2 3 2 1 |
|  |   |   |                               | Function                       | Total Score:<br>Model Range:<br>al Capacity Index: | Total Score       |
|  |   |   |                               |                                | Index Range:                                       | 0.11-1.0          |

<sup>\*</sup>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

|                               |  | WEIGHTS     |          |       |      |       |    |
|-------------------------------|--|-------------|----------|-------|------|-------|----|
| VARIABLES                     | CONDITIONS HGM TYPES:                                  | D           | S        | E     | EP   | R     | F  |
| ndicators of disfunction      | none   |             |          |       |      |       |    |
| Direct Indicators of Function | evidence of sedimentation                              | 18          | 15       | 12    | 12   | 12    | 18 |
| Primary Variables             |  |             |          |       |      |       |    |
| Wetland Land Use              | <ul> <li>low intensity</li> </ul>                      | 3           | 3        | 3     | 3    | 3     | 3  |
|                               | <ul> <li>moderate intensity</li> </ul>                 | 2           | 2        | 2     | 2    | 2     | 2  |
|                               | high intensity   | 1           | 1        | 1     | 1    | 1     | 1  |
| Degree of Outlet              | • restricted outflow                                   | 3           | 0        | 0     | 0    | 0     | 3  |
| Restriction                   | • no outlet  | 2           | 0        | 0     | 0    | 0     | 2  |
|                               | <ul> <li>unrestricted outflow</li> </ul>               | 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  |
|                               | <ul> <li>growing in small scattered patches</li> </ul> | 2           | 2        | 2     | 2    | 2     | 2  |
|                               | one or more large patches                              | 1           | 1        | 1     | 1    | 1     | 1  |
|                               | <ul> <li>solitary scattered stems</li> </ul>           | 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  |
| 7                             | • silty soil   | 2           | 2        | 2     | 0    | 2     | 2  |
|                               | <ul> <li>sandy or gravelly soil</li> </ul>             | 1           | 0        | 1     | 0    | 1     | 1  |
|                               | Total Score:   | -           | <u>n</u> | 10    | _    | _     | -  |
|                               |  |             |          |       |      | 2.12  | 4  |
|                               | Model Range:   | 4-18        | 3-15     |       | 1-12 | 2-12  | 4- |
|                               | Functional Capacity Index:                             | Total       | 11 = 0   | 130   | 0,83 |       |    |
|                               |  | Score<br>18 | 15       | 12    | 12   | 12    | 1  |
|                               | Index Range:   | 0.22-       | 0.20-    | 0.16- | 0.8- | 0.16- | 0. |
|                               |  | 1.0         | 1.0      | 1.0   | 1.0  | 1.0   | 1. |

### 2.9.6 Export of Detritus

|                               |   | WEIGHTS              |        |         |       |       |     |
|-------------------------------|---|----------------------|--------|---------|-------|-------|-----|
| VARIABLES                     | CONDITIONS HGM TYPES:   | 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              | <ul> <li>moderate intensity</li> </ul>  | 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              | unrestricted outflow  | 3                    | 0      | 0       | 0     | 0     | 3   |
| Restriction                   | • restricted outflow  | 1                    | 0      | 0       | 0     | 0     | 1   |
| Inlet/Outlet Class            | perennial outlet  | 3                    | 3      | 0       | 0     | 0     | 3   |
|                               | • intermittent outlet   | 71)                  | 3<br>1 | 0       | 0     | 0     | 1   |
| Wetland Water Regime          | drier: seasonally flooded,<br>temporarily flooded, saturated                    | 3                    | (3)    | 3       | 0     | 3     | 3   |
|                               | wet: permanently flooded,<br>intermittently exposed,<br>semipermanently flooded | 1                    | 1      | 1       | 1     | 1     | 1   |
| Vegetation Den-               | • high/very high  | 3                    | 3      | 3       | 3     | 3     | 3   |
| sity/Dominance                | • medium  | 2                    | 2      | 2       | 2     | 2     | 2   |
|                               | <ul><li>sparse/low</li></ul>  | 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  | 5-1 |
|                               | Functional Capacity Index:  | Total<br>Score<br>18 | 12 =0  | 30 11 = | 10    | 12    | 18  |
|                               | Index Range:  | 0.27-                | 0.26-  | 0.25-   | 0.20- | 0.25- | 0.2 |

