

Macroinvertebrate Sample Summary

version: 3.0 12/1/2009 10:38:30 AM

Assessment ID: 60137
Station ID: 20081105-1530-kspyker (Latitude: 40.1292, Longitude: -79.2756)
Method: 6-Dframe Composite, 200 subsample
Location: LRUS - Laurel Run upstream of pyrolusite treatment system

Metrics:

Total # Organisms: 112 Hilsenhoff: 4.10 %EPT: 39 FCPRSH: 17
Taxa Richness: 23 Beck3: 20 Beck4: 22 Modified %EPT: 38
Modified Caddis: 4 EPT: 12 %Mayflies: 1 %Dominant: 21
Caddisfly Taxa: 5 Mayfly Taxa: 1 Modified EPT: 11 Modified %Mayflies: 1
%Intol-Limestone: 37 %Tol-Limestone: 13 %Intol-Freestone: 48 %Tol-Freestone: 52
Shannon Diversity: 2.62

Taxa:

Code	Standardized ID Level	Number	Tolerance
1020600000	Heptageniidae	1	3
1040200000	Peltoperlidae	2	2
1040400700	Soyedina	1	0
1040500200	Leuctra	4	0
1040600100	Allocaepnia	2	3
1040600400	Paracapnia	15	1
1040900600	Sweltsa	1	0
1060100100	Sialis	14	6
1060200400	Nigronia	1	2
1080100100	Chimarra	2	4
1080100200	Dolophilodes	6	0
1080400300	Diplectrona	4	0
1081001500	Pycnopsyche	4	4
1081400100	Molanna	2	6
1120200000	Ceratopogonidae	3	6
1121400200	Chrysops	12	7
1121900400	Tipula	6	4
1121901100	Dicranota	1	3
1121901500	Hexatoma	3	2
1121901800	Molophilus	1	4
1121901900	Ormosia	1	6
1122200000	Chironomidae	24	6
11000000000	Oligochaeta	2	10

Habitat:

1 Instream Cover:	5	2 Epifaunal Substrate:	5	
3 Embeddedness:	5	4 Velocity/Depth Regimes:	6	
5 Channel Alterations:	15	6 Sediment Deposition:	11	
7 Frequency of Riffles:	10	8 Channel Flow Status:	10	
9 Condition of Banks:	14	10 Bank Vegetation:	18	Total
11 Grazing or Disruptive:	20	12 Riparian Vegetation:	15	134

Impairment:

Insufficient? Y Impaired? N/A Biology Impaired? N/A
Habitat Impaired? N/A Rock picks influenced? N Impact Localized? N
Designated Use needs reevaluation? N

Comments:

Land Use:
Impairment:

Macroinvertebrate Sample Summary

version: 3.0 12/1/2009 10:39:49 AM

Assessment ID: 60135
Station ID: 20081105-1430-kspyker (Latitude: 40.1318, Longitude: -79.2758)
Method: 6-Dframe Composite, 200 subsample
Location: LRDS - Laurel Run downstream pyrolusite treatment

Metrics:

Total # Organisms: 167 Hilsenhoff: 2.57 %EPT: 50 FCPRSH: 18
Taxa Richness: 26 Beck3: 26 Beck4: 25 Modified %EPT: 49
Modified Caddis: 6 EPT: 12 %Mayflies: 0 %Dominant: 19
Caddisfly Taxa: 7 Mayfly Taxa: 0 Modified EPT: 11 Modified %Mayflies: 0
%Intol-Limestone: 70 %Tol-Limestone: 7 %Intol-Freestone: 78 %Tol-Freestone: 22
Shannon Diversity: 2.71

Taxa:

