

2019 MBSS Habitat Assessment Certification Training



Howard Community College May 28, 2019





COMMENTS:

MBSS SPRING HABITAT DATA SHEET Day d			
SITE Waterbald Code Segment Type Year Reviewor. / Second	•	MBSS Habitat Certification	on Data Sheet
DATE Way Meeh Day			
Dist. from Nearest Road to Site (m) RIPARIAN VEGETATION (Isong upstream) Trash Rating 0 - 20 LET BANK RIGHT BANK	APPLICANT:	ORGANIZATION:	DATE:
LANDUSE (YN) Old Field Renderstall	BANK EROSION	HABITAT ASSESSMENT	RIPARIAN VEGETATION
Deciduous Forest Commercial/Industrial Conferous Forest Cropland Buffer Breaks (*/N)	Left Bank Right Bank Extent (m)	1. Instream Habitat (0-20)	(facing upstream)
Weltand Pasture BUFFER BREAKS Surface Mine Orchard Vineyard Nursery Landfill Golf Course LEFT BANK RIGHT BANK	Severity	2. Epifaunal Substrate (0-20)	LEFT BANK RIGHT BANK
ROAD CULVERT STREAM GRADIENT TIE Drain Tie Drain Tropsv Drainage	0 = none 1 = min 2 = mod	Velocity/Depth Diversity (0-20)	Width (50m max)
Present in Segment? (1/16) New Construction Orchard	3 = severe Average	4. Pool/Glide/Eddy Quality (0-20) · · · · ·	Adjacent Land Cover
Samplestin (* (*N) Crop Pasture Witch of Culved (n) Gully	BAR FORMATION &	Extent (m)·····	Vegetation Type
Leigh of Colvert (in) Dir Road Gravel Road Rawsoway	SUBSTRATE	5. Riffle/Run Quality (0-20)·····	Buffer Breaks (Y/N)
Railroad Suffer Break Types (M = Mnor, S = Severe)	Severity Cobble 0 = none Gravel		LEFT BANK RIGHT BANK
CHANNELIZATION	1 = min 2 = mod 3 = severe Sand	6. Embeddedness (%) ·····	Storm Drain
Extense of Course Stagetoning of Onespay (7/6) TYPE EXTENS 60 TOTAL ROUTE ROUTE STAGETON CONTRIBUTE CONTRIBUT	Silt/Cla	7. Shading (%)	Impervious Drainage
Outron Fig. Pag Grann Blook in (m) Stream Blook in (m)	4 Mary 1974 - 19	I CHARACTER Present E = Extensive	Gully Orchard
Earlies tem Charge Space Of Character Charge Space Character Charge Space Of Character	Braided	Gravel Boulder >2m	Crop Pasture
	Riffle	Sand Boulder <2m	New Construction Dirt Road
x 2014 MBSS SUMMER HABITAT DATA SHEET Tripe	Run/Glide	Silt/Clay Beaver Pond	Gravel Road Raw Sewage
SITE THE THE STATE OF THE STATE	Deep Pool (>= 0.5m)	Cobble Overhead Cover	Railroad Buffer Break Types
Let Bank Right Bank 1. Instrumen Haliblat (0-20)	Shallow Pool (< 0.5m)	Bedrock Undercut Bank	(M = minor; S = severe)
	Maximum Depth (cm)	Orange Floc	
Auropa BAR FORMATION & Extent (m)			<u> </u>
SUBSTRATE Sensy Code 6 - over Code Code Code Code Code Code Code Code	Woody Debris No. of Instream Woody Deb	nrie .	NELIZATION
	No. of Dewatered Woody D	2000 Na 100 Na	of Channel Straightening or Dredging (Y/N)
STREAM CHARACTER Braided Gravel Broider - 2m	No. of Instream Rootwads	11112	T BANK BOTTOM RIGHT BANK
Refile Sand Boulder <2m Runr Olide Sell/Clay Beaver Pond	9	Concrete	
Deep Pool (~ 0.5m)	No. of Dewatered Rootwads	Gabion Rip-Rap	
Crange Floc A = Absent P = Present E = Extensive	COMMENTS:	Earthen Berm	N/A
Woody Debris Maximum Depth (cm) Alternative Flow Measurements	3	Dredge Spoil Off Channel	N/A
No. of Institute Woody Debris Words Tuding Woody Tuding Woody Tuding Woody Tuding United by Tuding United	<u>8</u>	Pipe Culvert	
No. of Instream Rootwards Time (sec) 1		-	
No. of Dewatered Rochards			MARY AND



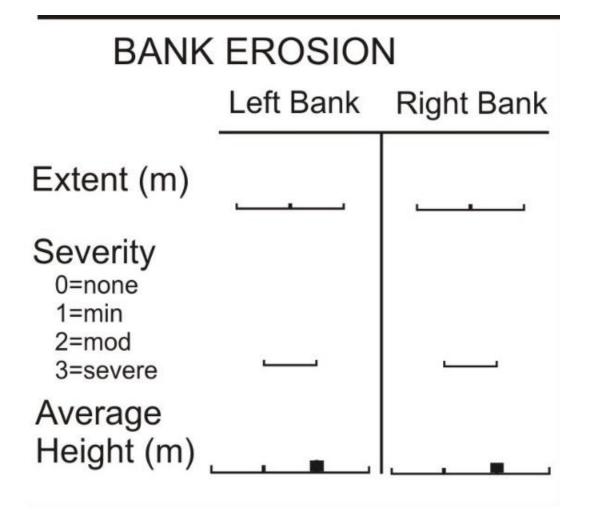
MBSS Habitat Certification Data Sheet APPLICANT: ORGANIZATION: DATE: HABITAT ASSESSMENT RIPARIAN VEGETATION BANK EROSION (facing upstream) Instream Habitat (0-20). Epifaunal Substrate (0-20) LEFT BANK RIGHT BANK Velocity/Depth Diversity (0-20) Width (50m max) 2 = mod Pool/Glide/Eddy Quality (0-20). Adjacent Land Cover Extent (m) --Vegetation Type **BAR FORMATION &** 5. Riffle/Run Quality (0-20) SUBSTRATE Buffer Breaks (Y/N) Extent (m)-Cobble Severity 0 = none LEFT BANK RIGHT BANK Gravel 1 = min 2 = mod 6 Embeddedness (%)..... Sand Storm Drain Tile Drain Silt/Clay Shading (%)... Impervious Drainage Gully STREAM CHARACTER Orchard A = Absent P = Present F = Extensive Crop Pasture Braided Gravel Boulder >2m New Construction Dirt Road Riffle Boulder <2m Sand Gravel Road Run/Glide Silt/Clay Beaver Pond Raw Sewage Deep Pool (>= 0.5m) Overhead Cover Buffer Break Types Shallow Pool (< 0.5m) Bedrock Undercut Bank (M = minor: S = severe) Orange Floc Maximum Depth (cm) Woody Debris CHANNELIZATION No. of Instream Woody Debris Evidence of Channel Straightening or Dredging (Y/N) No. of Dewatered Woody Debris TYPE EXTENT (m) LEFT BANK воттом RIGHT BANK No of Instream Rootwads Concrete No. of Dewatered Rootwads Gabion Rip-Rap Earthen Berm N/A COMMENTS: Dredge Spoil Off Channel NA Pipe Culvert

