

Metrics Report

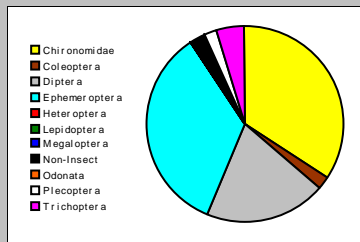
Project ID: BWTF05GR
 RAI No.: BWTF05GR001
 Sta. Name: GALLATIN RIVER BELOW TAYLOR FORK CONFLUENCE
 Client ID: GTF0705
 STORET ID
 Coll. Date: 7/7/2005

Abundance Measures

Sample Count: 319
 Sample Abundance: 1,234.84 25.83% of sample used
 Total Abundance: 1,660.86
 Coll. Procedure:
 Sample Notes:

Taxonomic Composition

Category	R	A	PRA
Non-Insect	1	9	2.82%
Odonata			
Ephemeroptera	8	110	34.48%
Plecoptera	3	6	1.88%
Heteroptera			
Megaloptera			
Trichoptera	6	15	4.70%
Lepidoptera			
Coleoptera	1	6	1.88%
Diptera	6	63	19.75%
Chironomidae	12	110	34.48%

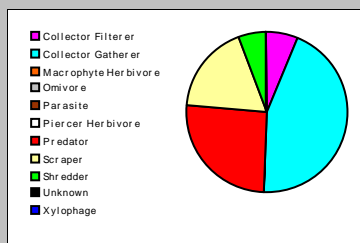


Dominant Taxa

Category	A	PRA
Cladontanvtarsus	41	12.85%
Ceratopogoninae	36	11.29%
Cinyamula	34	10.66%
Orthocladius	26	8.15%
Baetis tricaudatus	24	7.52%
Eukiefferiella	17	5.33%
Atherix	16	5.02%
Ephemerella inermis	13	4.08%
Drunella coloradensis	13	4.08%
Rheotantarsus	9	2.82%
Acari	9	2.82%
Orthocladiinae	8	2.51%
Simulium	7	2.19%
Glossosoma	7	2.19%
Epeorus longimanus	7	2.19%

Functional Composition

Category	R	A	PRA
Predator	8	84	26.33%
Parasite			
Collector Gatherer	15	140	43.89%
Collector Filterer	4	20	6.27%
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	6	57	17.87%
Shredder	4	18	5.64%
Omnivore			
Unknown			

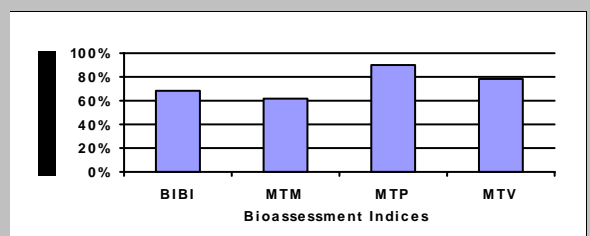


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	37	3	3		3
Non-Insect Percent	2.82%				
E Richness	8	3		3	
P Richness	3	1		2	
T Richness	6	3		3	
EPT Richness	17		3		2
EPT Percent	41.07%		2		1
Oligochaeta+Hirudinea Percent					
Baetidae/Ephemeroptera	0.255				
Hydropsychidae/Trichoptera	0.067				
<i>Dominance</i>					
Dominant Taxon Percent	12.85%		3		3
Dominant Taxa (2) Percent	24.14%				
Dominant Taxa (3) Percent	34.80%	5			
Dominant Taxa (10) Percent	71.79%				
<i>Diversity</i>					
Shannon H (loge)	2.921				
Shannon H (log2)	4.214		3		
Margalef D	6.315				
Simpson D	0.072				
Evenness	0.049				
<i>Function</i>					
Predator Richness	8		3		
Predator Percent	26.33%	5			
Filterer Richness	4				
Filterer Percent	6.27%			2	
Collector Percent	50.16%		3		3
Scraper+Shredder Percent	23.51%		2		0
Scraper/Filterer	2.850				
Scraper/Scraper+Filterer	0.740				
<i>Habit</i>					
Burrower Richness	2				
Burrower Percent	11.60%				
Swimmer Richness	2				
Swimmer Percent	8.78%				
Clinger Richness	18	3			
Clinger Percent	38.56%				
<i>Characteristics</i>					
Cold Stenotherm Richness	3				
Cold Stenotherm Percent	2.19%				
Hemoglobin Bearer Richness					
Hemoglobin Bearer Percent					
Air Breather Richness	2				
Air Breather Percent	0.63%				
<i>Voltinism</i>					
Univoltine Richness	18				
Semivoltine Richness	4	3			
Multivoltine Percent	46.08%		2		
<i>Tolerance</i>					
Sediment Tolerant Richness	2				
Sediment Tolerant Percent	0.63%				
Sediment Sensitive Richness	1				
Sediment Sensitive Percent	2.19%				
Metals Tolerance Index	3.377				
Pollution Sensitive Richness	4	5		3	
Pollution Tolerant Percent	19.75%	3		1	
Hilsenhoff Biotic Index	4.271		3		1
Intolerant Percent	28.53%				
Supertolerant Percent	5.33%				
CTQa	65.125				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	34	68.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	27	90.00%	None
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	14	77.78%	Slight
MTM	Montana DEQ Mountains (Bukantis 1998)	13	61.90%	Slight