Code	Standardized ID Level	Number	Tolerance
1040300100	Taeniopteryx	1	2
1040500200	Leuctra	26	0
1040600100	Allocaenia	3	3
1040600400	Paracapia	31	1
1040900600	Sweltsa	1	0
1060100100	Sialis	1	6
1080100200	Dolophilodes	3	0
1080100300	Wormaldia	2	0
1080200100	Lype	1	2
1080400300	Diplectrona	7	0
1080500100	Rhyacophila	4	1
1081300200	Psilotreta	2	0
1081400100	Molanna	2	6
1120200000	Ceratopogonidae	1	6
1121400200	Chrysops	10	7
1121400600	Tabanus	2	5
1121900400	Tipula	10	4
1121901100	Dicranota	10	3
1121901500	Hexatoma	15	2
1121901600	Limnophila	9	3
1121901800	Molophilus	1	4
1121902300	Pseudolimnophila	2	2
1122200000	Chironomidae	10	6
11000000000	Oligochaeta	1	10
13040100100	Cambarus	1	6
13050100100	Caecidotea	11	6

Habitat:

1 Instream Cover:	5	2 Epifaunal Substrate:	8	
3 Embeddedness:	5	4 Velocity/Depth Regimes:	6	
5 Channel Alterations:	20	6 Sediment Deposition:	11	
7 Frequency of Riffles:	5	8 Channel Flow Status:	12	
9 Condition of Banks:	10	10 Bank Vegetation:	15	Total
11 Grazing or Disruptive:	20	12 Riparian Vegetation:	20	137

Impairment:

Insufficient? Y Impaired? N/A Biology Impaired? N/A
Habitat Impaired? N/A Rock picks influenced? N Impact Localized? N
Designated Use needs reevaluation? N

Comments:

Land Use:
Impairment:

Macroinvertebrate Sample Summary

version: 3.0 12/1/2009 10:40:37 AM

Assessment ID: 60133
Station ID: 20081105-1300-kspyker (Latitude: 40.1510, Longitude: -79.2814)
Method: 6-Dframe Composite, 200 subsample
Location: LR at Rt. 381

Metrics:

Total # Organisms: 107 Hilsenhoff: 1.80 %EPT: 72 FCPRSH: 17
Taxa Richness: 23 Beck3: 28 Beck4: 26 Modified %EPT: 69
Modified Caddis: 5 EPT: 16 %Mayflies: 4 %Dominant: 31
Caddisfly Taxa: 8 Mayfly Taxa: 2 Modified EPT: 13 Modified %Mayflies: 4
%Intol-Limestone: 77 %Tol-Limestone: 0 %Intol-Freestone: 87 %Tol-Freestone: 13
Shannon Diversity: 2.46

Taxa:

Code	Standardized ID Level	Number	Tolerance
1020600702	Maccaffertium	2	3
1021200500	Paraleptophlebia	2	1
1040300100	Taeniopteryx	1	2
1040500200	Leuctra	7	0
1040600400	Paracapnia	10	1
1040700400	Acroneuria	2	0
1040801100	Clioperla	1	2
1040900600	Sweltsa	6	0
1060200400	Nigronia	1	2
1080100200	Dolophilodes	1	0
1080100300	Wormaldia	2	0
1080300500	Polycentropus	1	6
1080400300	Diplectrona	33	0
1080400500	Ceratopsyche	1	5
1080400600	Cheumatopsyche	1	6
1080500100	Rhyacophila	1	1
1081001500	Pycnopsyche	6	4
1101000200	Psephenus	1	4
1101300800	Oulimnius	2	5
1101301000	Stenelmis	1	5
1121901100	Dicranota	10	3
1121901500	Hexatoma	3	2
1122200000	Chironomidae	12	6

Habitat:

1 Instream Cover:	16	2 Epifaunal Substrate:	17	
3 Embeddedness:	13	4 Velocity/Depth Regimes:	13	
5 Channel Alterations:	15	6 Sediment Deposition:	16	
7 Frequency of Riffles:	16	8 Channel Flow Status:	12	
9 Condition of Banks:	15	10 Bank Vegetation:	16	Total
11 Grazing or Disruptive:	19	12 Riparian Vegetation:	15	183

Impairment:

