

## **Appendix B: Riparian Corridor Assessment Protocol**

### **I. Objectives for Assessing the Riparian Corridor:**

- A. Identify and map the types of vegetative communities and non-vegetated surfaces that are within the riparian corridor of the stream.
- B. Compare the results from the riparian vegetation mapping project with stream stability assessments (e.g. location of BEHIs) and stream typing. Look for correlations between stream type and riparian vegetation type. Is vegetation often poor where streams are having stability problems? The data from within the 100 ft. buffer range will be most important in this assessment. Assess riparian vegetation in terms of channel stability and flood risks. These types of information will be discussed within the management plan.
- C. Start a data library for potential future reference and stream management. In the future, we can compare these results with additional riparian assessments and see how the riparian corridor changes over time.
- D. Use the vegetation mapping data to roughly assess nonpoint source pollution of the stream, based on the percent of impervious surfaces within the riparian corridor.
- E. Identify areas of poor vegetation and potential planting sites where improvement of the riparian vegetation is likely to be both effective and successful.
- F. Develop management recommendations that may be implemented by landowners, Towns or GCSWCD, to maintain, protect and improve/enhance (e.g. plantings) the riparian corridor.

### **II. Vegetation Mapping Project**

- A. Use ArcGIS 8.3 to map the riparian corridor vegetation types and non-vegetated surfaces.
- B. Create a shapefile of the center of the stream channel. The line will be drawn over the approximate center of the stream using the 2001 DOQQ's at a scale of 1:1000. Or, if the stream alignment has been drawn, create a polygon of the stream by tracing the stream alignment.
- C. If using the centerline of a stream, create one buffer shapefile, at 350 feet from the center of the stream. If using a polygon of the stream create a 300ft. buffer.
- D. Add the soils shapefiles (WOH and hydric) and wetland shapefiles (NWI and DEC maps) to aid in classifying wetland vegetative communities. The soils24woh shapefile will need to be joined with the comp INFO table to determine drainage characteristics of the soils. Identify the soils within the soils24woh shapefile that are poorly or very poorly drained. Those soils that are hydric, poorly drained or very poorly drained will usually support wetland vegetation.

E. Map the vegetation types and non-vegetated surfaces within the 350 ft. buffer. Create a shapefile by drawing polygons around areas of each classification type using the 2001 DOQQ's at a scale of at least 1:1000. Clip the results of this mapping effort to the boundary of the 100' buffer to create a shapefile with the classification types found within the 100' buffer.

F. Designate vegetation types according to Level 1 and Level 2 classification categories, as determined by DEP and GCSWCD on January 7, 2005.

<b>Level 1</b>	<b>Level 2</b>	<b>Code</b>	<b>Notes</b>	<b>WQ notes</b>
Bare soil	Cobble	BSC		
	Construction Spoils	BSCS		
	Exposed Bank	BSEB		
	Gravel Mine	BSGM		
	Junkyard	BSJ		
	Landfill/dump	BSL		
	Roadcut cliff/slope	BSR		
	Bedrock	BSB		
	Herbaceous Vegetation	Mowed Lawn	HML	
Mowed Lawn w/ Trees		HMLT		
Mowed Roadside		HMR		
Pastureland		HP		
Wet Meadow		HWM		
Shallow Emergent Marsh		HSEM		
Sparse Vegetation		HSV		
Successional Old Field		HSOF		
Cropland		HC	field, row	
Shrubland		Brushy Cleared Land	SBCL	
	Evergreen Shrubland	SE		
	Deciduous Shrubland	SD		
	Scrub/Shrub Wetland	SW		
<b>Level 1</b>	<b>Level 2</b>	<b>Code</b>	<b>Notes</b>	<b>WQ notes</b>
Shrubland	Successional Shrubland	SS		
Deciduous Closed Tree Canopy	Closed Northern Hardwood	DCNH		
	Closed Floodplain Forest	DCFF		