# 2.9.7 Contribution to Abundance and Diversity of Wetland Vegetation (This model is identical for all HGM types)

| VARIABLES            |                              | CONDITIONS  |                     | WEIGHT   | S  |
|----------------------|------------------------------|---|---------------------|----------|----|
| Indicators of Disfun | of Disfunction no vegetation |   | 0                   |          |    |
| Direct Indicators of | Function                     | none  |                     |          |    |
| Primary Variables    |                              | high diversity  |                     | 5        |    |
| - Inner              | Plant                        | <ul> <li>medium diversity</li> </ul>                  |                     | 3        |    |
|                      | Species                      | low diversity   |                     | (1)      |    |
|                      | Diversity                    |   |                     |          |    |
|                      | Vegetation                   | <ul> <li>high/very high</li> </ul>                    |                     | 5        |    |
|                      |                              | medium  |                     | 3        |    |
|                      | Density/Do                   |   |                     | 1        |    |
|                      | minance                      | • sparse/low  |                     |          |    |
|                      | Wetland                      | <ul> <li>connected upstream and downstream</li> </ul> |                     | 3        |    |
|                      | Juxtapositio                 | connected above or below                              |                     | (3)      |    |
|                      | n                            | other wetlands nearby but not                         |                     | 1        |    |
|                      | -11                          | connected (400 m or closer)                           |                     |          |    |
|                      |                              | • isolated  |                     | 0        |    |
|                      |                              | - Isolated  |                     | 9 11     |    |
|                      |                              |   | Total Score:        |          |    |
|                      |                              |   | Model Range:        | 2-15     | 好: |
|                      |                              |   | Moder Range:        | er-t-J   | 15 |
| *                    |                              |   | Functional Capacity | = Total  | 1- |
|                      |                              |   | Index:              | Score    | 14 |
|                      |                              |   | Ilidex.             | 15       | 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                    |  | 6           |
| Watershed Land Use                   | <ul> <li>low intensity (0-25% urbanized)</li> </ul>        | 3           |
|                                      | <ul> <li>moderate intensity (25-50% urbanized)</li> </ul>  | 2           |
|                                      | <ul> <li>high intensity (&gt;50% urbanized)</li> </ul>     | . 1         |
| Wetland Land Use                     | • low intensity  | 3           |
| Wettalid Land Osc                    | moderate intensity   | 2           |
|                                      | • high intensity   | 1           |
|                                      |  |             |
| Wetland Water Regime                 | • wet: permanently flooded, intermittently                 | 3           |
|                                      | exposed, semipermanently flooded                           |             |
|                                      | drier: seasonally flooded, temporarily                     | 0           |
|                                      | flooded, saturated   | (1)         |
| Microrelief of Wetland Surface       | • pronounced   | 3           |
|                                      | • well developed   | 2           |
|                                      | poorly developed   | (1)         |
|                                      | • absent   | 3<br>2<br>1 |
| Number of Wetland types and Relative | • 5 or more types  | 3           |
| Proportions                          | • 3-4 types  | 2           |
| Troportions                          | • 1-2 types  | 3<br>2<br>1 |
|                                      | • no vegetation  | 0           |
|                                      | • even distribution  | 3           |
|                                      | moderately even distribution                               | 3<br>2<br>① |
|                                      | highly uneven distribution                                 | (D)         |
|                                      | • no vegetation  | 0           |
| Vegetation Interspersion             | • high interspersion                                       | 3           |
| Vegetation interspersion             | • moderate interspersion                                   | (2)         |
|                                      | low interspersion  | 2           |
|                                      | • no vegetation  | 0           |
| Number of Layers and Percent Cover   | • 5 or more layers   | 3           |
| Trumber of Eayers and Tercent Cover  | • 3-4 layers   | 2           |
|                                      | • 1-2 layers   | 1           |
|                                      | • no vegetation  | 0           |
|                                      | • layers well developed (>50% cover)                       | 3           |
|                                      | • layers with moderate cover (26-50%                       | 2           |
|                                      | cover)   | 1           |
|                                      | <ul> <li>layers poorly distinguishable (&lt;25%</li> </ul> | 0           |
|                                      | cover)   |             |
|                                      | • no vegetation  | 0           |

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

| VARIABLES                               | CONDITIONS  |                     | WEIGHTS     |
|---|---|---------------------|-------------|
| Interspersion of Vegetation Cover and   | 26-75% scattered or peripheral                              |                     | 3           |
| Open Water                              | <ul> <li>&gt;75% scattered or peripheral</li> </ul>         |                     | 2           |
|   | <25% scattered or peripheral                                |                     | 1           |
|   | • 100% cover or open water                                  |                     | 0           |
|   | • no vegetation   |                     | 0           |
| • Size                                  | • large (>100 acres)  |                     | 3 2         |
|   | medium (10-100 acres)                                       |                     | 2           |
|   | • small (<10 acres)   |                     | 1           |
| Wetland Juxtaposition                   | other wetlands within 400 m and<br>connected above or below |                     | 3           |
|   | other wetlands within 400 m but not connected               |                     | 1           |
|   | wetland isolated  |                     | 0           |
|   | •   |                     | 22 24       |
| Slope Wetlands:                         | All Other HGM Types:  | Total Score:        |             |
| Model Range: 4-33                       |   | Model Range:        | Total Score |
| Functional Capacity Index = Total Score |   | Functional Capacity | Total Score |
| 33                                      | •   | Index =             | 36          |
| Index Range: 0.12-1.0                   |   | Index Range         | 0.11-1.0    |