Insufficient? Y Impaired? N/A Biology Impaired? N/A
Habitat Impaired? N/A Rock picks influenced? N Impact Localized? N
Designated Use needs reevaluation? N

Comments:

Land Use:
Impairment:

Macroinvertebrate Sample Summary

version: 3.0 12/1/2009 10:41:19 AM

Assessment ID: 60132
Station ID: 20081105-1100-kspyker (Latitude: 40.1573, Longitude: -79.2840)
Method: 6-Dframe Composite, 200 subsample
Location: LRM - Laurel Run Mouth

Metrics:

Total # Organisms: 220 Hilsenhoff: 1.72 %EPT: 71 FCPRSH: 16
Taxa Richness: 23 Beck3: 26 Beck4: 25 Modified %EPT: 65
Modified Caddis: 5 EPT: 15 %Mayflies: 8 %Dominant: 18
Caddisfly Taxa: 8 Mayfly Taxa: 3 Modified EPT: 12 Modified %Mayflies: 8
%Intol-Limestone: 82 %Tol-Limestone: 0 %Intol-Freestone: 89 %Tol-Freestone: 11
Shannon Diversity: 2.65

Taxa:

Code	Standardized ID Level	Number	Tolerance
1020600100	Epeorus	2	0
1020600702	Maccaffertium	6	3
1021200500	Paraleptophlebia	10	1
1040200000	Peltoperlidae	5	2
1040300100	Taeniopteryx	6	2
1040500200	Leuctra	30	0
1040700400	Acroneuria	8	0
1060200400	Nigronia	4	2
1080100200	Dolophilodes	27	0
1080300500	Polycentropus	3	6
1080400300	Diplectronea	39	0
1080400500	Ceratopsyche	5	5
1080400600	Cheumatopsyche	5	6
1080500100	Rhyacophila	8	1
1081001500	Pycnopsyche	1	4
1081001600	Goera	1	0
1101000400	Ectopria	2	5
1101300600	Optioservus	2	4
1120200000	Ceratopogonidae	3	6
1121900400	Tipula	4	4
1121901100	Dicranota	29	3
1121901500	Hexatoma	6	2
1122200000	Chironomidae	14	6

Habitat:

1 Instream Cover:	15	2 Epifaunal Substrate:	18	
3 Embeddedness:	15	4 Velocity/Depth Regimes:	13	
5 Channel Alterations:	18	6 Sediment Deposition:	18	
7 Frequency of Riffles:	18	8 Channel Flow Status:	15	
9 Condition of Banks:	15	10 Bank Vegetation:	16	Total
11 Grazing or Disruptive:	18	12 Riparian Vegetation:	15	194

Impairment:

Insufficient? Y Impaired? N/A Biology Impaired? N/A
Habitat Impaired? N/A Rock picks influenced? N Impact Localized? N
Designated Use needs reevaluation? N

Comments:

Land Use:
Impairment:

Macroinvertebrate Sample Summary

version: 3.0 12/1/2009 10:41:44 AM

Assessment ID: 60130
 Station ID: 20081105-0921-kspyker (Latitude: 40.1572, Longitude: -79.2850)
 Method: 6-Dframe Composite, 200 subsample
 Location: WOUS - White Oak Run upstream of Laurel Run

Metrics:

Total # Organisms: 242 Hilsenhoff: 3.85 %EPT: 48 FCPRSH: 19
 Taxa Richness: 29 Beck3: 22 Beck4: 24 Modified %EPT: 27
 Modified Caddis: 4 EPT: 15 %Mayflies: 3 %Dominant: 19
 Caddisfly Taxa: 7 Mayfly Taxa: 4 Modified EPT: 11 Modified %Mayflies: 2
 %Intol-Limestone: 40 %Tol-Limestone: 0 %Intol-Freestone: 63 %Tol-Freestone: 37
 Shannon Diversity: 2.71

Taxa:

Code	Standardized ID Level	Number	Tolerance
1020400300	Baetis	2	6
1020600100	Epeorus	1	0
1020600600	Stenacron	2	4
1020600702	Maccaffertium	3	3
1040300100	Taeniopteryx	14	2
1040500200	Leuctra	10	0
1040700400	Acroneuria	1	0
1040900600	Sweltsa	7	0
1060100100	Sialis	1	6
1060200400	Nigronia	6	2
1080100100	Chimarra	12	4
1080100200	Dolophilodes	10	0
1080300500	Polycentropus	1	6
1080400300	Diplectrona	4	0
1080400500	Ceratopsyche	4	5
1080400600	Cheumatopsyche	45	6
1081001000	Hydatophylax	1	2
1101000200	Psephenus	8	4
1101300600	Optioservus	25	4
1101300800	Oulimnius	2	5
1101301000	Stenelmis	1	5
1120200000	Ceratopogonidae	2	6
1121900400	Tipula	1	4
1121901100	Dicranota	28	3
1121901500	Hexatoma	10	2
1121901600	Limnophila	2	3
1122100500	Simulium	2	6
1122200000	Chironomidae	36	6
11000000000	Oligochaeta	1	10

Habitat:

1 Instream Cover:	10	2 Epifaunal Substrate:	13	
3 Embeddedness:	15	4 Velocity/Depth Regimes:	10	
5 Channel Alterations:	15	6 Sediment Deposition:	16	
7 Frequency of Riffles:	16	8 Channel Flow Status:	16	
9 Condition of Banks:	15	10 Bank Vegetation:	18	Total
11 Grazing or Disruptive:	19	12 Riparian Vegetation:	15	178

Impairment:

Insufficient? Y Impaired? N/A Biology Impaired? N/A
 Habitat Impaired? N/A Rock picks influenced? N Impact Localized? N
 Designated Use needs reevaluation? N

Comments:

Land Use:
 Impairment:

Macroinvertebrate Sample Summary

version: 3.0 12/1/2009 10:42:32 AM

Assessment ID: 60131
 Station ID: 20081105-1015-kspyker (Latitude: 40.1581, Longitude: -79.2841)
 Method: 6-Dframe Composite, 200 subsample
 Location: WODS - White Oak Run downstream of Laurel Run

Metrics:

Total # Organisms: 208 Hilsenhoff: 3.13 %EPT: 50 FCPRSH: 22
 Taxa Richness: 32 Beck3: 31 Beck4: 31 Modified %EPT: 40
 Modified Caddis: 6 EPT: 19 %Mayflies: 8 %Dominant: 17
 Caddisfly Taxa: 9 Mayfly Taxa: 4 Modified EPT: 15 Modified %Mayflies: 7
 %Intol-Limestone: 61 %Tol-Limestone: 0 %Intol-Freestone: 75 %Tol-Freestone: 25
 Shannon Diversity: 2.93

Taxa:

Code	Standardized ID Level	Number	Tolerance
1020400300	Baetis	3	6
1020600100	Epeorus	1	0
1020600702	Maccaffertium	8	3
1021400100	Ephemera	5	2
1030200700	Lanthus	1	5
1040300100	Taeniopteryx	9	2
1040500200	Leuctra	5	0
1040600100	Allocapnia	3	3
1040600400	Paracapnia	4	1
1040700400	Acroneuria	5	0
1040900600	Sweltsa	20	0
1060200400	Nigronia	3	2
1080100100	Chimarra	5	4
1080100200	Dolophilodes	7	0
1080100300	Wormaldia	1	0
1080300500	Polycentropus	2	6
1080400300	Diplectrona	5	0
1080400500	Ceratopsyche	3	5
1080400600	Cheumatopsyche	12	6
1080500100	Rhyacophila	2	1
1081001000	Hydatophylax	3	2
1101000400	Ectopria	1	5
1101300600	Optioservus	11	4
1101300800	Oulimnius	4	5
1120200000	Ceratopogonidae	2	6
1121900400	Tipula	4	4
1121900700	Antocha	1	3
1121901100	Dicranota	35	3
1121901500	Hexatoma	8	2
1121902300	Pseudolimnophila	1	2
1122200000	Chironomidae	33	6
11000000000	Oligochaeta	1	10