Metrics Report

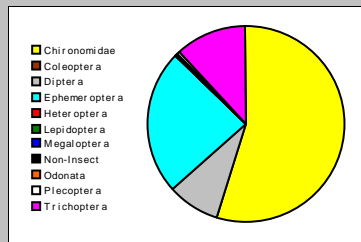
Project ID: BWTF05GR
RAI No.: BWTF05GR002
Sta. Name: GALLATIN RIVER BELOW PORCUPINE CREEK TRAILHEAD
Client ID: GPORC0705
STORET ID
Coll. Date: 7/8/2005

Abundance Measures

Sample Count: 324
Sample Abundance: 2,160.00 15.00% of sample used
Total Abundance: 2,905.20
Coll. Procedure:
Sample Notes:

Taxonomic Composition

Category	R	A	PRA
Non-Insect	1	1	0.31%
Odonata			
Ephemeroptera	6	78	24.07%
Plecoptera	1	2	0.62%
Heteroptera			
Megaloptera			
Trichoptera	7	38	11.73%
Lepidoptera			
Coleoptera	1	1	0.31%
Diptera	5	28	8.64%
Chironomidae	10	176	54.32%

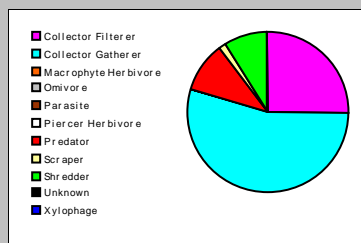


Dominant Taxa

Category	A	PRA
Eukiefferiella	90	27.78%
Rheotanytarsus	41	12.65%
Drunella coloradensis	25	7.72%
Brachycentrus americanus	22	6.79%
Baetis tricaudatus	16	4.94%
Simulium	15	4.63%
Cricotopus	13	4.01%
Ephemerella inermis	12	3.70%
Orthocladiinae	10	3.09%
Serratella tibialis	8	2.47%
Caudatella heterocaudata	8	2.47%
Baetis	8	2.47%
Antocha	7	2.16%
Cladotanytarsus	6	1.85%
Amiocentrus aspilus	5	1.54%

Functional Composition

Category	R	A	PRA
Predator	6	34	10.49%
Parasite			
Collector Gatherer	12	174	53.70%
Collector Filterer	6	83	25.62%
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	3	4	1.23%
Shredder	4	29	8.95%
Omnivore			
Unknown			

