

Table 1

**2005-2009 HABITAT ASSESSMENT MONITORING RESULTS
Valley Branch Watershed District**

¹Overall Submergent Vegetative Quality rating is the average of the exotic species density rating, macrophyte density rating, and floristic value rating [>0.80 = Excellent, $0.67 - 0.80$ = High, $0.33-0.66$ = Moderate, <0.33 = Poor].

The following table provides the calculation for the Overall Submergent Vegetative Quality rating.

Overall Submergent Vegetative Quality ¹	Avg. Exotic Species Density	Exotic Species Density/ Occurrence Rating Score	Average Macrophyte Density	Average Macrophyte Density Rating Score	Floristic Value	Floristic Value Rating Score	Total Overall Diversity Score
Poor	>2.0	0.1	>1.75	0.1	0 - 3	0.1	<0.33
Moderate	$>1.0 - 2.0$	0.5	$1.25 - 1.75$	0.5	$>3 - 6$	0.5	$0.33 - 0.66$
High	1	0.75			$>6 - 9$	0.75	$0.67 - 0.80$
Excellent	0	1	$1.0-1.25$	1.0	>9	1	>0.80

²Plant Occurrence Ratings are a relative measure of the total amount of submergent vegetation (App. A) covering the submergent zone, with a scale from 1 to 3 utilizing a 6-tined hook; 1 = light density (plant species found on only 1 tine),

2 = moderate density (plant species found on 2 to 4 tines), 3 = heavy density (plant species found on 5 or 6 tines).

³Average Floristic Value (FV) or the mean coefficient of conservatism, was developed by Stan Nichols (Washington Geological and Natural History Survey) as part of the Floristic Quality Index. FV is an indication of how typical a plant is in a pristine/non-disturbed environment. A plant found in clear, low nutrient and undisturbed conditions is given a 10. Plants typically found in more nutrient rich and /or disturbed waters are given lower numbers. The Average FV is the average of FV for all plants present in the water body. In general, a higher average FV = higher lake quality. The rating for the average FV: $0.0 - 3.0 = 0.1$ (Poor), $3.0 - 5.0$ (Moderate), $6.0 - 8.0$ (High), $9.0 - 10.0$ (Excellent). These ratings are slightly changed from the 2005 and 2006 report, since the Minnesota Floristic Quality Assessment was published in May 2007. The floristic value was recalculated based on Minnesota values rather than the previous Wisconsin values. The rating adjustment is based on the guidelines within the Minnesota assessment.

⁴Emergent Zone Vegetation Quality is the average of the following parameters within the emergent zone: the approximate areal coverage rating, the total number of native wetland species rating, and the areal coverage of exotic species rating: >0.66 = Excellent, $0.33-0.66$ = Moderate, <0.33 = Poor. The following table provides the calculation for the Quality rating.

Emergent Zone Vegetative Quality ⁴	% Cover	Total Number of Native Wetland Plants	Number of Native Wetland Plants	% Cover of Exotics	% Cover of Exotics Rating Score	Overall Emergent Zone Quality Score
Poor	0 - 25%	$< \text{or} = 5$	0.1	$76 - 100\%$	0.1	<0.33
Moderate	$76 - 100\%$ or $26 - 50\%$	$>5 - 10$	0.33	$51 - 75\%$	0.33	$0.33 - 0.66$
Excellent	$51 - 75\%$	$>10 - 15$	0.66 (High)	$26 - 50\%$	0.66 (High)	
		>15	1	$0 - 25\%$	1	>0.66

⁵Approximate Areal Coverage of vegetation within the entire emergent zone is estimated based on a visual survey during travels around the water body. Estimates are broken into four categories: $0-25\%$ =Poor, $26-50\%$ =Moderate, $51-75\%$ =Excellent, $76-100\%$ =Moderate.

⁶The total number of native wetland plant species within the emergent zone is based on a visual survey during travels on the water body: $0-5$ = Poor, $6-10$ = Moderate, >10 = Excellent.

⁷Approximate Total Percent Cover of Native Vegetation Within The Vegetated Emergent Zone, is estimated based on a visual survey during travels around the water body.

⁸Exotic Species Approximate Total Percent Cover Within The Vegetated Emergent Zone, is estimated based on a visual survey during travels around the water body. Estimates are broken into four categories: $0-25\%$ =Excellent(1.0), $26-50\%$ =Moderate(0.66), $51-75\%$ =Poor(0.33), $76-100\%$ =Poor(0.1)

⁹Overall Upland Buffer Quality is determined based on the average of four upland buffer quality parameters not including the number of exotic species present and the number of native plant species: >0.66 = Excellent, $0.33-0.66$ = Moderate, <0.33 = Poor. Overall Upland Buffer Quality rating.

Overall Upland Buffer Quality ⁹	% Cover	Exotics % Cover	Exotics % Cover Rating Score	Buffer Width	Buffer Width Rating Score	Buffer Continuity	Buffer Continuity Rating Score	Overall Upland Buffer Quality Score
Poor	$<75\%$	$>40\%$	0.1	<10 ft.	0.1	$0-25\%$	0.1	< 0.33
Moderate	$75-95\%$	$15-40\%$	0.5	$10-25$ ft.	0.4	$26-50\%$	0.4	$0.33 - 0.66$
Excellent	$>95\%$	$<15\%$	1.0	$25-50$ ft.	0.7 (High)	$51-75\%$	0.7 (High)	
				>50 ft.	1.0	$76-100\%$	1.0	> 0.66

¹⁰Unmanicured Upland Buffer Width is divided into four categories: Excellent(1.0) = >50 ft, High(0.7) = $25-50$ ft, Moderate(0.4) = $10-25$ ft, and Low(0.1) = <10 ft.

¹¹Estimated Total Vegetative Cover for upland buffer is the proportion of the ground covered by vegetation within 50 feet of the wetland/upland transition zone.

The percent cover is divided into three categories: Excellent(1.0) = $>95\%$, Moderate(0.5) = $75 - 95\%$, and Poor(0.1) = $<75\%$.

¹²The Total Number of Native Plant Species within the unmanicured upland buffer zone is based on 2 to 3 sampling locations and a visual survey.

¹³Upland Buffer Continuity is a measure of the proportion of the water body surrounded by the unmanicured, native upland buffer.

This measure is divided into four categories: Excellent(1.0) = $76 - 100\%$, High(0.7) = $51 - 75\%$, Medium(0.4) = $26 - 50\%$, and Low(0.1) = $0 - 25\%$.

¹⁴Upland Buffer Exotic Species Percentage of Total Coverage is the percent cover of exotic species within the unmanicured upland buffer, which is divided into three categories: Excellent(1.0) = $<15\%$, Moderate(0.5) = $15 - 40\%$, and Poor(0.1) = $>40\%$.

¹⁵The presence of shoreline erosion is determined by the approximate percentage of the shoreline affected and is divided into the following three categories: $0 - 10\%$, $11 - 25\%$, $26 - 100\%$.

Rating Code: **Poor** **Moderate** **High or Excellent**