MBSS Habitat Certification

- Bank Erosion
- Bar Formation
- Habitat Assessment
- Stream Character
- Woody Debris
- Riparian Vegetation
- Channelization

















No bank erosion

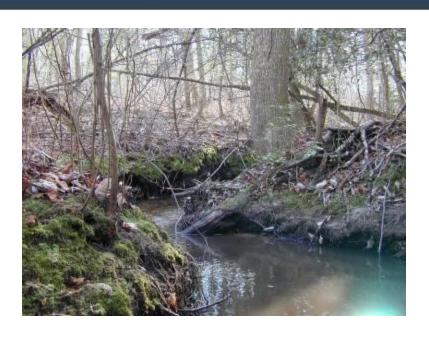
Extent = 0

Severity = 0 (none)

Average Height = 0









Minimum bank erosion

Extent = 10 m

Severity = 1

Average Height = 0.2 m









Moderate bank erosion

Extent = 40 m

Severity = 2

Average Height = 0.6 m











Severe bank erosion

Extent = 75 m

Severity = 3

Average Height = 2 m





APPLICANT:	OR	GANIZATION:		DATE:
BANK EROSION Left Bank Right B Extent (m) Severity 0 - none 1 - min BAR FORMATION 8 SUBSTRATE Severity 0 - none 1 - min 3 - severe Severity 0 - none 1 - min 3 - severe Severity 0 - none 1 - min 3 - severe Severity 0 - none 1 - min 5 - severe Severity 0 - none 1 - min 5 - severe Severity 6 - severe Severity 6 - severe Severity 7 - severe Severity 8 - severe Severity 9 - severe	HABITA 1. Instream Habitat 2. Epifaunal Substra 3. Velocity/Depth Di 4. Pool/Glide/Eddy (Extent (m)- 5. Riffle/Run Quality Extent (m)- 6. Embeddedness (7. Shading (%) EAM CHARACTER P = Present Gravel Sand Silt/Clay Cobble Bedrock	T ASSESSMENT (0-20)	RIPARI. (faction of the content of t	AN VEGETATION ding upstream) FT BANK RIGHT BAN FT BANK RIGHT BAN Buffer Break Types (M = minor; S = severe)
Woody Debris No. of Instream Woody No. of Dewatered Woo No. of Instream Rootw No. of Dewatered Roo COMMENTS:	ads twads	Evidence of	NELIZATION of Channel Straightening or EXTENT (m) F BANK BOTTOM NIA NIA NIA	

MBSS Summer Habitat Data Sheet

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BAR FORMATION & SUBSTRATE Cobble Severity 0=none Gravel 1=min 2=mod Sand 3=extensive Silt/Clay

Characterize most dominant substrate type











Bar Formation = None







Bar Formation = Minor (Sand, Gravel)







Bar Formation = Moderate (Sand, Silt/Clay)







Bar Formation = Extensive (Cobble, Gravel, Sand, Silt/Clay)





MBSS Habitat Certification Data Sheet APPLICANT: ORGANIZATION: DATE: HABITAT ASSESSMENT RIPARIAN VEGETATION BANK EROSION (facing upstream) Left Bank Right Bank Instream Habitat (0-20)-Extent (m) Epifaunal Substrate (0-20)-LEFT BANK RIGHT BANK Severity 0 - none 1 - min Velocity/Depth Diversity (0-20) Width (50m max) 2 - mod 3 = severe Pool/Glide/Eddy Quality (0-20). Adjacent Land Cover Extent (m)·· Vegetation Type **BAR FORMATION &** Riffle/Run Quality (0-20) SUBSTRATE Buffer Breaks (Y/N) Cobble Severity 0 = none LEFT BANK RIGHT BANK Gravel 1 = min 2 = mod Embeddedness (%) Sand Storm Drain Tile Drain Silt/Clay Shading (%) Impervious Drainage STREAM CHARACTER Orchard A = Absent P = Present F = Extensive Crop Pasture Braided Gravel Boulder >2m New Construction Dirt Road Riffle Boulder <2m Sand Gravel Road Run/Glide Silt/Clay Beaver Pond Raw Sewage Deep Pool (>= 0.5m) Overhead Cover Buffer Break Types Shallow Pool (< 0.5m) Bedrock Undercut Bank (M = minor: S = severe) Orange Floc Maximum Depth (cm) Woody Debris CHANNELIZATION No. of Instream Woody Debris Evidence of Channel Straightening or Dredging (Y/N) No. of Dewatered Woody Debris TYPE EXTENT (m) LEFT BANK воттом RIGHT BANK No of Instream Rootwads Concrete No. of Dewatered Rootwads Gabion Rip-Rap Earthen Berm N/A COMMENTS: Dredge Spoil Off Channel NA Pipe Culvert

MBSS Summer Habitat Data Sheet

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HABITAT ASSESSMENT
1. Instream Habitat (0-20)
2. Epifaunal Substrate (0-20)·····
3. Velocity/Depth Diversity (0-20)
4. Pool/Glide/Eddy Quality (0-20)
Extent (m)
5. Riffle/Run Quality (0-20)·····
Extent (m)·····
6. Embeddedness (%) · · · · · · ·
7. Shading (%)





Habitat Parameter	Optimal 16-20	Sub-Optimal 11-15	Marginal 6-10	Poor 0-5
1. Instream Habitat ^(a)	Greater than 50% of a variety of cobble, boulder, submerged logs, undercut banks, snags, rootwads, aquatic plants, or other stable habitat	30-50% of stable habitat. Adequate habitat	10-30% mix of stable habitat. Habitat availability less than desirable	Less than 10% stable habitat. Lack of habi- tat is obvious
2. Epifaunal Substrate ^(b)	Preferred substrate abundant, stable, and at full colonization potential (riffles well developed and dominated by cobble; and/or woody debris prevalent, not new, and not transient)	Abund. of cobble with gravel &/or boulders common; or woody de-bris, aquatic veg., undercut banks, or other pro-ductive surfaces common but not prevalent /suited for full colonization	Large boulders and/or bedrock prevalent; cobble, woody debris, or other preferred surfaces uncommon	Stable substrate lacking; or particles are over 75% surrounded by fine sediment or flocculent material
3. Velocity/Depth Diversity ^{fe)}	Slow (<0.3 m/s), deep (>0.5 m); slow, shallow (<0.5 m); fast (>0.3 m/s), deep; fast, shallow habitats all present	Only 3 of the 4 habitat categories present	Only 2 of the 4 habitat categories present	Dominated by 1 ve- locity/depth category (usually pools)
4. Pool/Glide/Eddy Quality ^(d)	Complex cover/&/or depth > 1.5 m; both deep (> .5 m)/shallows (< .2 m) present	Deep (>0.5 m) areas present; but only moderate cover	Shallows (<0.2 m) prevalent in pool/glide/eddy habitat; little cover	Max depth <0.2 m in pool/glide/eddy habitat; or absent completely
5. Riffle/Run Quality ^(a)	Riffle/run depth generally >10 cm, with maximum depth greater than 50 cm (maximum score); substrate stable (e.g. cobble, boulder) & variety of current velocities	Riffle/run depth generally 5-10 cm, variety of current velocities	Riffle/run depth generally 1-5 cm; primarily a single current velocity	Riffle/run depth < 1 cm; or riffle/run substrates concreted
6. Embeddedness ^(f)	Percentage that gravel, flocculent material.	cobble, and boulder part	ticles are surrounded by	line sediment or

* Use to answer certification test questions





Instream Habitat - Habitat quality as it relates to fishes

Habitat Parameter	Optimal	Sub-Optimal	Marginal	Poor
	16-20	11-15	6-10	0-5
1. Instream Habitat ^(a)	Greater than 50% of a variety of cobble, boulder, submerged logs, undercut banks, snags, rootwads, aquatic plants, or other stable habitat	30-50% of stable habitat. Adequate habitat	10-30% mix of stable habitat. Habitat availability less than desirable	Less than 10% stable habitat. Lack of habitat tat is obvious





Instream Habitat



03/19/2018

Optimal 16-20

Greater than 50% of a variety of cobble, boulder, submerged logs, undercut banks, snags, rootwads, aquatic plants, or other stable habitat

Score = 20

Sub-Optimal 11-15

30-50% of stable habitat. Adequate habitat

Score = 14





Instream Habitat



Marginal 6-10

10-30% mix of stable habitat. Habitat availability less than desirable Score = 8

Poor 0-5

Less than 10% stable habitat. Lack of habitat is obvious

Score = 4





Epifaunal Substrate - Habitat quality as it relates to benthic macroinvertebrates

Habitat Parameter	Optimal	Sub-Optimal	Marginal	Poor
	16-20	11-15	6-10	0-5
2. Epifaunal Substrate ^(b)	Preferred substrate abundant, stable, and at full colonization potential (riffles well developed and dominated by cobble; and/or woody debris prevalent, not new, and not transient)	Abund. of cobble with gravel &/or boulders common; or woody de-bris, aquatic veg., under- cut banks, or other pro-ductive surfaces common but not prevalent /suited for full colonization	Large boulders and/or bedrock prevalent; cobble, woody debris, or other preferred surfaces uncommon	Stable substrate lacking; or particles are over 75% surrounded by fine sediment or flocculent material





Epifaunal Substrate



Preferred substrate abundant, stable, and at full colonization potential (riffles well developed and dominated by cobble; and/or woody debris prevalent, not new, and not transient)

Optimal

Score = 19

Abund. of cobble with gravel &/or boulders common; or woody de-bris, aquatic veg., undercut banks, or other pro-ductive surfaces common but not prevalent /suited for full colonization

Sub-optimal Score = 14





Epifaunal Substrate



Large boulders and/or bedrock prevalent; cobble, woody debris, or other preferred surfaces uncommon

Marginal Score = 8



Stable substrate lacking; or particles are over 75% surrounded by fine sediment or flocculent material

Poor Score = 2





Velocity/Depth Diversity – Based on the variety of velocity/depth regimes present at a site

MBSS Stream Habitat Assessment Guidance Sheet					
Habitat Parameter	Optimal 16-20	Sub-Optimal 11-15	Marginal 6-10	Poor 0-5	
3. Velocity/Depth Diversity ^(c)	Slow (<0.3 m/s), deep (>0.5 m); slow, shallow (<0.5 m); fast (>0.3 m/s), deep; fast, shallow habitats all present	Only 3 of the 4 habitat categories present	Only 2 of the 4 habitat categories present	Dominated by 1 ve- locity/depth category (usually pools)	





Pool/Glide/Eddy Quality – Based on the depth and spatial complexity of slow water habitat present at site

MBSS Stream Habitat Assessment Guidance Sheet					
Habitat Parameter	Optimal 16-20	Sub-Optimal 11-15	Marginal 6-10	Poor 0-5	
4. Pool/Glide/Eddy Quality ^(d)	Complex cover/&/or depth > 1.5 m; both deep (> .5 m)/shallows (< .2 m) present	Deep (>0.5 m) areas present; but only moderate cover	Shallows (<0.2 m) prevalent in pool/glide/eddy habitat; little cover	Max depth <0.2 m in pool/glide/eddy habitat; or absent completely	





Riffle/Run Quality – Based on the depth, complexity, and functional importance of riffle/run habitat present at site

Habitat Parameter	Optimal	Sub-Optimal	Marginal	Poor
	16-20	11-15	6-10	0-5
5. Riffle/Run Quality ^(e)	Riffle/run depth generally >10 cm, with maximum depth greater than 50 cm (maximum score); substrate stable (e.g. cobble, boulder) & variety of current velocities	Riffle/run depth generally 5-10 cm, variety of current velocities	Riffle/run depth generally 1-5 cm; primarily a single current velocity	Riffle/run depth < 1 cm; or riffle/run substrates concreted