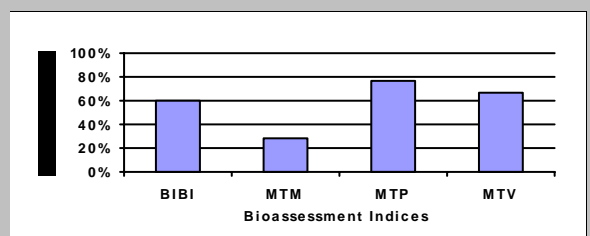


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	31	3	3		3
Non-Insect Percent	0.31%				
E Richness	6	3		3	
P Richness	1	1		1	
T Richness	7	3		3	
EPT Richness	14		3		0
EPT Percent	36.42%		2		0
Oligochaeta+Hirudinea Percent	0.31%				
Baetidae/Ephemeroptera	0.308				
Hydropsychidae/Trichoptera	0.079				
<i>Dominance</i>					
Dominant Taxon Percent	27.78%		3		2
Dominant Taxa (2) Percent	40.43%				
Dominant Taxa (3) Percent	48.15%	5			
Dominant Taxa (10) Percent	77.78%				
<i>Diversity</i>					
Shannon H (loge)	2.528				
Shannon H (log2)	3.647		3		
Margalef D	6.002				
Simpson D	0.124				
Evenness	0.075				
<i>Function</i>					
Predator Richness	6		3		
Predator Percent	10.49%	3			
Filterer Richness	6				
Filterer Percent	25.62%			0	
Collector Percent	79.32%		2		1
Scraper+Shredder Percent	10.19%		1		0
Scraper/Filterer	0.048				
Scraper/Scraper+Filterer	0.046				
<i>Habit</i>					
Burrower Richness	2				
Burrower Percent	0.62%				
Swimmer Richness	1				
Swimmer Percent	7.41%				
Clinger Richness	17	3			
Clinger Percent	51.23%				
<i>Characteristics</i>					
Cold Stenotherm Richness	1				
Cold Stenotherm Percent	2.47%				
Hemoglobin Bearer Richness					
Hemoglobin Bearer Percent					
Air Breather Richness	2				
Air Breather Percent	2.47%				
<i>Voltinism</i>					
Univoltine Richness	17				
Semivoltine Richness	3	3			
Multivoltine Percent	61.73%		1		
<i>Tolerance</i>					
Sediment Tolerant Richness	2				
Sediment Tolerant Percent	2.47%				
Sediment Sensitive Richness	1				
Sediment Sensitive Percent	0.31%				
Metals Tolerance Index	4.739				
Pollution Sensitive Richness	2	1		2	
Pollution Tolerant Percent	3.09%	5		3	
Hilsenhoff Biotic Index	5.022		2		0
Intolerant Percent	24.38%				
Supertolerant Percent	29.01%				
CTQa	67.643				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	30	60.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	23	76.67%	Slight
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	12	66.67%	Slight
MTM	Montana DEQ Mountains (Bukantis 1998)	6	28.57%	Moderate



Metrics Report

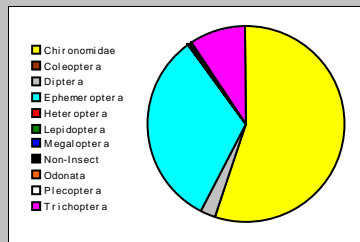
Project ID: BWTF05GR
RAI No.: BWTF05GR003
Sta. Name: GALLATIN RIVER D/S DUDLY CK CONFLUENCE U/S OF JACK SMITH BRIDGE
Client ID: GDUD0705
STORET ID
Coll. Date: 7/8/2005

Abundance Measures

Sample Count: 326
Sample Abundance: 1,029.47 31.67% of sample used
Total Abundance: 1,384.64
Coll. Procedure:
Sample Notes:

Taxonomic Composition

Category	R	A	PRA
Non-Insect	2	2	0.61%
Odonata			
Ephemeroptera	8	106	32.52%
Plecoptera			
Heteroptera			
Megaloptera			
Trichoptera	7	31	9.51%
Lepidoptera			
Coleoptera			
Diptera	5	8	2.45%
Chironomidae	8	179	54.91%

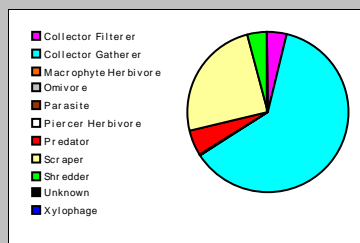


Dominant Taxa

Category	A	PRA
Orthocladius	65	19.94%
Cinygmula	63	19.33%
Potheadia	33	10.12%
Cladotanytarsus	30	9.20%
Orthoclaudiinae	23	7.06%
Baetis tricaudatus	16	4.91%
Chironomidae	13	3.99%
Lepidostoma	10	3.07%
Drunella coloradensis	10	3.07%
Neophylax occidentis	9	2.76%
Eukiefferiella	8	2.45%
Serratella tibialis	6	1.84%
Brachycentrus occidentalis	6	1.84%
Rheotanytarsus	4	1.23%
Ephemerella inermis	4	1.23%