Habitat:

1 Instream Cover:	15	2 Epifaunal Substrate:	16	
3 Embeddedness:	15	4 Velocity/Depth Regimes:	11	
5 Channel Alterations:	18	6 Sediment Deposition:	16	
7 Frequency of Riffles:	15	8 Channel Flow Status:	11	
9 Condition of Banks:	15	10 Bank Vegetation:	16	Total
11 Grazing or Disruptive:	16	12 Riparian Vegetation:	16	180

Impairment:

Insufficient? Y Impaired? N/A Biology Impaired? N/A
 Habitat Impaired? N/A Rock picks influenced? N Impact Localized? N
 Designated Use needs reevaluation? N

Metric Name	Standardization Value	Observed Value	Standardized Metric Score	Adjusted Metric Score
Beck's Index (version 3)	39	20	0.513	0.513
EPT Taxa Richness	23	12	0.522	0.522
Total Taxa Richness	35	23	0.657	0.657
Shannon Diversity Index (freestone)	2.90	2.62	0.903	0.903
Hilsenhoff Biotic Index	1.78	4.10	0.718	0.718
Percent Intolerant Individuals (freestone)	92.5	48.0	0.519	0.519
LRUS pyrolusite treatment			FREESTONE IBI Score =	63.9

Metric Name	Standardization Value	Observed Value	Standardized Metric Score	Adjusted Metric Score
Beck's Index (version 3)	39	26	0.667	0.667
EPT Taxa Richness	23	12	0.522	0.522
Total Taxa Richness	35	26	0.743	0.743
Shannon Diversity Index (freestone)	2.90	2.71	0.934	0.934
Hilsenhoff Biotic Index	1.78	2.57	0.904	0.904
Percent Intolerant Individuals (freestone)	92.5	78.0	0.843	0.843
LRDS pyrolusite treatment			FREESTONE IBI Score =	76.9

Metric Name	Standardization Value	Observed Value	Standardized Metric Score	Adjusted Metric Score
Beck's Index (version 3)	39	26	0.667	0.667
EPT Taxa Richness	23	15	0.652	0.652
Total Taxa Richness	35	23	0.657	0.657
Shannon Diversity Index (freestone)	2.90	2.65	0.914	0.914
Hilsenhoff Biotic Index	1.78	1.72	1.007	1.000
Percent Intolerant Individuals (freestone)	92.5	89.0	0.962	0.962
LRM laurel run mouth			FREESTONE IBI Score =	80.9

Metric Name	Standardization Value	Observed Value	Standardized Metric Score	Adjusted Metric Score
Beck's Index (version 3)	39	22	0.564	0.564
EPT Taxa Richness	23	15	0.652	0.652
Total Taxa Richness	35	29	0.829	0.829
Shannon Diversity Index (freestone)	2.90	2.71	0.934	0.934
Hilsenhoff Biotic Index	1.78	3.85	0.748	0.748
Percent Intolerant Individuals (freestone)	92.5	63.0	0.681	0.681
WOUS white oak run upstream laurel run			FREESTONE IBI Score =	73.5

Metric Name	Standardization Value	Observed Value	Standardized Metric Score	Adjusted Metric Score
Beck's Index (version 3)	39	31	0.795	0.795
EPT Taxa Richness	23	19	0.826	0.826
Total Taxa Richness	35	32	0.914	0.914
Shannon Diversity Index (freestone)	2.90	2.93	1.010	1.000
Hilsenhoff Biotic Index	1.78	3.13	0.836	0.836
Percent Intolerant Individuals (freestone)	92.5	75.0	0.811	0.811
WODS white oak run downstream laurel run			FREESTONE IBI Score =	86.4