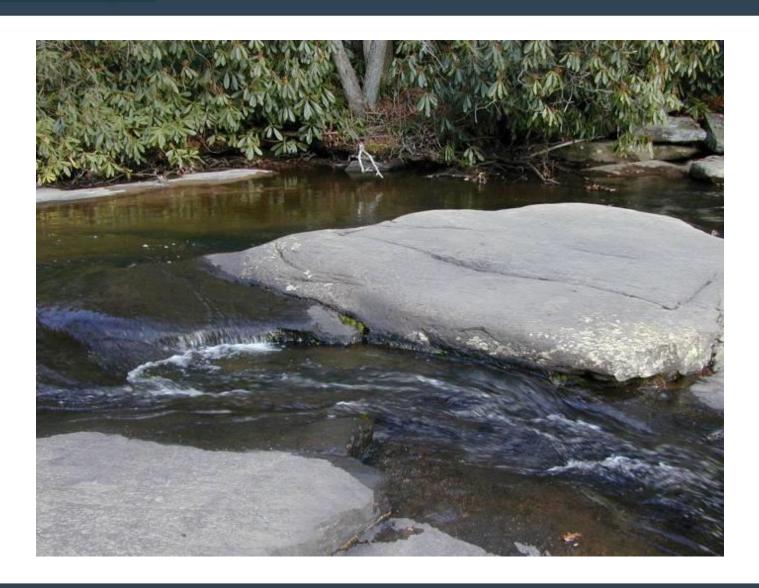
Embeddedness – Measured at fastest flowing section in the 75 m site

6.	Embeddedness ^(f)	Percentage that gravel, cobble, and boulder particles are surrounded by line sediment or	
		flocculent material.	

- * Measure embeddedness in fastest flowing areas in the site
 - if no riffle within 75m site, riffle near the site can be used







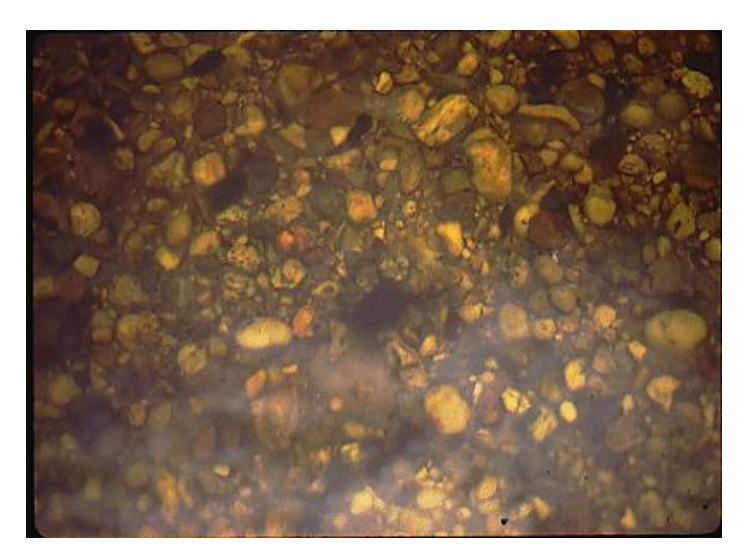






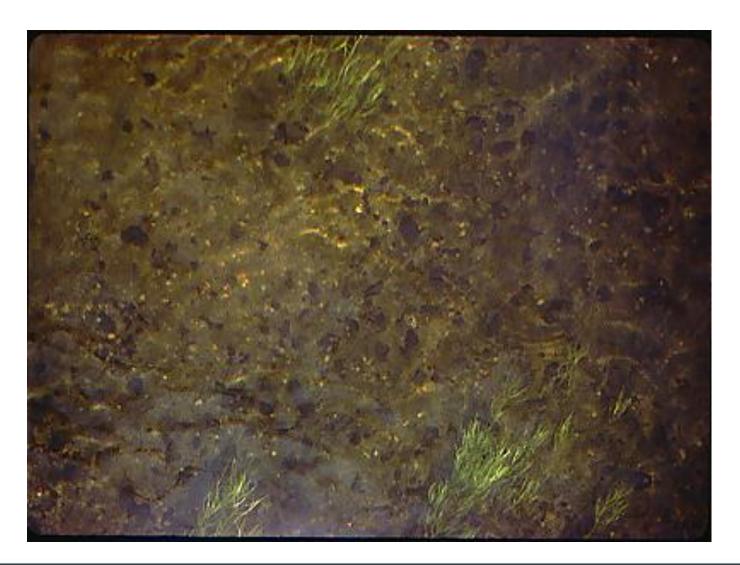






















Percent Shading – Rated based on degree and duration of shading at a site throughout the day

7. Shading^(g)
Percentage of segment that is shaded (duration is considered in scoring). 0% = fully exposed to sunlight all day in summer; 100% = fully and densely shaded all day in summer

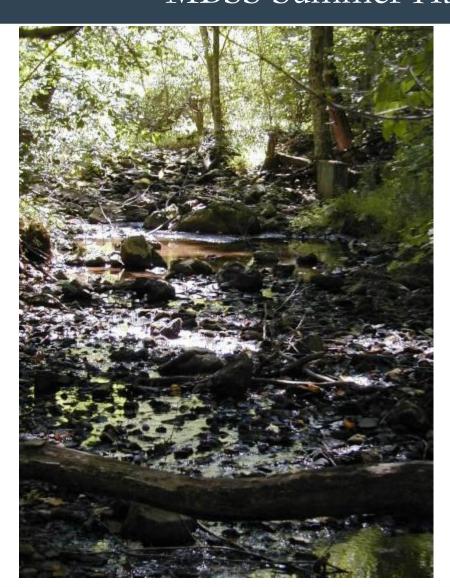






















MBSS Habitat Certification Data Sheet

APPLICANT:	ORGANIZATION:	DATE:
Extent (m) 2.	HABITAT ASSESSMENT Instream Habitat (0-20)	RIPARIAN VEGETATION (facing upstream) LEFT BANK RIGHT BAI Width (50m max)
3 - severe Average Height (m) BAR FORMATION &	Pool/Glide/Eddy Quality (0-20) Extent (m)	Adjacent Land Cover Vegetation Type
2 - mod 3 - severe Sand	Extent (m)	Buffer Breaks (Y/N) LEFT BANK RIGHT BAI Storm Drain Tille Drain Impervious Drainage Gully
A = Absent P = Pres Braided Gr Riffle Sa Run/Glide Si Deep Pool (>= 0.5m) Co		Buffer Break Types
Maximum Depth (cm) Woody Debris No. of Instream Woody Debris	СНА	NNELIZATION e of Channel Straightening or Dredging (Y/N)
No. of Dewatered Woody Debris No. of Instream Rootwads No. of Dewatered Rootwads	TYPE Concrete [Gabion [Rip-Rap	EXTENT (m) EFT BANK BOTTOM RIGHT BANK