Functional Composition

Category	R	A	PRA
Predator	6	17	5.21%
Parasite	1	1	0.31%
Collector Gatherer	11	200	61.35%
Collector Filterer	5	14	4.29%
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	5	80	24.54%
Shredder	2	14	4.29%
Omnivore			
Unknown			

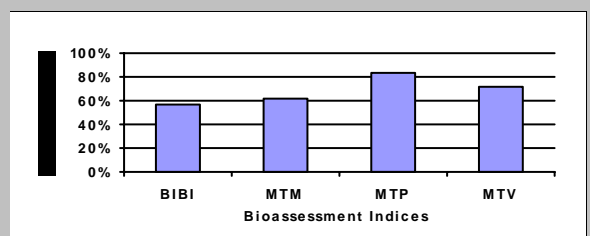


Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	30	3	3		3
Non-Insect Percent	0.61%				
E Richness	8	3		3	
P Richness	0	1		0	
T Richness	7	3		3	
EPT Richness	15		3		1
EPT Percent	42.02%		2		1
Oligochaeta+Hirudinea Percent					
Baetidae/Ephemeroptera	0.151				
Hydropsychidae/Trichoptera	0.065				
<i>Dominance</i>					
Dominant Taxon Percent	19.94%		3		3
Dominant Taxa (2) Percent	39.26%				
Dominant Taxa (3) Percent	49.39%	5			
Dominant Taxa (10) Percent	83.44%				
<i>Diversity</i>					
Shannon H (loge)	2.478				
Shannon H (log2)	3.576		3		
Margalef D	5.118				
Simpson D	0.128				
Evenness	0.068				
<i>Function</i>					
Predator Richness	6		3		
Predator Percent	5.21%	1			
Filterer Richness	5				
Filterer Percent	4.29%			3	
Collector Percent	65.64%		2		2
Scraper+Shredder Percent	28.83%		2		1
Scraper/Filterer	5.714				
Scraper/Scraper+Filterer	0.851				
<i>Habit</i>					
Burrower Richness	2				
Burrower Percent	1.23%				
Swimmer Richness	2				
Swimmer Percent	5.21%				
Clinger Richness	15	3			
Clinger Percent	35.89%				
<i>Characteristics</i>					
Cold Stenotherm Richness	1				
Cold Stenotherm Percent	2.76%				
Hemoglobin Bearer Richness					
Hemoglobin Bearer Percent					
Air Breather Richness	2				
Air Breather Percent	0.92%				
<i>Voltinism</i>					
Univoltine Richness	17				
Semivoltine Richness	3	3			
Multivoltine Percent	60.12%		1		
<i>Tolerance</i>					
Sediment Tolerant Richness	2				
Sediment Tolerant Percent	0.92%				
Sediment Sensitive Richness	2				
Sediment Sensitive Percent	1.23%				
Metals Tolerance Index	3.054				
Pollution Sensitive Richness	2	1			2
Pollution Tolerant Percent	9.20%	5			2
Hilsenhoff Biotic Index	3.837		3		2
Intolerant Percent	43.56%				
Supertolerant Percent	7.06%				
CTQa	64.040				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	28	56.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	25	83.33%	None
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	13	72.22%	Slight
MTM	Montana DEQ Mountains (Bukantis 1998)	13	61.90%	Slight



Metrics Report

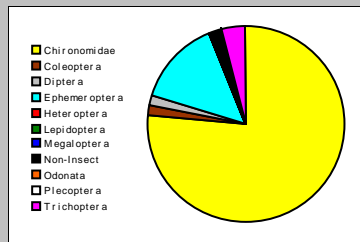
Project ID: BWTF05GR
RAI No.: BWTF05GR004
Sta. Name: WEST FORK U/S OF SPUR ROAD BRIDGE
Client ID: WF0705
STORET ID
Coll. Date: 7/8/2005

Abundance Measures

Sample Count: 318
Sample Abundance: 2,120.00 15.00% of sample used
Total Abundance: 2,851.40
Coll. Procedure:
Sample Notes:

Taxonomic Composition

Category	R	A	PRA
Non-Insect	3	7	2.20%
Odonata			
Ephemeroptera	7	46	14.47%
Plecoptera			
Heteroptera			
Megaloptera			
Trichoptera	7	12	3.77%
Lepidoptera			
Coleoptera	2	4	1.26%
Diptera	2	6	1.89%
Chironomidae	8	243	76.42%

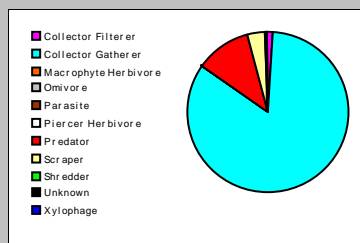


Dominant Taxa

Category	A	PRA
Eukiefferiella	117	36.79%
Orthocladius	80	25.16%
Drunella coloradensis	27	8.49%
Potthastia	12	3.77%
Orthoclaudiinae	11	3.46%
Chironomidae	9	2.83%
Baetis tricaudatus	8	2.52%
Cladotanytarsus	6	1.89%
Paqastia	3	0.94%
Optioservus	3	0.94%
Neophylax occidentis	3	0.94%
Enchytraeidae	3	0.94%
Antocha	3	0.94%
Amiocentrus aspilus	3	0.94%
Acari	3	0.94%

Functional Composition

Category	R	A	PRA
Predator	6	36	11.32%
Parasite			
Collector Gatherer	14	265	83.33%
Collector Filterer	2	4	1.26%
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	5	11	3.46%
Shredder	2	2	0.63%
Omnivore			
Unknown			



Metric Values and Scores

Metric	Value	BIBI	MTP	MTV	MTM
<i>Composition</i>					
Taxa Richness	29	3	3		3
Non-Insect Percent	2.20%				
E Richness	7	3		3	
P Richness	0	1		0	
T Richness	7	3		3	
EPT Richness	14		3		0
EPT Percent	18.24%		1		0
Oligochaeta+Hirudinea Percent	0.94%				
Baetidae/Ephemeroptera	0.217				
Hydropsychidae/Trichoptera	0.083				
<i>Dominance</i>					
Dominant Taxon Percent	36.79%		2		1
Dominant Taxa (2) Percent	61.95%				
Dominant Taxa (3) Percent	70.44%	3			
Dominant Taxa (10) Percent	86.79%				
<i>Diversity</i>					
Shannon H (loge)	1.995				
Shannon H (log2)	2.878		2		
Margalef D	4.924				
Simpson D	0.241				
Evenness	0.082				
<i>Function</i>					
Predator Richness	6		3		
Predator Percent	11.32%	3			
Filterer Richness	2				
Filterer Percent	1.26%			3	
Collector Percent	84.59%		1		0
Scraper+Shredder Percent	4.09%		1		0
Scraper/Filterer	2.750				
Scraper/Scraper+Filterer	0.733				
<i>Habit</i>					
Burrower Richness	0				
Burrower Percent	0.00%				
Swimmer Richness	2				
Swimmer Percent	3.14%				
Clinger Richness	15	3			
Clinger Percent	17.61%				
<i>Characteristics</i>					
Cold Stenotherm Richness	2				
Cold Stenotherm Percent	1.89%				
Hemoglobin Bearer Richness					
Hemoglobin Bearer Percent					
Air Breather Richness	1				
Air Breather Percent	0.94%				
<i>Voltinism</i>					
Univoltine Richness	14				
Semivoltine Richness	3	3			
Multivoltine Percent	80.82%		0		
<i>Tolerance</i>					
Sediment Tolerant Richness	1				
Sediment Tolerant Percent	0.94%				
Sediment Sensitive Richness	2				
Sediment Sensitive Percent	0.94%				
Metals Tolerance Index	5.795				
Pollution Sensitive Richness	2		1		2
Pollution Tolerant Percent	3.77%		5		3
Hilsenhoff Biotic Index	5.708		2		0
Intolerant Percent	17.92%				
Supertolerant Percent	39.62%				
CTQa	66.880				

Bioassessment Indices

BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	28	56.00%	
MTP	Montana DEQ Plains (Bukantis 1998)	18	60.00%	Slight
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	14	77.78%	Slight
MTM	Montana DEQ Mountains (Bukantis 1998)	4	19.05%	Severe

