

River Basin Weymouth Weir Stream Name Accord Brook Unique ID \_\_\_\_\_  
 Investigator(s) Matt R., J.B., AM, DC Start Time: 10:15 End Time: 11:30  
 Describe site Location: Prospect St. (upst.)  
Hingham

RECONNAISSANCE | HABITAT | INVERTEBRATE | FISH | ALGAE | WATER QUALITY | FLOW |

## GEOMORPHOLOGY CHARACTERIZATION

## • Channel Type

- ☐ Riffle-pool ☐ Bedrock  
☐ Dune-ripple ☐ Plane bed  
☐ Step-pool ☐ Braided  
☐ Cascade ☐ Alluvial fans

## RIPARIAN ZONE INSTREAM FEATURES

## • Surrounding Land Use

- \_\_\_\_ % Forest  
 \_\_\_\_ % Field/Pasture  
 \_\_\_\_ % Agriculture  
100 % Residential  
 \_\_\_\_ % Commercial  
 \_\_\_\_ % Industrial  
 \_\_\_\_ % Other

• Canopy Cover 43 %

## • Densimeter (EPA 0-17) \_\_\_\_; OR

## • Local Water Erosion

- ☒ None  
☐ Slight  
☐ Moderate  
☐ Heavy

• High Water Mark 6.2m

- Dam present ☐ Yes ☒ No  
 • Channelized ☒ Yes ☐ No

• Est. avg. Stream Width 2.5 m; range: \_\_\_\_\_

## • Est. avg. Stream Depth

- ♦ Riffle 0.2 m; range: \_\_\_\_\_  
 ♦ Run 0.2 m; range: \_\_\_\_\_  
 ♦ Pool 0.2 m; range: \_\_\_\_\_

## • Velocity

- \_\_\_\_ m/s @ deployment  
 \_\_\_\_ m/s @ recovery

## • Est. Fish Reach Length \_\_\_\_\_ m

## Local Watershed NPS Pollution

- ☒ No evidence  
☐ some potential sources: \_\_\_\_\_  
☐ Obvious sources: \_\_\_\_\_

## SEDIMENT/SUBSTRATE

## • Odors

- ☐ None/normal  
☒ Anaerobic  
☐ Chemical  
☐ Petroleum  
☐ Sewage  
☐ Other

## • Deposits

- ☒ None  
☐ Paper fiber  
☐ Sand  
☐ Sawdust  
☐ Sludge  
☐ Other

## • Oils

- ☒ None  
☐ Slight  
☐ Moderate  
☐ Profuse  
☐ Relict Shells  
☐ Other

INORGANIC SUBSTRATE COMPONENTS		% Composition in Sampling:	
Substrate	Size (Minshall 1984)	Area	Reach
Bedrock		____ %	____ %
Boulder	> 256 mm (10 in)	<u>25</u> %	<u>25</u> %
Cobble	64-256 mm (2.5-10 in)	<u>55</u> %	<u>55</u> %
Pebble	16-64 mm (0.6-2.5 in)	____ %	____ %
Gravel	2-16 mm (0.1-0.6 in)	<u>15</u> %	<u>15</u> %
Sand	0.06-2 mm (gritty)	<u>5</u> %	<u>5</u> %
Silt	0.004-0.06 mm	____ %	____ %
Clay	< 0.004 mm (slick)	____ %	____ %

## WATER CHARACTER

## • Water Odors

- ☒ Normal/None  
☐ Chemical  
☐ Fish  
☐ Petroleum  
☐ Sewage  
☐ Other

## • Water Surface Oils

- ☒ None  
☐ Flecks  
☐ Globbs  
☐ Slick/Sheen

## • Water Color

reddish-brown

## • Turbidity (if not measured)

- ☒ Clear  
☐ Slight  
☐ Moderate  
☐ Severe (opaque)

Marl or travertine? ☐ present

ORGANIC SUBSTRATE COMPONENTS		
Substrate	Characteristic	% Comp. in sample reach
Detritus	Sticks, wood, coarse plant material (CPOM)	<u>100</u> %
Muck-Mud	Black, very fine organics (FPOM)	____ %

HabSamp ID#: 2009028

BenSamp ID#(s): 2009028

Date

17 July 2009

Station

ACC003

## • Weather Conditions:

♦ Now

☐ Rain/sleet/snow☐ cloud cover high haze %♦ Antecedent Period Ppt. Amount (data from <http://www.erh.noaa.gov/box/dailystns.shtml>)