MBSS Summer Habitat Data Sheet

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A = Absent P =	= Present	E = Extensive
Braided	Gravel	Boulder >2m
Riffle	Sand	Boulder <2m
Run/Glide	Silt/Clay	Beaver Pond
Deep Pool (>= 0.5m)	Cobble	Overhead Cove
Shallow Pool (< 0.5m)	Bedrock	Undercut Bank
Maximum Depth (cm)	_	Orange Floc





MBSS Habitat Certification Data Sheet

APPLICANT:	ORGANIZATION:	DATE:		
BANK EROSION Left Bank Right Bank Extent (m)	1. Instream Habitat (0-20)	(facing upstream)		
Severity	Epifaunal Substrate (0-20)	LEFT BANK RIGHT BANK Width (50m max) Adjacent Land Cover Vegetation Type Buffer Breaks (Y/N)		
Severity	8. Embeddedness (%) · · · · · ·	LEFT BANK RIGHT BANK Storm Drain Tile Drain Impervious Drainage Gully Orchard		
A = Absent P Braided Riffle Run/Glide Deep Pool (>= 0.5m) Shallow Pool (< 0.5m) Maximum Depth (cm)	= Present E = Extensive Gravel Boulder >2m Sand Boulder <2m Sitt/Clay Beaver Pond Cobble Overhead Cov Bedrock Undercut Bank Orange Floc	Crop Pasture New Construction Dirt Road Gravel Road Raw Sewage Railroad Buffer Break Types		
Woody Debris No. of Instream Woody De	shris	ANNELIZATION be of Channel Straightening or Dredging (Y/N)		
No. of Dewatered Woody No. of Instream Rootwads No. of Dewatered Rootwa COMMENTS:	Debris TYPE L	EXTENT (m) EFT BANK BOTTOM RIGHT BANK		

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Woody Debris No. of Instream Woody Debris No. of Dewatered Woody Debris No. of Instream Rootwads No. of Dewatered Rootwads

Large Woody Debris

- 10 cm diameter
- 1.5 m long

Rootwads

- 15 cm DBH

Instream

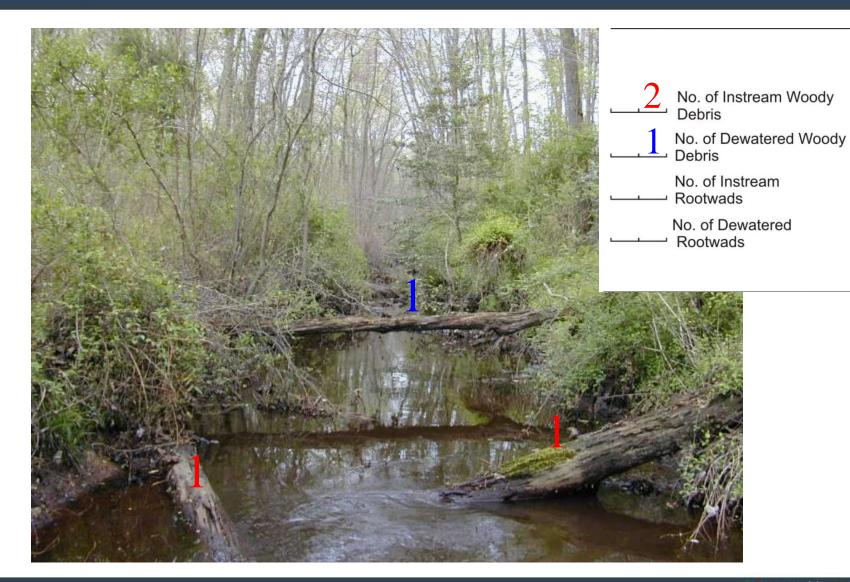
- In direct contact with water

Dewatered

- Potential to enter stream

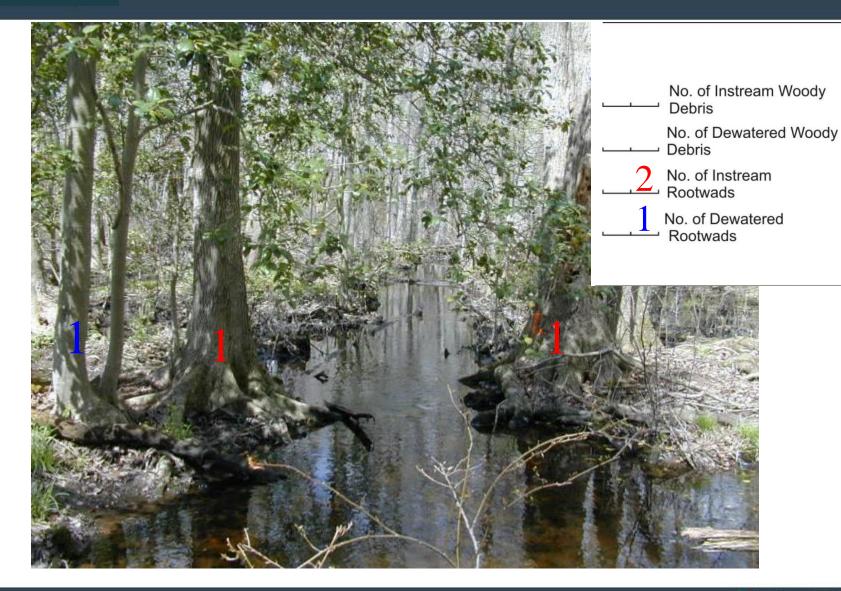
















MBSS Habitat Certification Data Sheet

APPLICANT:	OF	ORGANIZATION:		DATE:		
BANK EROSION Left Bank Right Bank Extent (m)		AT ASSESSMENT			N VEGETA g upstream)	TION
Severity D = none 1 = min 2 = mod 3 = severe	3. Velocity/Depth [Diversity (0-20)	Width (5	0m max)	BANK	RIGHT BAN
Average Height (m) BAR FORMATION & SUBSTRATE	Extent (m	ity (0-20)	Vegetati	on Type		
Cobb Cobb	6. Embeddedness		Storm I		BANK	RIGHT BAI
	Gravel Sand Silt/Clay	Boulder >2m Boulder <2m Beaver Pond	Gully Orchan Crop Pasture	d onstruction ad Road		
Deep Pool (>= 0.5m) Shallow Pool (< 0.5m) Maximum Depth (cm)	Cobble Bedrock	Overhead Co Undercut Bar Orange Floc	153	_	Buffer Break M = minor; S	
Woody Debris No. of Instream Woody De	ebris		ANNELIZA			
No. of Dewatered Woody	599.000 SV	TYPE	ce of Channel	Straightening or Di	redging (Y/N)	
No. of Instream Rootwads		Concrete	LEFT BANK	воттом	RIGHT BANK	
No. of Dewatered Rootwa	ds	Gabion Rip-Rap				
COMMENTS:	Dredge Sp	Earthen Berm poil Off Channel Pipe Culvert		N/A N/A		

MBSS Summer Habitat Data Sheet

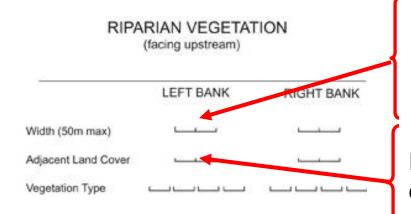
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MARYLAND DEPARTMENT OF NATURAL RESOURCES

MBSS Summer Habitat



Measure the average width of vegetated riparian buffer on each side of stream. (Max width = 50m)

No vegetation = No Buffer

Record the dominant type of land cover directly adjacent to the riparian buffer.

If a non-buffer landcover is encountered within 50m of the stream/site, the buffer ends: record average buffer width to that location and adjacent land cover as the appropriate type encountered

Riparian Buffer vegetation

Adjacent land cover

Riparian Buffer Zone / Adjacent Land Cover Types

FR = Forest

OF = Old Field

EM = Emergent Vegetation

LN = Mowed Lawn

TG = Tall Grass

LO = Logged Area

SL = Bare Soil

RR = Railroad

PV = Paved Road

PK = Parking Lot / Industrial /

Commerical

GR = Gravel Road

DI = Dirt Road

PA = Pasture

OR = Orchard

CP = Cropland

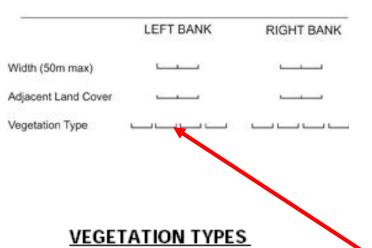
HO = Housing





RIPARIAN VEGETATION

(facing upstream)



G= Grasses/Forbes

R= Regen Deciduous/Shrubs (<4'dbh)

Y= Young Deciduous (4-12" DBH)

M= Mature Deciduous (12-24" DBH

O= Old Deciduous (>24" DBH)

A= Regen Coniferous (<4" DBH)

B= Young Coniferous (4-12" DBH)

C= Mature Coniferous (12-24' DBH

D= Old Coniferous (>24" DBH)

L= Lawn

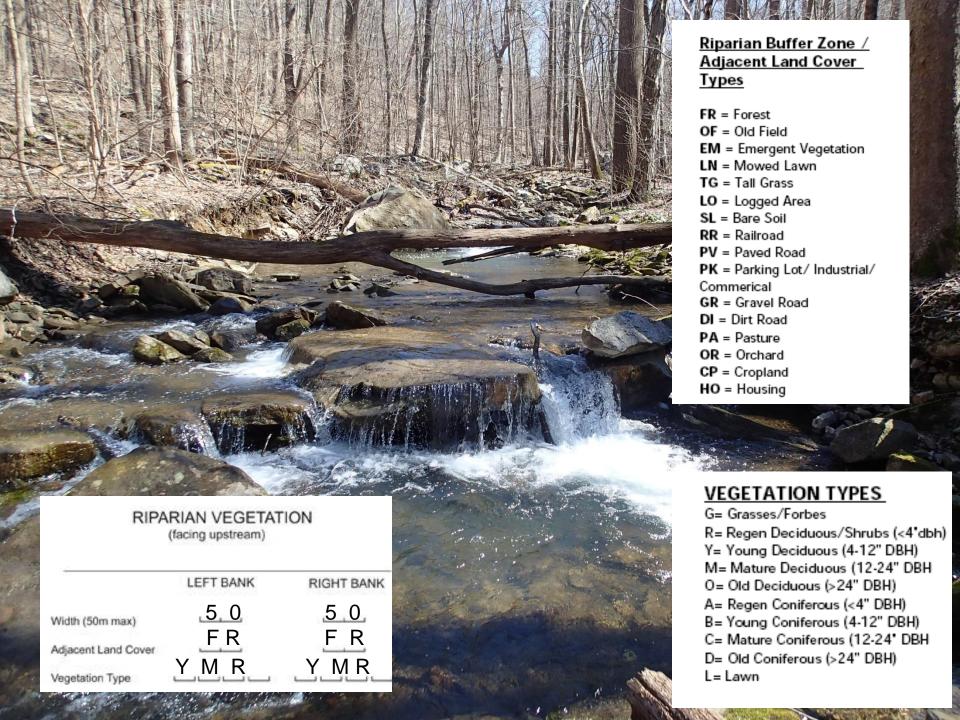
Record the dominant vegetation in the buffer