	Closed Deciduous Forested Wetlands	DCFW		
	Closed Successional Northern Hardwood	DCSNH		
Deciduous Open Tree Canopy	Open Northern Hardwood	DONH		
	Open Floodplain Forest	DOFF		
	Open Deciduous Forested Wetlands	DOFW		
	Open Successional Northern Hardwood	DOSNH		
Evergreen Closed Tree Canopy	Closed Hemlock Forest	ECH		
	Closed White Pine Forest	ECWP	Plantation	
	Closed Evergreen Forested Wetlands	ECFW		
Evergreen Open Tree Canopy	Open Hemlock Forest	EOH		
	Open White Pine Forest	EOWP		
	Open Evergreen Forested Wetlands	EOFW		
Mixed Closed Tree Canopy	Closed Hemlock-Northern Hardwood	MCHN		
	Closed Pine-Northern Hardwood	MCPN		
	Closed Spruce-Northern Hardwood	MCSN		
	Closed Mixed Forested Wetlands	MCFW		
Mixed Open Tree Canopy	Open Hemlock-Northern Hardwood	MOHN		
	Open Pine-Northern Hardwood	MOPN		
	Open Spruce-Northern Hardwood	MOSN		
	Open Mixed Forested Wetlands	MOFW		
Unpaved Road	Unpaved road	UR	gravel, dirt	
	Railroad	URR		
	Path	UP		
Impervious Surface	Paved	ISP		
	Other	ISO		
	Rooftop	ISR	Commercial, Residential	
Revetment	Riprap*	RRR	dumped, stacked	
	Concrete	RC		
<b>Level 1</b>	<b>Level 2</b>	<b>Code</b>	<b>Notes</b>	<b>WQ notes</b>
Revetment	Other	RO	cribbing	
Water	Backwater Slough	WBS		
	Farm Pond/agricultural pond	WFPAg		
	Farm Pond/artificial pond	WFPA		
	Industrial Cooling Pond	WICP		
	Natural Pond	WNP		

	Reservoir/Artificial Impoundment	WR		
	Sewage Treatment Pond	WSTP		
	Tributary	WT		
	Beaver Impoundment	WBI		
	Ephemeral Pond/Pool	WEP	vernal pool	
	Stream	WS		
	Stream/Drainage	WSD		
	Modifications:			
	Cobble/Herbaceous		reclass as sparse veg	
	C.R.E.P.		sep layer	
	Rural Structure Exterior		reclass as rooftop	
	*delete "erosion control roadside"			
	Commercial, Residential		reclass into appropriate Impervious Surface categories	

Standards for classifying vegetation (modified from the National Vegetation Classification Standard):

Non-Vegetated

**Impervious Surfaces** (0% Vegetative Cover) Roads, buildings, driveways

**Unpaved Road** (0% Vegetative Cover) Semi-impervious surfaces, roads, driveways, railroads, paths (dirt, gravel)

Open Tree Canopy

**Evergreen Open Tree Canopy** (25% - 60% cover, Evergreens contribute to > 75%, Crowns not touching)

**Deciduous Open Tree Canopy** (25% - 60% cover, Deciduous contributes to > 75%)

**Mixed evergreen-deciduous Open Tree Canopy** (25% - 75% of each type)

Closed Tree Canopy

**Closed Evergreen Tree Canopy** (Evergreen contributes to > 75% cover)

**Closed Deciduous Tree Canopy** (Deciduous Contributes to 75% Cover)

**Closed Mixed Tree Canopy** (25% - 75% each type)

Herbaceous and Shrub Vegetation

**Herbaceous Vegetation** (Herbaceous species dominant, > 25% of cover)

**Deciduous Shrubland** (Shrubs > 0.5 m tall, individual or clumps not overlapping, > 25% canopy cover with tree cover < 25%)

- F. Field Checking. After reviewing photos in the office and picking out several different polygons with a variety of vegetation types check the designation of these types on the map by going out into the field, locating the areas, and assessing if the assignment is correct.
- G. Analyze the data created by the vegetation mapping project. Determine the acreage and percent cover of vegetation types and non-vegetated surfaces for the entire stream corridor and for individual management units. Use this information to make management recommendations and to help determine where the riparian corridor needs to be enhanced through potential planting programs. Note: Inadequate vegetation represents areas within the riparian buffer that may provide opportunities to improve the buffer with streamside plantings in order to promote a more mature vegetative community along the streambank and in the floodplain. To obtain the amount of inadequate vegetation combine the acreage of bare soil, herbaceous vegetation and revetment.