24 h—

7 d—

## How were samples collected?

☒ wading☐ from bank☐ from boat

## • Riparian vegetation (18 m buffer)

Record dominant species present and % area covered

40 % trees - red maple, red oak, ash,50 % shrubs & vines - green briar, ~~clover~~, ~~Rh. rad.~~, ~~Va. creeper~~, ~~bittersweet~~50 % herbaceous - jwl. wd., grasses, ~~Peltandra~~• Aquatic vegetation (coverage within reach: 90 %)

Record dominant spp. and % composition (should = 100%)

\_\_\_\_\_ % rooted emergent

\_\_\_\_\_ % rooted submergent

\_\_\_\_\_ % rooted floating Callitriche

\_\_\_\_\_ % free floating

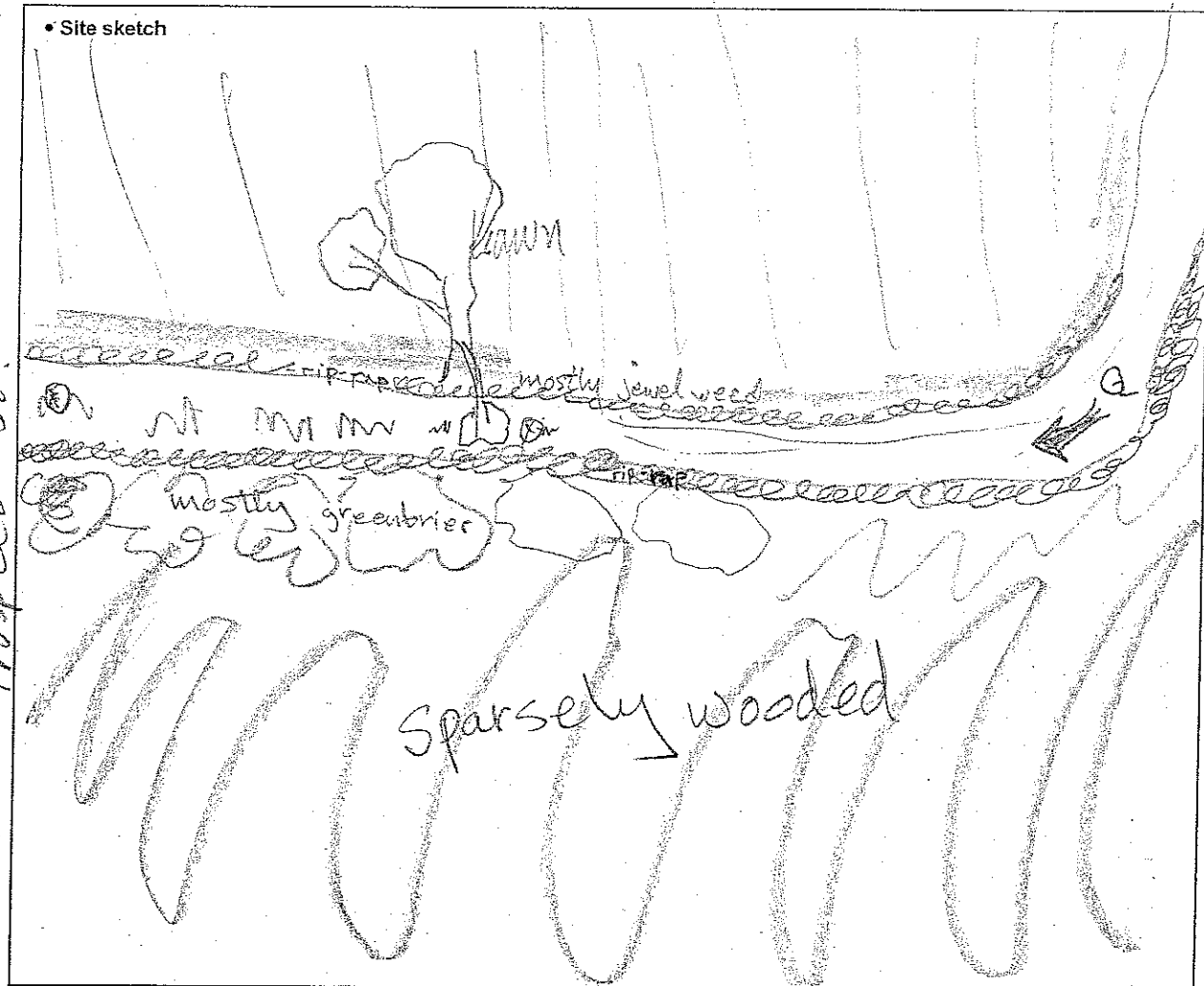
98 % mosses• Algae (coverage within reach: 0 %)

## • Number of algae samples taken:

Forms	Color			Substrate				Microhabitat		
	Green	Brown	Other	Rock	Wood	Plant	Other	Pool	Riffle	Other
<input type="checkbox"/> filamentous	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		%	%	
<input type="checkbox"/> flock	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		%	%	
<input type="checkbox"/> thin film	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		%	%	
<input type="checkbox"/> other	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		%	%	

	Riffles	Snags	Stream Banks	Submerged Macrophytes	Other
• Number of jabs/kicks in ea. habitat type:	<u>10</u>				
• habitat types by % of sample reach	<u>30</u> %	<u>20</u> %		<u>50</u> %	

## • Site sketch

Date 17 July 2009

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ACC B03

Investigator(s): MR, A, JB, DC, AMRiver Basin: Weymouth/WeirStream Name: Accord Brook

Saris#: \_\_\_\_\_

Describe site location: Prospect St.Hingham

Scoring for wadable riffle/run dominated streams (moderate to high gradient) with velocities approx. 30 cm/s or greater.

Habitat Parameter	Category																				
	Optimal					Suboptimal					Marginal					Poor					
1. Instream cover (fish)	A mix of submerged logs, undercut banks, rubble, or other stable habitat in > 50% of the sample area.					30-50% of area with a mix of stable habitat; adequate habitat for maintenance of populations.					10-30% of area with a mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.					< 10% of area with a mix of stable habitat; lack of habitat is obvious; substrate unstable or lacking.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
2. Epifaunal Substrate (in sampled area only)	Well-developed riffle and run; riffle is as wide as stream and length extends two times the width of stream; abundance of cobble (Boulders prevalent in headwater streams).					Riffle is as wide as stream but length is < 2X width; abundance of cobble; boulders and gravel common.					Run area may be lacking; riffle not as wide as stream and its length < 2X the stream width; gravel or bedrock prevalent; some cobble present. <i>short riffle stretch weakly gravel.</i>					Riffles or runs virtually nonexistent; bedrock prevalent; cobble lacking.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
3. Embeddedness (riffles/runs)	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment.					Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.					Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.					Gravel, cobble, and boulder particles are > 75% surrounded by fine sediment.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization or dredging may be present but not recent (> 20 y).					New embankments present on both banks; and 40-80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
5. Sediment Deposition	Little or no enlargement of islands or point bars and < 5% of the bottom affected by sediment deposition.					Some new increase in bar formation, mostly from gravel, sand, or fine sediment; 5-30% of the bottom affected; slight deposition in pools.					Moderate deposition of new gravel, sand, or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition in pools prevalent.					Heavy deposits of fine material, increased bar development; > 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

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Habitat Parameter	Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Velocity-Depth Combinations  1. slow deep 2. fast deep 3. slow shallow 4. fast shallow	All 4 velocity/depth patterns present. Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream < 7:1 (generally 5-7); variety of habitat is key. In streams where riffles are continuous, location of boulders or other large, natural obstructions is important.					Only 3 of 4 velocity/depth patterns present. Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.					Only 2 velocity/depth patterns present; usually lacking deep areas. Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.					Dominated by one velocity/depth pattern. Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of > 25.					
4	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Channel Flow Status  18	Water reaches the base of both banks, and minimal amount of channel substrate is exposed.					Water fills > 75% of the available channel; or < 25% of channel 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.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Vegetative Protection (score each bank) Note: Determine left or right side by facing downstream.	More than 90% of the streambank surfaces covered by naturally occurring vegetation, including trees, understory shrubs, or nonwoody macrophytes; 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 naturally occurring 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 cm or less in average stubble height.					
SCORE 10	Left bank					8					5					2					
SCORE 10	Right bank					8					5					2					
9. Bank Stability (score each bank)	Banks stable; evidence of erosion of bank failure absent or minimal; little potential for future problems. < 5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential 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 10	Left bank					8					5					2					
SCORE 10	Right bank					8					5					2					
10. Riparian Vegetative Zone Width (score each side)	Width of riparian zone > 18 m; human activities (e.g., parking lots, roadbeds, clear-cuts, lawns, crops, etc.) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 m; human activities have impacted zone a great deal.					Width of riparian zone < 6 m; little or no riparian vegetation due to human activities.					
SCORE 10	Left zone					8					5					2					
SCORE 1	Right zone					8					5					2					

TOTAL  
SCORE

Comments:

Date 17 July 2009

Station ACC 803