List vegetation type in order of dominance

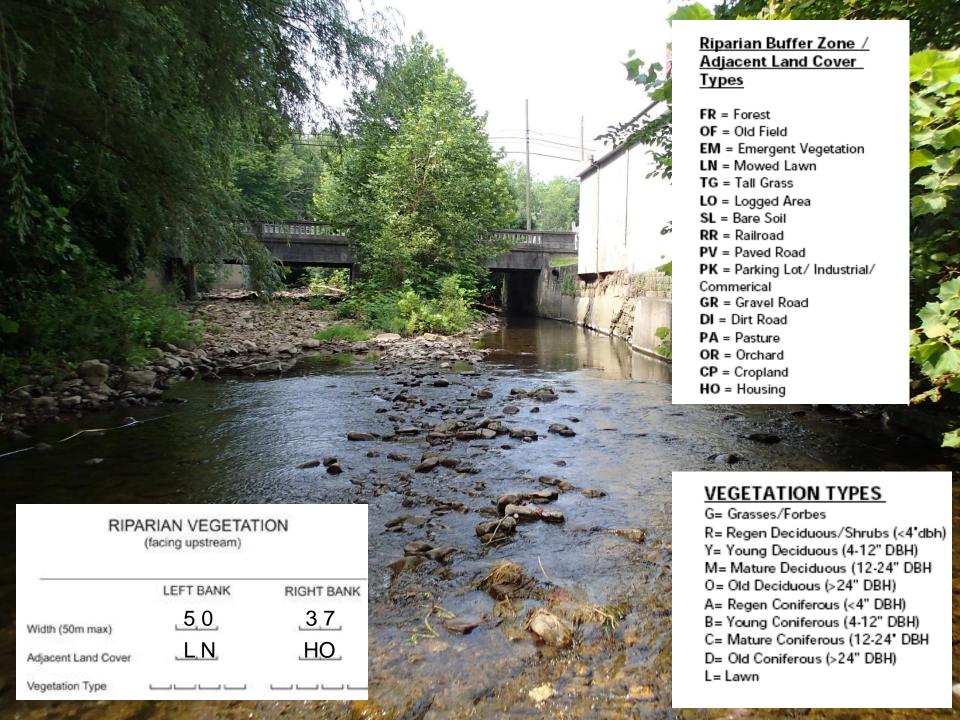
Dominance based on combination of stem density and canopy density.



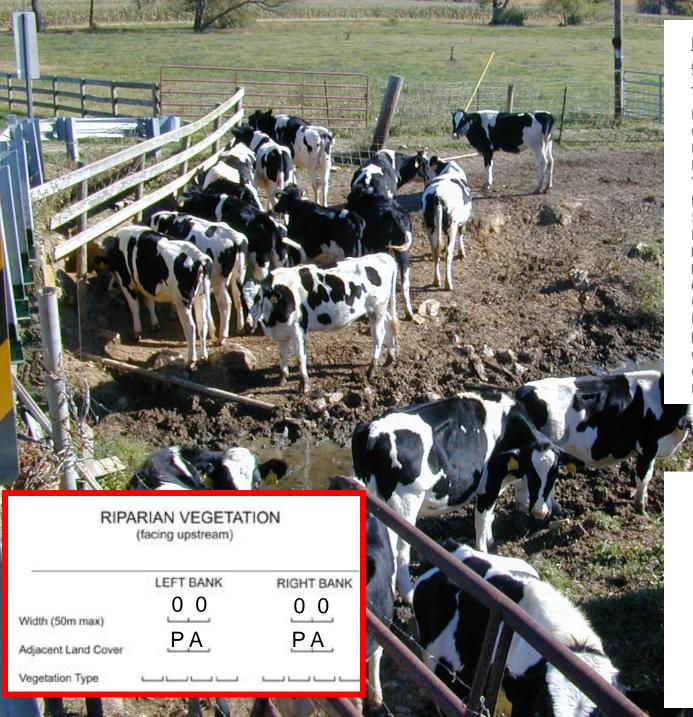












Riparian Buffer Zone / Adjacent Land Cover Types

FR = Forest

OF = Old Field

EM = Emergent Vegetation

LN = Mowed Lawn

TG = Tall Grass

LO = Logged Area

SL = Bare Soil

RR = Railroad

PV = Paved Road

PK = Parking Lot/ Industrial/

Commerical

GR = Gravel Road

DI = Dirt Road

PA = Pasture

OR = Orchard

CP = Cropland

HO = Housing

VEGETATION TYPES

G= Grasses/Forbes

R= Regen Deciduous/Shrubs (<4'dbh)

Y= Young Deciduous (4-12" DBH)

M= Mature Deciduous (12-24" DBH

O= Old Deciduous (>24" DBH)

A= Regen Coniferous (<4" DBH)

B= Young Coniferous (4-12" DBH)

C= Mature Coniferous (12-24' DBH

D= Old Coniferous (>24" DBH)

L= Lawn



	LEFT BANK	RIGHT BANK
Width (50m max)		
Adjacent Land Cover		
Vegetation Type		
Buffer Breaks (Y/N)	LEFT BANK	RIGHT BANK
Storm Drain	<u> </u>	
Tile Drain		
Impervious Draina	ge	
Gully		
Orchard		
Crop		
Pasture		
New Construction		
Dirt Road		
Gravel Road		
Raw Sewage Railroad		V 142-251 AVENUES 151

Buffer Breaks

Note any functional breaks in the riparian buffer on each side of the stream.

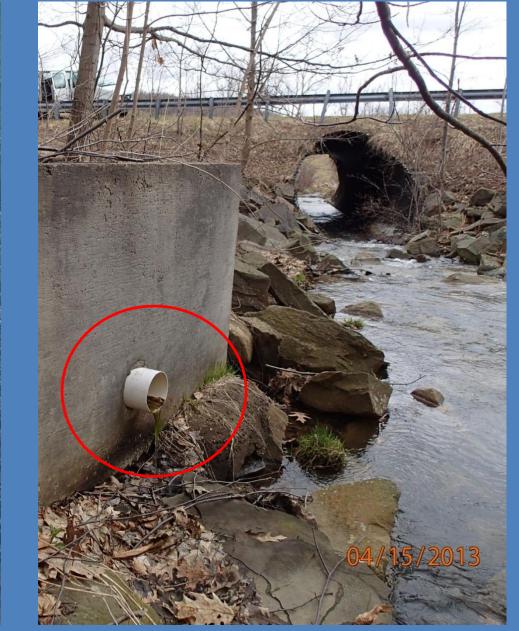
Indicate the type and severity of break.

Buffer Break = anything that conveys runoff to effectively bypass an intact riparian buffer













MBSS Habitat Certification Data Sheet

APPLICANT:	ORGANIZATION:		DATE:		
BANK EROSION Left Bank Right Bank Extent (m) Severity 0 - none	HABITAT AS: 1. Instream Habitat (0-20). 2. Epifaunal Substrate (0-2). 3. Velocity/Depth Diversity	0)		RIAN VEGETA (facing upstream)	RIGHT BANK
2 - mod 3 - severe Average Height (m) BAR FORMATION & SUBSTRATE	4. Pool/Gilde/Eddy Quality (0-20) Extent (m)		Width (50m max)		
Cobble C	Extent (m) 6. Embeddedness (%) 7. Shading (%)		Buffer Breaks (Y/N) I Storm Drain Tile Drain Impervious Drainage Gully Orchard	EFT BANK	
A = Absent P = P Braided Riffle Run/Glide Deep Pool (>= 0.5m) Shallow Pool (< 0.5m) Maximum Depth (cm)	Sand Silt/Clay Cobble Bedrock	ensive Boulder >2m Boulder <2m Beaver Pond Overhead Cover Undercut Bank Orange Floc	Crop Pasture New Construction Dirt Road Gravel Road Raw Sewage Railroad	Buffer Break (M = minor; S =	Types
Woody Debris No. of Instream Woody Debris No. of Dewatered Woody Debris No. of Instream Rootwads No. of Dewatered Rootwads	C		Channel Straightening EXTENT: BANK BOTTOM	2 24 8	
COMMENTS:	Earthe Dredge Spoil Off (Rip-Rap on Berm Channel Culvert	N/A N/A		

MBSS Summer Habitat Data Sheet

- Bank Erosion
- Bar Formation
- Habitat Assessment
- Stream Character
- Woody Debris
- Riparian Vegetation
- Channelization





CHANNELIZATION Evidence of Channel Straightening or Dredging (Y/N) TYPE EXTENT (m) LEFT BANK BOTTOM RIGHT BANK Concrete Gabion Rip-Rap Earthen Berm Dredge Spoil Off Channel Pipe Culvert

- Survey site for evidence of channel dredging or straightening and
- Indicate presence (Y) or absence (N).
- Indicate the type and linear extent in meters for each bank and for the stream bottom.







Dredge Spoils



Concrete Channel







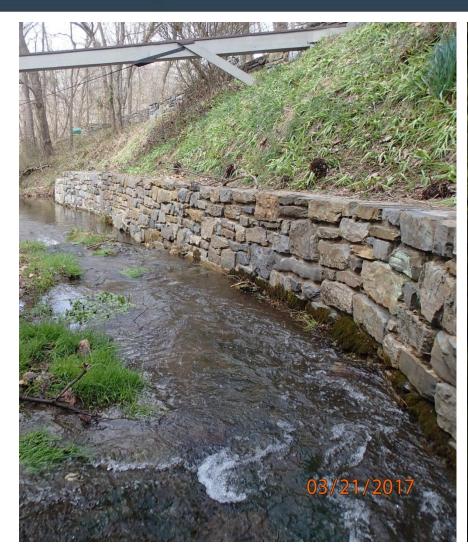


Gabion

Rip rap









Stone / Imbricated Wall

Culvert





MBSS Habitat Certification Data Sheet

	See Habitat Coltinoatio	II Data Giloot			
APPLICANT: BANK EROSION Left Bank Right Bank Extent (m) Severity 0 - none 1 - min 2 - mod 3 - severe Cobbie Gravel Sand Sitt/Clay	ORGANIZATION: HABITAT ASSESSMENT 1. Instream Habitat (0-20)	DATE: RIPARIAN VEGETATION (facing upstream) LEFT BANK RIGHT BANK Width (50m max) Adjacent Land Cover Vegetation Type Buffer Breaks (Y/N) LEFT BANK RIGHT BANK Storm Drain Tile Drain Impervious Drainage Gully	R P 15 12 14 12 14	erosran L/R 0 0 6 14 18 15 24 29	Channel: L B 0 0 24 14 16 2 40 16
A = Absent P = Pi	HARACTER resent E = Extensive Gravel Boulder >2m Boulder <2m Boulder <2m Beaver Pond Cobble Overhead Cover Bedrock Undercut Bank Orange Floc	Orchard Crop Pasture New Construction Dirt Road Gravel Road Raw Sewage Railroad Buffer Break Types (M = minor; S = severe)	41/41 5 Wood: 3		
Woody Debris No. of Instream Woody Debris No. of Dewatered Woody Debris No. of Instream Rootwads No. of Dewatered Rootwads COMMENTS:	Evidence of	PELIZATION f Channel Straightening or Dredging (Y/N) EXTENT (m) BANK BOTTOM RIGHT BANK N/A	Droot \ O		Max 3/42





MBSS Habitat Certification Data Sheet APPLICANT: ORG/ DATE: HABITAT ASSESSMENT RIPARIAN VEGETATION BANK EROSION (facing upstream) Left Bank Right Bank Instream Habitat (0-20). Extent (m) 2. Epifaunal Substrate (0-20)-LEFT BANK RIGHT BANK Severity 0 - none 1 - min 3. Velocity/Depth Diversity (0-20) Width (50m max) 2 - mod 3 = severe Pool/Glide/Eddy Quality (0-20) Adjacent Land Cover Extent (m) --Vegetation Type **BAR FORMATION &** 5. Riffle/Run Quality (0-20) SUBSTRATE Buffer Breaks (Y/N) Cobble Extent (m)-LEFT BANK RIGHT BANK 0 - none Gravel 1 = min 2 = mod 6 Embeddedness (%).... Sand Storm Drain Tile Drain Silt/Clay Shading (%)... Impervious Drainage Gully STREAM CHARACTER Orchard A = Absent P = Present F = Extensive Crop Pasture Braided Gravel Boulder >2m New Construction Dirt Road Riffle Boulder <2m Sand Gravel Road Run/Glide Silt/Clay Beaver Pond Raw Sewage Deep Pool (>= 0.5m) Overhead Cover Buffer Break Types Shallow Pool (< 0.5m) Bedrock Undercut Bank (M = minor: S = severe) Orange Floc Maximum Depth (cm) Woody Debris CHANNELIZATION No. of Instream Woody Debris Evidence of Channel Straightening or Dredging (Y/N) No. of Dewatered Woody Debris TYPE EXTENT (m) LEFT BANK воттом RIGHT BANK No of Instream Rootwads Concrete No. of Dewatered Rootwads Gabion Rip-Rap Earthen Berm COMMENTS: Dredge Spoil Off Channel NA Pipe Culvert

Make Comments!

- Any impacts
 associated with habitat
 conditions at a site
 should be documented
 in the comments section
- Subjective nature of habitat data makes comments valuable

