Habitat Assessment Data Sheet (2011-2012)

STREAM NAME:	**SITE CODE:**
DATE/TIME:	**INVESTIGATORS:**
LATITUDE	**LONGITUDE:**
SITE DESCRIPTION:	**WEATHER CONDITIONS:**

Habitat Parameter	Reference	Good	Fair	Poor
Epifaunal Substrate/Cover	Greater than 70% (50% for low gradient streams) of stream bed and lower banks covered with mix of substrates favorable for epifaunal colonization and fish cover; substrates include snags, submerged logs, undercut banks, and unembedded cobbles and boulders (for high gradient)	40-70% (30-50% for low gradient streams) of stream bed and lower banks covered with a mix of substrates favorable for epifaunal colonization and fish cover	20-40% (10-30% for low gradient streams) of stream bed and lower banks covered with substrates favorable for epifaunal colonization and fish cover; few substrate types present	Less than 20% (10% for low gradient streams) of stream bed and lower banks covered with substrates favorable for epifaunal colonization and fish cover; few substrate types present
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Embeddedness (high gradient)	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment. Little open space between particles.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment. Almost no open space between particles.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Pool Substrate Characterization (low gradient)	Characterization (low gradient) Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Velocity/Depth Patterns (high gradient)	All 4 velocity/depth patterns present: slow-deep, slow-shallow, fast-deep, fast-shallow. Slow is < 1 ft/s. (0.3 m/s), deep is > 1.5 ft (0.5 m).	Only 3 of the 4 patterns present (if fast-shallow is missing, score lower than if missing other regimes.	Only 2 of the 4 patterns present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/ depth pattern (usually slow-deep).
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Pool Variability (low gradient)	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**

Sediment Deposition	Little or no enlargement of mid-channel bars or point bars and < 5% (20% in low gradient streams) of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; -30% (20-50% in low gradient streams) of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% (50-80% in low gradient streams) of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; > 50% (80% in low gradient streams) of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Channel Flow Status	Water reaches base of both lower banks, and <10% of channel bed substrate is exposed.	Water fills >75% of the available channel; or <25% of channel bed substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Channel Alteration	Channelization in the form of dredging, straightening, berms or streambank armoring absent; stream with natural pattern.	Some channel alterations present along 10-20% of segment, usually in areas of bridge abutments; evidence of past channelization, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization along 20-80% of stream segment ; riprap or armoring present on both banks.	Over 80% of the stream segment channelized and disrupted. Instream habitat greatly altered or removed entirely.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Frequency of riffles/steps (high gradient)	Occurrence of riffles/steps relatively frequent; ratio of distance between riffles is 5-7 times (steps 3-5 times) stream width; variety of habitat is key. In streams where riffles/steps are continuous, presence of boulders or other large, natural obstruction is important.	Occurrence of riffles/steps infrequent; distance between riffles is 7-15 times (steps 5-15 times) stream width.	Occasional riffle/step or bend; bottom contours provide some habitat; distance between riffles/steps is 15 to 25 stream widths.	Generally all flat water or shallow riffles/steps; poor habitat; distance between riffles/steps is >25 stream widths. Mostly runs.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**
Channel Sinuosity (low gradient)	The bends in the stream increase the stream length 2.5 to 4 times longer than the straight down-valley length.	The bends in the stream increase the stream length 1.5 to 2.5 times longer than the straight down-valley length.	The bends in the stream increase the stream length 1 to 1.5 times longer than the straight down-valley length.	Channel straight; waterway has been channelized for a long distance.
	20 19 18 17 16	**15 14 13 12 11**	**10 9 8 7 6**	**5 4 3 2 1**

Bank Stability (score each bank) *Note: determine left or right side by facing downstream.*	Banks stable; evidence of erosion or bank failure absent or minimal; < 5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly re-vegetated. 5-30% of bank in segment (or reach) has areas of erosion.	Moderately unstable; 30-60% of bank in segment (or reach) has areas of erosion; high erosion potential from crumbling, unvegetated banks during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score _____ (LB)	**Left bank 10 9**	**8 7 6**	**5 4 3**	**2 1 0**
Score _____ (RB)	**Right bank 10 9**	**8 7 6**	**5 4 3**	**2 1 0**
Bank Vegetative (score each bank) *Note: determine left or right side by facing downstream.*	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or herbaceous vegetation; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
Score _____ (LB)	**Left bank 10 9**	**8 7 6**	**5 4 3**	**2 1 0**
Score _____ (RB)	**Right bank 10 9**	**8 7 6**	**5 4 3**	**2 1 0**
Riparian Vegetative Zone Width (score each side of channel. *Note: determine left or right side by facing downstream*)	Width of naturally vegetated riparian zone >100 feet; human activities, (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) and grazing have not impacted zone.	Width of riparian zone 50 - 100 ft; human activities and grazing have impacted zone only minimally.	Width of riparian zone 25 - 50 ft.; human activities and grazing have impacted zone a great deal.	Width of riparian zone < 25 feet: little or no riparian vegetation due to human activities.
Score _____ (LB)	**Left bank 10 9**	**8 7 6**	**5 4 3**	**2 1 0**
Score _____ (RB)	**Right bank 10 9**	**8 7 6**	**5 4 3**	**2 1 0**
HABITAT SCORE	**Sum of score for all 10 categories for stream type (high or low gradient): _____ x 100 = 200**			

Comments: