# Lower Fryingpan River Benthic Macroinvertebrate Study October 2013 and April 2014

Prepared for:

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August 18, 2014



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# **Executive Summary**

Benthic macroinvertebrate communities serve as indicators of stream and ecosystem function. Previous work completed on the Fryingpan River by Miller Ecological Consultants, Inc was used to determine the stream conditions in 2001 through 2003. In those previous studies, a fall and spring sampling regimen was used to determine changes due to winter flow conditions. This study used the same fall and spring sampling period and two of same locations to update the current condition of the macroinvertebrate community in the Fryingpan River in three locations. Sampling took place at three sites, Site 1 – at Basalt, Site 2 – downstream of Taylor Creek, and Site 3 – downstream of Ruedi Dam. Site 2 and Site 3 were the same sites sampled during the fishery studies conducted in 2001 through 2003. Sampling efforts followed the same protocols as the 2001-2003 study. The results from 2013 -2014 provide an update on the stream conditions since the last sampling in 2003. The main evaluation factors of diversity, evenness, taxa richness, EPT and functional feeding groups all provide insight into the current stream conditions.

In general, results of fall 2013 and spring 2014 were similar to results from the previous study in 2001 through 2003; however, some differences were observed in taxa richness, evenness and EPT values. The difference in sample analysis (600 count for 2013-2014 and full count for 2001-2003) may account for some of the difference. Results of the 2013-2014 sampling are most similar to the data from spring 2003 for most metrics. Functional groups exhibited similar composition during all years with slight variation occurring mostly in the scraper and predator groups. The distribution of the functional feeding groups is similar to the species distribution. There is more complexity in the types of feeding groups in the downstream section of the Fryingpan River compared with the area near the dam. The current condition of the macroinvertebrate community is similar to conditions monitored in 2003. The metrics used for the evaluation show that the macroinvertebrate community does not show signs of impairment, especially in the downstream reaches. Taxa richness and EPT values are somewhat lower than those in 2001 - 2003. It may be useful to conduct additional sampling in future years to determine if this signifies a downward trend or is within the natural variability of the river. Overall, the data show that the lower Fryingpan River has the expected stream conditions for a tailwater stream. The macroinvertebrate community indicates generally good stream conditions, however, the reduced number of taxa may be the result of recent changes in the flow regime. The following recommendations are made to monitor the benthic macroinvertebrate community.

- Monitor the three sites at least every 2-3 years to track any changes resulting from the late summer flow releases.
- Continue to monitor water temperatures at all three locations ( dam, Taylor Creek and Basalt).
- Compile an annual summary of discharge and water temperature for the lower Fryingpan River.

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# Introduction

Benthic macroinvertebrate communities serve as indicators of stream and ecosystem function. Previous work completed on the Fryingpan River by Miller Ecological Consultants, Inc was used to determine the stream conditions in 2001 through 2003. In those previous studies, a fall and spring sampling regimen was used to determine changes due to winter flow conditions. This study used the same fall and spring sampling period and two of same locations to update the current condition of the macroinvertebrate community in the Fryingpan River in three locations.

## Methods

Benthic macroinvertebrate samples were collected by personnel from Roaring Fork Conservancy. Benthic macroinvertebrate samples were analyzed by Miller Ecological Consultants located in Fort Collins, CO. Benthic macroinvertebrate sampling were conducted in late October, 2013 and early April, 2014.

Sampling took place at three sites, Site 1 – at Basalt, Site 2 – downstream of Taylor Creek, and Site 3 – downstream of Ruedi Dam. Site 2 and Site 3 were the same sites sampled during the fishery studies conducted in 2001 through 2003. At each site, three samples were taken in riffle habitat with a modified Hess sampler. All samples were taken in areas of similar size substrate and similar depth to avoid bias that may be directly related to habitat. Substrates within the sampler were thoroughly disturbed and individual rocks were scrubbed by hand to dislodge all benthic organisms. All organisms and debris in the capture cup were transferred to a labeled nalgene container. The collection cup was flushed with water to clear all invertebrates into the sample container. A solution of 85% Ethyl alcohol was added to the container as a preservative. Benthic macroinvertebrates were transported to the lab to be sorted, enumerated, and identified to the lowest practical taxonomic level (Merritt and Cummins 1996; Ward et al. 2002). All containers were labeled internally and externally during sample sorting, identification and weighing. Each sample was sorted using a 600 count random subsample technique in a gridded tray. Identification to the "lowest practical taxonomic level" means that all specimens were identified down to the level that is permitted by the available morphological characteristics. Early life stages of many species sometimes lack certain anatomical characteristics that allow the specimen to be identified to the genus or species level. In these cases the "lowest practical taxonomic level" may mean only the family level; however, if the available characteristics are consistent with a species that has been previously confirmed then the individual may be included as a member of that taxa. In instances where proper identification is possible, the orders Ephemeroptera, Plecoptera, and Trichoptera were identified to genus (and many down to the species level). Most specimens of other orders, including Diptera, were identified to genus; however, members of the family Chironomidae will only be identified to subfamily or tribe.

Data collected were used in various indices recommended by the Rapid Bioassessment Protocols (Barbour et al. 1999) to provide information regarding macroinvertebrate community structure, function, and general aquatic conditions. The following indices were used in this study:

Shannon-Weaver diversity (diversity) and Shannon-Weaver evenness (evenness) values are used to detect changes in macroinvertebrate community structure. In pristine waters, diversity values typically range from near 3.0 to 4.0. In polluted waters this value is generally less than 1.0. The overall evenness value ranges between 0.0 and 1.0, with values lower than 0.3 indicative of organic pollution (Ward et al. 2002). Diversity and evenness are similar measurements because they both rely heavily on the numerical distribution of taxa, (although taxa richness also influences diversity). Both indices are designed to detect imbalance in communities (where a few species are represented by a

large number of individuals). These situations are usually the result of pollution/disturbance-induced changes to the aquatic community.

The Hilsenhoff Biotic Index (HBI) is another metric that is used to measure balance in macroinvertebrate community structure. Its primary value lies in detecting organic pollution. Organic pollution includes such factors as sewage runoff, feedlot or grazing area runoff and other types of contaminants that deplete dissolved oxygen from the water. It is derived from the proportion of taxa, and their assigned tolerance values, based on sensitivity to organic pollution (Barbour et al. 1999). Because the structure of macroinvertebrate communities changes in different regions, the number indicating a certain water quality rating for organic pollution will vary among rivers. A comparison of the values produced within a given system provides information regarding the location and sources of potential impact from organic pollution. Values for the HBI range from 0.0 to 10.0. Lower HBI values indicate better water quality.

The Ephemeroptera, Plecoptera, Trichoptera (EPT) index is a direct measure of taxa richness among species that are generally considered to be sensitive to disturbances (Barbour et al. 1999). Most macroinvertebrate species have specific habitat requirements. The value produced by this metric will indicate locations with preferred habitat as well as areas of disturbance or habitat modification. The EPT index is reported as the total number of distinguishable taxa in the orders Ephemeroptera, Plecoptera, and Trichoptera found at each site. Results provided by this metric will naturally vary among river drainages, but can be valuable when describing habitat changes in a restricted area. Increasing richness correlates with increasing health of the macroinvertebrate community.

Taxa richness also was reported for each location in the study area. This measurement is simply reported as the total number of identifiable taxa collected from each site. It is similar to the EPT index, except that it includes all aquatic macroinvertebrate species (including those that are thought to be tolerant to disturbance). Taxa richness is useful when describing differences in habitat complexity or aquatic conditions between rivers or site locations.

Taxa richness values also provide an indication of habitat preference and complexity. As with the EPT index, increasing richness correlates with increasing health of the macroinvertebrate community.

A measure of macroinvertebrate standing crop at each site is determined using density and biomass. Macroinvertebrate density is reported as the mean number of macroinvertebrates/m<sup>2</sup> found at each location. Biomass is reported as the mean dry weight (in grams) of macroinvertebrates/m<sup>2</sup> at each site location. Biomass values are obtained by drying macroinvertebrates from each sample in an oven at 100°C for 24 hours or until all water content has evaporated (no decrease in weight could be detected). Biomass values offer production-related information in terms of quantitative weight of macroinvertebrates produced at each site. Density and biomass provide a means of measuring and comparing standing crop and provide an indication of productivity for the macroinvertebrate portion of the food web at each sampling location.

The final metric used in this study were an analysis of macroinvertebrate functional feeding groups. This process provides a measurement of macroinvertebrate community function as opposed to other metrics that measure community structure. Aquatic macroinvertebrates are categorized according to feeding strategy to determine the relative proportion of various groups. Taxa are placed into functional feeding groups based on acquisition of nutritional resources (Merritt and Cummins 1996; Ward et al. 2002). The proportion of certain functional feeding groups in the macroinvertebrate community can provide insight to various types of stress in river systems (Ward et al. 2002). In Colorado streams, the Collector-Gatherer group is usually dominant, but balanced ecosystems should provide a variety of feeding opportunities that maintain a good representation of the other functional feeding groups. Numerous variables (including habitat quality) may affect the proportions of certain functional feeding groups.

# Results

The results from 2013 -2014 provide an update on the stream conditions since the last sampling in 2003. The main evaluation factors of diversity, evenness, taxa richness, EPT and functional feeding groups all provide insight into the current stream conditions. Invertebrate communities in the Fryingpan River from Ruedi Dam downstream to Basalt respond as expected as distance from the dam increases. The relatively constant cold water release limits the diversity of the invertebrate community in the vicinity of the dam until the water temperatures are more influenced by ambient conditions further downstream. The community near the dam is dominated by may flies and chironomids. Stone fly genera are absent from the samples near the dam. Some of the univoltine species (species with a single generation per year) have specific thermal requirements to complete their life cycle. The near constant water temperature precludes them from inhabiting the river near the dam. These species are present in the samples at Taylor Creek and even more abundant at Basalt (See Appendix A).

In general, results of fall 2013 and spring 2014 were similar to results from the previous study in 2001 through 2003; however, some differences were observed in taxa richness, evenness and EPT values (Tables 1- 4; Figure 1 – 4). The difference in sample analysis (600 count for 2013-2014 and full count for 2001-2003) may account for some of the difference. Results of the 2013-2014 sampling are most similar to the data from spring 2003 for most metrics (Figures 1 – 4). Functional groups exhibited similar composition during all years with slight variation occurring mostly in the scraper and predator groups (Figures 5 – 8). The distribution of the functional feeding groups is similar to the species distribution. There is more complexity in the types of feeding groups in the downstream section of the Fryingpan River compared with the area near the dam.

Evaluation of data collected during spring 2003 indicated that there had been substantial changes in macroinvertebrate communities compared to results from the previous spring sampling events (Rees et al. 2003). The lack of similarities in response of the metric values at each site suggested that the changes in benthic macroinvertebrate communities

were somewhat different at each location. The metrics that remained relatively unaffected (diversity, evenness, FBI and functional feeding groups) are often more sensitive to pollution-related disturbance. These metrics have always indicated some disturbance that was thought to be an influence of the Ruedi Dam.

Aquatic macroinvertebrate communities were evaluated as a means to understand the relationships between winter base flows, anchor ice and macroinvertebrates community structure. The results provide a description of the composition of existing macroinvertebrate communities at the time and location of sampling. The mechanisms that influence the community assemblages are numerous and include variables not directly related to flow manipulations (biological interactions, air temperature, etc.). However, the direct and indirect effects of the flow regime and regulated discharge in the Fryingpan River provide a major influence on benthic macroinvertebrates.

The flow regime in 2001 and 2002 was much different than the winter of 2013-14 (Figure 9). The water temperature regime near the dam was very similar even though the flow regime was quite different (Figures 10 and 11). The water temperatures in the middle to lower Fryingpan River show much more variability through the winter (Figures 12,13, and 14). The water temperature at Basalt shows the influence of the combination of flow regime and ambient conditions. In the winter of 2001-2002 the flows were below 60 cfs for most of the late winter (Figure 9). The water temperatures in Basalt decreased and had many days near zero in the late winter with these low flows (Figure 13). In contrast, the flow regime in 2013-2014 was above 90 cfs in the early winter and have increased flows starting in January through February (Figure 9). This resulted in water temperatures that only occasionally dropped to near zero and increase in February with the increased water volume (Figure 14).

### **Summary and Recommendations**

The current condition of the macroinvertebrate community is similar to conditions monitored in 2003. The metrics used for the evaluation show that the macroinvertebrate

community does not show signs of impairment, especially in the downstream reaches. Taxa richness and EPT values are somewhat lower than those in 2001 - 2003. It may be useful to conduct additional sampling in future years to determine if this signifies a downward trend or is within the natural variability of the river. Overall, the data show that the lower Fryingpan River has the expected stream conditions for a tailwater stream. The macroinvertebrate community indicates generally good stream conditions, however, the reduced number of taxa may be the result of recent changes in the flow regime. The following recommendations are made to monitor the benthic macroinvertebrate community.

- Monitor the three sites at least every 2-3 years to track any changes resulting from the late summer flow releases.
- Continue to monitor water temperatures at all three locations ( dam, Taylor Creek and Basalt).
- Compile an annual summary of discharge and water temperature for the lower Fryingpan River.

|                          | Site            |                           |           |  |  |
|--------------------------|-----------------|---------------------------|-----------|--|--|
| Metric                   | Below Ruedi Dam | <b>Below Taylor Creek</b> | In Basalt |  |  |
| Density (#/m²)           | 6,574           | 6,616                     | 6,287     |  |  |
| Biomass (g/m²)           | 0.707           | 1.691                     | 3.173     |  |  |
| S-W Diversity            | 1.73            | 2.94                      | 3.98      |  |  |
| S-W Evenness             | 0.432           | 0.642                     | 0.782     |  |  |
| Taxa Richness            | 16              | 24                        | 34        |  |  |
| # EPT Taxa               | 7               | 12                        | 19        |  |  |
| НВІ                      | 5.20            | 4.90                      | 3.41      |  |  |
| Functional Feeding Group |                 |                           |           |  |  |
| % Filterers              | 0.6             | 2.2                       | 4.9       |  |  |
| % Gatherers              | 95.8            | 89.2                      | 59.8      |  |  |
| % Scrapers               | 0.0             | 0.7                       | 12.5      |  |  |
| % Predators              | 0.8             | 2.9                       | 4.7       |  |  |
| % Shredders              | 0.0             | 4.5                       | 17.6      |  |  |

# Table 1. Metrics for macroinvertebrate samples collected from each study site,October 2013.

|                             | Site            |                           |           |  |  |
|-----------------------------|-----------------|---------------------------|-----------|--|--|
| Metric                      | Below Ruedi Dam | <b>Below Taylor Creek</b> | In Basalt |  |  |
| Density (#/m²)              | 6,853           | 7,132                     | 6,457     |  |  |
| Biomass (g/m <sup>2</sup> ) | 2.759           | 7.406                     | 7.233     |  |  |
| S-W Diversity               | 1.97            | 3.52                      | 3.94      |  |  |
| S-W Evenness                | 0.473           | 0.711                     | 0.768     |  |  |
| Taxa Richness               | 18              | 31                        | 35        |  |  |
| # EPT Taxa                  | 9               | 15                        | 18        |  |  |
| НВІ                         | 5.25            | 4.69                      | 4.66      |  |  |
| Functional Feeding Group    |                 |                           |           |  |  |
| % Filterers                 | 0.0             | 4.4                       | 8.8       |  |  |
| % Gatherers                 | 97.4            | 77.2                      | 70.3      |  |  |
| % Scrapers                  | 0.7             | 3.5                       | 8.1       |  |  |
| % Predators                 | 0.5             | 2.5                       | 4.6       |  |  |
| % Shredders                 | 1.1             | 12.2                      | 8.1       |  |  |

Table 2. Metrics for macroinvertebrate samples collected from each study site, April2014.

Table 3. Metrics for macroinvertebrate samples collected from the Fryingpan River below Ruedi Dam and below Taylor Creek during the fall of 2001 and 2002 (from Rees et al. 2003).

|                             | Below Ru  | uedi Dam  | Below Ta  | ylor Creek |
|-----------------------------|-----------|-----------|-----------|------------|
| Metric                      | Fall 2001 | Fall 2002 | Fall 2001 | Fall 2002  |
| Density (#/m <sup>2</sup> ) | 16,509    | 28,220    | 10,318    | 17,530     |
| Biomass (g/m²)              | 1.382     | 2.010     | 2.434     | 2.486      |
| S-W Diversity               | 2.29      | 2.34      | 3.76      | 3.35       |
| S-W Evenness                | 0.453     | 0.478     | 0.701     | 0.639      |
| Taxa Richness               | 33        | 30        | 41        | 38         |
| # EPT Taxa                  | 19        | 14        | 23        | 19         |
| FBI                         | 5.86      | 6.62      | 4.76      | 5.27       |

| Table 4. Metrics for macroinvertebrate samples collected from the Fryingpan River |
|---|
| below Ruedi Dam and below Taylor Creek during the spring of 2001, 2002 and 2003   |
| (from Rees et al. 2003).  |

|                             | Below Ruedi Dam |             |             | Below Taylor Creek |             |             |
|-----------------------------|-----------------|-------------|-------------|--------------------|-------------|-------------|
| Metric                      | Spring 2001     | Spring 2002 | Spring 2003 | Spring 2001        | Spring 2002 | Spring 2003 |
| Density (#/m <sup>2</sup> ) | 36,770          | 62,996      | 25,198      | 18,366             | 21,458      | 20,970      |
| Biomass (g/m <sup>2</sup> ) | 7.411           | 9.292       | 4.387       | 8.795              | 4.377       | 2.063       |
| S-W Diversity               | 2.03            | 2.37        | 2.03        | 3.71               | 3.66        | 1.93        |
| S-W Evenness                | 0.406           | 0.471       | 0.47        | 0.707              | 0.683       | 0.386       |
| Taxa Richness               | 32              | 33          | 20          | 38                 | 41          | 32          |
| # EPT Taxa                  | 17              | 20          | 9           | 21                 | 22          | 18          |
| FBI                         | 5.72            | 6.06        | 5.90        | 3.97               | 4.86        | 5.66        |



Figure 1. Comparison of macroinvertebrate diversity in the Fryingpan River, 2001, 2002, 2003, 2013, and 2014.



Figure 2. Comparison of macroinvertebrate evenness in the Fryingpan River, 2001, 2002, 2003, 2013, and 2014.



Figure 3. Comparison of macroinvertebrate taxa richness in the Fryingpan River, 2001, 2002, 2003, 2013, and 2014.



Figure 4. Comparison of macroinvertebrate EPT values in the Fryingpan River, 2001, 2002, 2003, 2013, and 2014.



Macroinvertebrate Functional Feeding Groups - October 2013

Figure 5. Functional feeding groups by study site, October 2013.



Macroinvertebrate Functional Feeding Groups - April 2014

Figure 6. Functional feeding groups by study site, April 2014.



















Fryingpan River below Ruedi Dam

Figure 9. Winter discharge (December-February) for the Fryingpan River below Ruedi Dam, 2001-2002, 2002-2003 and 2013-2014.



Figure 10. Winter water temperatures for Fryingpan River below Ruedi Reservoir, Colorado (Rees et al. 2003).



Figure 11. Winter water temperatures for the Fryinpan River below Ruedi Reservoir, Colorado, November 2013 through February 2014.



Figure 12. Winter water temperatures for the Fryingpan River at Taylor Creek, Colorado, November 2013 through February 2014.



Figure 13. Winter water temperatures for the Fryingpan River at Basalt, Colorado, November 2001 through February 2002.



Figure 14. Winter water temperatures for the Fryingpan River at Basalt, Colorado, November 2013 through February 2014.

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Appendix A – Macroinvertebrate sample data

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#### Frying Pan River below Ruedi Dam 10-28-13 Rep 1 Rep 2 Rep 3 Ephemeroptera 2 9 3 Baetidae Acentrella sp. Baetis sp. Baetis bicaudatus 30 33 20 tricaudatus 5 7 8 Baetis 2 Ephemerellidae Drunella doddsi 5 grandis 3 Drunella 1 Ephemerella inermis/infrequens Heptageniidae Cinygmula sp. Epeorus sp. Leptophlebiidae Paraleptophlebia 1 sp. Plecoptera Chloroperlidae Sweltsa sp. Nemouridae Zapada sp. Perlidae Hesperoperla sp. Perlodidae Diura sp. Isoperla sp. Skwala sp. Trichoptera Brachycentridae Brachycentrus sp. Hydropsychidae Arctopsyche grandis Hydropsyche sp. Lepidostomatidae Lepidostoma sp. Rhyacophilidae sp. (no gills) 1 2 Rhyacophila Rhyacophila sp. (gills) Glossosomatidae Glossosoma sp. Coleoptera Heterlimnius 1 Elmidae corpulentus (L) 1 1 Heterlimnius corpulentus (A) 1 1 Optioservus sp. (L) Chironomidae Chironomidae Tanypodinae Chironominae 5 6 Tanytarsini Diamesinae 121 162 96 Orthocladiinae 346 321 407 11 8 6 pupae **Other Diptera** Empididae Chelifera sp. Clinocera sp. Simuliidae Simulium sp. pupae Tipulidae Antocha sp. 1 Dicranota sp. Other Hydridae Naididae 12 3 2 Nematoda 17 Turbellaria Dugesia 14 16 sp. Sperchonidae Sperchon sp. Ostracoda 2 1 2 Totals 547 573 576

#### Table A-1. Fryingpan River below Ruedi 10-28-2013.

| Frying Pan River below<br>Ephemeroptera | Rep 1            | Rep 2                                 | Rep 3 |     |     |
|---|------------------|---------------------------------------|-------|-----|-----|
| Baetidae                                | Acentrella       | sp.                                   |       |     |     |
|   | Baetis           | sp.                                   |       |     |     |
|   | Baetis           | bicaudatus                            | 19    | 24  | 33  |
|   | Baetis           | tricaudatus                           | 5     | 8   | 41  |
| Ephemerellidae                          | Drunella         | doddsi                                |       |     |     |
|   | Drunella         | grandis                               | 13    | 10  | 11  |
|   | Ephemerella      | inermis/infrequens                    | 18    | 13  | 16  |
| Heptageniidae                           | Cinygmula        | sp.                                   | 2     | 1   | 3   |
|   | Epeorus          | sp.                                   |       |     |     |
| Leptophlebiidae                         | Paraleptophlebia | sp.                                   | 11    | 9   | 17  |
| Plecoptera                              |                  |                                       |       |     |     |
| Chloroperlidae                          | Sweltsa          | sp.                                   |       |     |     |
| Nemouridae                              | Zapada           | sp.                                   |       |     |     |
| Perlidae                                | Hesperoperla     | sp.                                   | 2     | 2   | 3   |
| Perlodidae                              | Diura            | sp.                                   |       | 1   |     |
|   | Isoperla         | sp.                                   |       |     |     |
|   | Skwala           | sp.                                   |       |     |     |
| Trichoptera                             |                  |                                       |       |     |     |
| Brachycentridae                         | Brachycentrus    | sp.                                   | 4     | 2   | 2   |
| Hydropsychidae                          | Arctopsyche      | grandis                               | 2     | 1   |     |
|   | Hydropsyche      | sp.                                   |       |     |     |
| Lepidostomatidae                        | Lepidostoma      | sp.                                   | 6     | 21  | 3   |
| Rhyacophilidae                          | Rhyacophila      | sp. (no gills)                        |       |     |     |
|   | Rhyacophila      | sp. (gills)                           |       |     |     |
| Glossosomatidae                         | Glossosoma       | sp.                                   |       |     | 5   |
| Coleoptera                              |                  |                                       |       |     |     |
| Elmidae                                 | Heterlimnius     | corpulentus (L)                       | 57    | 51  | 50  |
|   | Heterlimnius     | corpulentus (A)                       |       |     |     |
|   | Optioservus      | sp. (L)                               |       |     |     |
| Chironomidae                            |                  |                                       |       |     |     |
| Chironomidae                            | Tanypodinae      |                                       | 3     |     | 2   |
|   | Chironominae     | Tanytarsini                           | 16    | 6   | 4   |
|   | Diamesinae       |                                       | 47    | 38  | 32  |
|   | Orthocladiinae   |                                       | 215   | 302 | 242 |
|   | pupae            |                                       | 6     | 5   | 11  |
| Other Diptera                           |                  |                                       |       |     |     |
| Empididae                               | Chelifera        | sp.                                   |       |     |     |
|   | Clinocera        | sp.                                   | 1     |     | 1   |
| Simuliidae                              | Simulium         | sp.                                   |       |     |     |
|   | pupae            |                                       |       |     |     |
| Tipulidae                               | Antocha          | sp.                                   | 21    | 26  | 24  |
|   | Dicranota        | sp.                                   |       |     |     |
| Other                                   |                  |                                       |       |     |     |
| Hydridae                                |                  |                                       |       |     |     |
| Naididae                                |                  |                                       | 94    | 77  | 52  |
| Nematoda                                |                  |                                       |       |     |     |
| Turbellaria                             | Dugesia          | sp.                                   |       | 7   | 1   |
| Sperchonidae                            | Sperchon         | sp.                                   |       | 1   | 1   |
| Ostracoda                               |                  |                                       | 2     | 2   | 2   |
| Totals                                  |                  | · · · · · · · · · · · · · · · · · · · | 544   | 607 | 556 |

### Table A-2. Fryingpan River at Taylor Creek 10-28-2013.

| Frying Pan River in Bas | salt 10-28-13    |                    | Rep 1 | Rep 2 | Rep 3 |
|-------------------------|------------------|--------------------|-------|-------|-------|
| Ephemeroptera           |                  |                    |       |       |       |
| Baetidae                | Acentrella       | sp.                |       |       |       |
|                         | Baetis           | sp.                |       |       |       |
|                         | Baetis           | bicaudatus         | 29    | 21    | 43    |
|                         | Baetis           | tricaudatus        | 93    | 71    | 58    |
| Ephemerellidae          | Drunella         | doddsi             |       |       |       |
| •                       | Drunella         | grandis            |       | 2     | 9     |
|                         | Enhemerella      | inermis/infrequens | 12    | - 11  | 14    |
| Hentageniidae           | Cinygmula        | sn                 | 6     | 12    | 13    |
| heptabelinade           | Eneorus          | sp.                | 1     | 12    | 15    |
| Leptophlebiidae         | Paralentophlebia | sp.                | 31    | 46    | 65    |
|                         |                  | -6.                |       |       |       |
| Plecoptera              |                  |                    |       |       |       |
| Chloroperlidae          | Sweltsa          | sp.                | 1     |       |       |
| Nemouridae              | Zapada           | sp.                |       |       | 1     |
| Perlidae                | Hesperoperla     | sp.                | 7     | 5     | 4     |
| Perlodidae              | Diura            | sp.                |       |       |       |
|                         | Isoperla         | sp.                | 3     | 6     |       |
|                         | Skwala           | sp.                |       |       | 2     |
|                         |                  |                    |       |       |       |
| Trichoptera             |                  |                    |       |       |       |
| Brachycentridae         | Brachycentrus    | sp.                | 5     | 2     | 14    |
| Hydropsychidae          | Arctopsyche      | grandis            | 12    | 8     | 13    |
|                         | Hydropsyche      | sp.                | 22    | 2     |       |
| Lepidostomatidae        | Lepidostoma      | sp.                | 58    | 84    | 105   |
| Rhyacophilidae          | Rhyacophila      | sp. (no gills)     | 8     | 1     | 9     |
|                         | Rhyacophila      | sp. (gills)        | 2     | 1     |       |
| Glossosomatidae         | Glossosoma       | sp.                | 31    | 44    | 19    |
|                         |                  |                    |       |       |       |
| Coleoptera              |                  |                    |       |       |       |
| Elmidae                 | Heterlimnius     | corpulentus (L)    | 44    | 32    | 15    |
|                         | Heterlimnius     | corpulentus (A)    | 2     |       | 2     |
|                         | Optioservus      | sp. (L)            | 18    | 23    | 36    |
| Chironomidaa            |                  |                    |       |       |       |
| Chironomidaa            | Tanunadinaa      |                    |       | 2     | 2     |
| Chinononnuae            | Chironominae     | Toputorsini        |       | 2     | 5     |
|                         | Diamagina        | Tanytarsini        | 10    | C     | 0     |
|                         | Diamesinae       |                    | 12    | 6     | 8     |
|                         | Orthocladiinae   |                    | 36    | 17    | 38    |
|                         | pupae            |                    | 2     |       |       |
| Other Diptera           |                  |                    |       |       |       |
| Empididae               | Chelifera        | sp.                | 3     | 2     | 1     |
|                         | Clinocera        | sn                 | 3     | -     | -     |
| Simuliidae              | Simulium         | sp.                | 1     | 1     |       |
| Sintainaac              | nunae            | <i>э</i> р.        | -     | -     |       |
| Tipulidae               | Antocha          | sn                 | 13    | 19    | 71    |
| ripulluae               | Dicropoto        | sp.                | 45    | 19    | /1    |
|                         | Dicianota        | sp.                | I     | I     |       |
| Other                   |                  |                    |       |       |       |
| Hydridae                |                  |                    |       |       |       |
| Naididae                |                  |                    | 67    | 44    | 49    |
| Nematoda                |                  |                    | 1     |       |       |
| Turbellaria             | Dugesia          | sp.                | 3     |       | 4     |
| Sperchonidae            | Sperchon         | sp.                | 3     | 1     | 2     |
| Ostracoda               | ·                | ·                  |       |       |       |
| Totals                  |                  |                    | 560   | 464   | 598   |

### Table A-3. Fryingpan River at Basalt 10-28-2013.

| Frying Pan River belov  | v Ruedi Dam 4-23-14 |                              | Rep 1 | Rep 2 | Rep 3 |
|-------------------------|---------------------|------------------------------|-------|-------|-------|
| Ephemeroptera           |                     |                              |       |       |       |
| Baetidae                | Acentrella          | sp.                          |       |       |       |
|                         | Baetis              | sp.                          |       |       |       |
|                         | Baetis              | bicaudatus                   | 24    | 25    | 34    |
|                         | Baetis              | tricaudatus                  | 37    | 29    | 58    |
| Enhemerellidae          | Drunella            | doddsi                       | 57    | 1     | 1     |
| Ephemereinuae           | Drunella            | grandic                      |       | 1     | 1     |
|                         | Enhomoralla         | granus<br>inormis/infroquenc | 1     | 2     | F     |
| l la unha an an àirde a | Cinumerella         | mermis/intrequens            | 1     | 5     | 5     |
| нертаделицае            | Cinygmula           | sp.                          | T     | 5     | б     |
|                         | Epeorus             | sp.                          |       |       |       |
| Leptophlebiidae         | Paraleptophlebia    | sp.                          |       |       |       |
|                         |                     |                              |       |       |       |
| Plecoptera              |                     |                              |       |       |       |
| Chloroperlidae          | Sweltsa             | sp.                          |       |       |       |
| Nemouridae              | Podmosta            | sp.                          |       | 2     |       |
|                         | Zapada              | sp.                          |       |       |       |
| Perlidae                | Hesperoperla        | sp.                          |       |       |       |
| Perlodidae              | Diura               | sp.                          |       |       |       |
|                         | Isogenoides         | sp.                          |       |       |       |
|                         | Isoperla            | sp.                          |       |       |       |
|                         | Skwala              | sp.                          |       |       |       |
|                         |                     |                              |       |       |       |
| Trichoptera             |                     |                              |       |       |       |
| Brachycentridae         | Brachycentrus       | sp.                          |       |       |       |
| Hydropsychidae          | Arctonsyche         | grandis                      |       |       |       |
| nyaropsychiade          | Hydronsyche         | sn                           |       |       |       |
| Lonidostomatidao        | Lonidostoma         | sp.                          |       |       |       |
| Physicsphilidae         | Physicophila        | sp.                          |       | 1     |       |
| кпуасорппійае           | Rhyacophila         | sp. (no gills)               |       | 1     |       |
|                         | Rhyacophila         | sp. (gills)                  |       | 2     |       |
| Glossosomatidae         | Glossosoma          | sp.                          |       |       |       |
| <b>C</b> -1             |                     |                              |       |       |       |
| Coleoptera              |                     |                              |       | _     |       |
| Elmidae                 | Heterlimnius        | corpulentus (L)              |       | 8     |       |
|                         | Heterlimnius        | corpulentus (A)              |       |       |       |
|                         | Narpus              | concolor                     |       |       |       |
|                         | Optioservus         | sp. (L)                      |       |       |       |
|                         |                     |                              |       |       |       |
| Chironomidae            |                     |                              |       |       |       |
| Chironomidae            | Tanypodinae         |                              |       |       |       |
|                         | Chironominae        | Tanytarsini                  |       |       |       |
|                         | Diamesinae          |                              | 43    | 58    | 17    |
|                         | Orthocladiinae      |                              | 362   | 345   | 404   |
|                         | pupae               |                              | 94    | 44    | 62    |
|                         |                     |                              |       |       |       |
| Other Diptera           |                     |                              |       |       |       |
| Ceratopogonidae         | Bezzia/Palpomvia    | sp.                          |       |       |       |
| Empididae               | Chelifera           | sn                           |       |       |       |
| Emplandae               | Clinocera           | sp.                          |       |       |       |
| Simuliidaa              | Simulium            | sp.                          |       |       |       |
| Simunidae               | Simunum             | sp.                          |       |       |       |
|                         | pupae               |                              |       |       |       |
| lipulidae               | Antocha             | sp.                          |       |       |       |
|                         | Dicranota           | sp.                          |       |       |       |
|                         | Hexatoma            | sp.                          |       | 2     |       |
|                         | Tipula              | sp.                          |       | 8     |       |
|                         |                     |                              |       |       |       |
| Other                   |                     |                              |       |       |       |
| Hydridae                |                     |                              |       |       |       |
| Naididae                |                     |                              | 2     | 61    | 10    |
| Nematoda                |                     |                              |       |       |       |
| Haplotaxida             | Lumbricidae         |                              |       |       |       |
| Turbellaria             | Dugesia             | sp.                          | 3     | 2     | 2     |
| Sperchonidae            | Sperchon            | sp.                          |       |       |       |
| Ostracoda               |                     | - 12 -                       | 3     |       | 2     |
| Totals                  |                     |                              | 570   | 597   | 601   |

### Table A-4. Fryingpan River at Ruedi Dam 4-23-2014.

### Table A-5. Fryingpan River at Taylor Creek 4-23-2014.

| Frying Pan River below Tay | lor Creek 4-23-14 |                    | Rep 1 | Rep 2 | Rep 3 |
|----------------------------|-------------------|--------------------|-------|-------|-------|
| Ephemeroptera              |                   |                    |       |       |       |
| Baetidae                   | Acentrella        | sp.                |       |       |       |
|                            | Baetis            | sp.                | 41    | 35    | 23    |
|                            | Baetis            | bicaudatus         |       |       |       |
|                            | Baetis            | tricaudatus        | 45    | 33    | 24    |
| Ephemerellidae             | Drunella          | doddsi             |       |       |       |
|                            | Drunella          | grandis            | 9     | 6     | 6     |
|                            | Ephemerella       | inermis/infrequens | 61    | 69    | 46    |
| Heptageniidae              | Cinvgmula         | sp.                | 19    | 17    | 21    |
|                            | Epeorus           | sp.                | 2     | 2     |       |
| Leptophlebiidae            | Paraleptophlebia  | sp.                | 21    | 4     | 12    |
|                            |                   |                    |       |       |       |
| Plecoptera                 |                   |                    |       |       |       |
| Chloroperlidae             | Sweltsa           | sp.                |       |       |       |
| Nemouridae                 | Podmosta          | sp.                |       |       |       |
|                            | Zapada            | sp.                |       |       |       |
| Perlidae                   | Hesperoperla      | sp.                | 3     | 6     | 1     |
| Perlodidae                 | Diura             | sp.                |       |       |       |
|                            | Isogenoides       | sp.                |       |       |       |
|                            | Isoperla          | sp.                | 1     | 2     |       |
|                            | Skwala            | sp.                |       |       |       |
| Trichoptera                |                   |                    |       |       |       |
| Brachycentridae            | Brachycentrus     | sp.                | 5     | 4     | 6     |
| Hydropsychidae             | Arctopsyche       | grandis            | 1     |       |       |
| ,                          | Hydropsyche       | sp.                | _     |       |       |
| Lepidostomatidae           | Lenidostoma       | sp.                | 12    | 3     | 21    |
| Bhyacophilidae             | Rhyaconhila       | sp. (no gills)     |       | 1     |       |
| nityacopinidae             | Rhyacophila       | sp. (no gills)     |       | 2     | 1     |
| Classacamatidaa            | Glossosoma        | sp. (gills)        |       | 2     | 1     |
| Glossosoffattuae           | Giossosofila      | sp.                |       | T     | 1     |
| Coleoptera                 |                   |                    |       |       |       |
| Elmidae                    | Heterlimnius      | corpulentus (L)    | 54    | 41    | 51    |
|                            | Heterlimnius      | corpulentus (A)    | 5     | 5     |       |
|                            | Narpus            | concolor           |       | 1     |       |
|                            | Optioservus       | sp. (L)            | 1     | 1     |       |
| Chironomidae               |                   |                    |       |       |       |
| Chironomidaa               | Tanynodinao       |                    | 1     | 2     |       |
| Chironomidae               | Chinemenninge     | Tonutonoini        | 10    | 20    | 10    |
|                            | Chironominae      | Tanytarsini        | 10    | 38    | 16    |
|                            | Diamesinae        |                    | 15    | 9     | /     |
|                            | Orthocladiinae    |                    | 161   | 210   | 242   |
|                            | pupae             |                    | 11    | 12    | 17    |
| Other Diptera              |                   |                    |       |       |       |
| Ceratopogonidae            | Bezzia/Palpomyia  | sp.                |       |       |       |
| Empididae                  | Chelifera         | sp.                |       |       |       |
|                            | Clinocera         | sp.                |       |       |       |
| Simuliidae                 | Simulium          | sp.                |       | 1     |       |
|                            | pupae             |                    |       |       |       |
| Tipulidae                  | Antocha           | sp.                | 51    | 19    | 27    |
|                            | Dicranota         | sp.                |       |       |       |
|                            | Hexatoma          | sp.                | 1     | 2     |       |
|                            | Tipula            | sp.                | 5     | 3     | 4     |
|                            |                   |                    |       |       |       |
| Other                      |                   |                    |       |       |       |
| Hydridae                   |                   |                    |       |       |       |
| Naididae                   |                   |                    | 58    | 38    | 31    |
| Nematoda                   |                   |                    |       |       |       |
| Haplotaxida                | Lumbricidae       |                    | 14    | 43    | 61    |
| Turbellaria                | Dugesia           | sp.                | 1     | 2     |       |
| Sperchonidae               | Sperchon          | sp.                |       | 1     |       |
| Ostracoda                  |                   |                    |       |       |       |
| Totals                     |                   |                    | 608   | 614   | 618   |

### Table A-6. Fryingpan River at Basalt 4-23-2014.

| Ephemorepitan     Sp.     Sp.       Baetis     Sp.     7     Sp.     4       Baetis     Sp.     Sp. <td< th=""><th>Frying Pan River in Basalt</th><th>4-23-14</th><th></th><th>Rep 1</th><th>Rep 2</th><th>Rep 3</th></td<>  | Frying Pan River in Basalt | 4-23-14          |                    | Rep 1 | Rep 2 | Rep 3 |
|--|----------------------------|------------------|--------------------|-------|-------|-------|
| Bateida     Acentrelia     Sp.     7     9     4       Bateis     bicuudatus     82     66     68       Ephemerelildae     Drunelia     gandis     4     6     4       Drunelia     gandis     4     6     4       Heptageniidae     Cinvgrula     50.     14     23     10       Picoperia     50.     14     23     10     10       Petrogen     50.     14     23     10     10       Chloroperidae     Paraleptophlebia     50.     3     1     23     10       Petroda     50.     50.     7     7     7     10     1       Staperia     50.     50.     1     1     1     1     1       Petrodata     50.     50     1   | Ephemeroptera              |                  |                    |       |       |       |
| Bacits     Sp.     7     9     4       Bacits     bicauduus     82     66     68       Drunella     doddi     6     4       Drunella     gradis     4     6     4       Heptagenilde     Cinngmula     Sp.     21     22     9       Leptophlebilde     Paraleptophlebila     Sp.     21     22     9       Icotoperidae     Chioroperidae     Sp.     3     -     1       Percoptera     Sp.     3     -     -     1       Brachycentridae     Sp.     7     7     -     -       Brachycentridae     Brachycentridae     Sp.     7     7     -       Brachycentridae     Brachycentridae     Sp.     1     1     3     -       Brachycentridae     Brachycentridae     Sp.     1     6     -     1       Brachycentridae     Brachycentridae     Sp.     1     1     3     -     2       Brachycentridae     Brachy   | Baetidae                   | Acentrella       | sp.                |       |       |       |
| Baetis     bicaudatus     82     66     68       Ephemerellide     Drunella     grandis     4     6     4       Heptageniide     Drunella     grandis     4     6     4       Heptageniide     Ephemerella     sp.     14     23     12       Leptophilebiide     Paraleptophilebia     sp.     14     23     12       Pectoprin     Epeorus     sp.     3     2     1       Periodide     Podmosta     sp.     3     2     2       Periodide     Podmosta     sp.     3     2     2       Periodide     Diura     sp.     7     7     7       Periodidae     Diura     sp.     7     7     3     2       Brachycentride     Brachycentrus     sp.     7     7     7     7       Brachycentride     Brachycentrus     sp.     5     1     3     2     3       Hydropsychide     Brachycentrus     sp.     5     1  |                            | Baetis           | sp.                | 7     | 9     | 4     |
| Baeis     tricuudatus     82     66     63       Ephemerella     imernis/infrequens     27     10     112       Ephemerella     imernis/infrequens     27     10     112       Eperitie     Ginygmula     5p.     21     22     9       Leptophlebilde     Paraleptophlebila     5p.     9     2     1       Precoptera     Seconda     5p.     3     -     -       Perioda     Seconda     5p.     7     7     -       Perioda     Dara     5p.     7     7     -       Perioda     Brachycentrica     5p.     1     3     2       Brachycentridae     Brachycentrica     5p.     9     1     3       Hydropsychidae     Brachycentrica     5p.     1     144       Rhyacophila     5p. (ng gilis)     3     2     1       Giossoomatidae     Lepidostoma     5p.     1     1     3       Giossoomatidae     Heterlimnius     corpulentus (l)   |                            | Baetis           | bicaudatus         |       |       |       |
| Ephemerellidae     Drunella     grandis     4     6     6       Heptageniidae     Ephemerella     inermis/infrequens     27     10     14       Heptageniidae     Epeorus     sp.     14     23     12       Leptophlebiidae     Paraleptophlebia     sp.     9     2     1       Preceptari   |                            | Baetis           | tricaudatus        | 82    | 66    | 68    |
| Drucella     grandis     4     6     4       Heptageniidae     Cinygnula     \$p.     14     22     9       Leptophlebiidae     Paraleptophlebia     \$p.     9     2     1       Precoptera     Sp.     9     2     1     1     1       Percoptera     Sp.     3     -     -     1  | Ephemerellidae             | Drunella         | doddsi             |       |       |       |
| Ephemerelia     inermis/infrequens     27     10     14       Heptageniidae     Ginygmula     sp.     14     23     12       Leptophilebiidae     Sp.     9     2     1       Picoperi   |                            | Drunella         | grandis            | 4     | 6     | 4     |
| Heptagenildae     Cinvgmula<br>Eporus     sp.     14     23     12<br>Eporus       Leptophlebidae     Paraleptophlebia     sp.     21     22     9       Plecoptera  |                            | Ephemerella      | inermis/infrequens | 27    | 10    | 14    |
| Improve the spectro of the s  | Heptageniidae              | Cinvemula        | sp.                | 14    | 23    | 12    |
| Leptophibilidae     Paraleptophibilida     50.     9     2     1       Plecoptera     Sec.     9     3     3       Nemouridae     Swettsa     sp.     3     3       Perididae     Swettsa     sp.     7     7       Perididae     Dura     sp.     1     50       Perididae     Dira     sp.     8     4     2       Skoperia     sp.     8     4     2       Skwala     sp.     8     4     2       Trichoptera     Brachycentrus     sp.     25     26     3       Hydropsychidae     Arctopsyche     sp.     9     1     3       Lepidostomatidae     Lepidostoma     sp. (no gills)     3     2       Brachycentrus     sp. (gills)     1     9     1     6       Coleoptera     Sp. (gills)     1     9     1     3       Coleoptera     Corpulentus (l)     13     4     5       Elmidae     Heterlimnius<   | Toptagemaae                | Eneorus          | sp.                | 21    | 22    | 9     |
| Plecoptera     Sweltsa     sp.     3       Vemouridae     Podmosta     sp.     7       Perlidiae     Transportation     sp.     7       Perlodidae     Diura     sp.     7       Perlodidae     Diura     sp.     1       Isogenoides     sp.     8     4     2       Skwala     sp.     8     4     2       Trichoptera     Brachycentridae     Brachycentridae     sp.     9     1     3       Hydropsychidae     Arctopsyche     sp.     9     1     3       Lepidostomatidae     Lepidostoma     sp. (no gilis)     1     9     1       Glossoomatidae     Glossooma     sp.     13     4     5       Elmidae     Heterlimnius     corpulentus (l)     13     4     5       Chironomidae     Chironominae     Tanypodinae     corolor     2     17       Orthoracidainee     Chironominae     Tanypodinae     12     24     18       Orthocadiainee  | Leptophlebiidae            | Paraleptophlebia | sp.                | 9     | 2     | 1     |
| Preceptra     Sp.     3       Chloroperlidae     Podmosta     sp.     3       Perlidae     Hesperoperla     sp.     7     7       Perlidae     Diura     sp.     1     sp.     1       Isogenoides     sp.     1     sp.     1     sp.     1       Brachycentridae     Brachycentrius     sp.     25     26     43       Hydropsychidae     Actopsyche     grandis     11     8     5       Hydropsyche     sp.     59     11     144       Hydropsyche     sp.     59     11     14       Rhyacophila     sp. (no gills)     3     2     2       Coleoptera     E     E     E     13     4     5       Chironomidae     Tanybolinae     corpulentus (l)     13     4     2       Chironomidae     Tanybolinae     corpulentus (l)     1     1     3       Chironomidae     Tanybolinae     Tanytarsini     6     4     2  <   | Discontant                 |                  |                    |       |       |       |
| Chiloroperitale     Swetrsa     Sp.     S       Nemouridae     Podmosta     Sp.     7     7       Perida     Diura     Sp.     7     7       Peridadae     Diura     Sp.     1     Isogenoides     Sp.     1       Isogenia     Sp.     8     4     2       Trichoptera     Brachycentrus     Sp.     25     26     43       Hydropsychidae     Brachycentrus     Sp.     25     26     43       Hydropsychidae     Brachycentrus     Sp.     59     11     3       Lepidostomatidae     Lepidostoma     Sp.     59     11     14       Rhyacophila     Sp. (no gills)     3     2     2       Glossosomatidae     Gossosoma     Sp.     1     1     3       Roperitae     Coropulentus (L)     13     4     5       Glossosomatidae     Coropulentus (L)     13     4     2       Diamesinae     Corcolor     1     3     3   | Plecoptera                 |                  |                    |       | 2     |       |
| Nemoundae     Producta     sp.     7     7       Perididae     Hesperoperia     sp.     7     7       Perididae     Diura     sp.     1     1       Isogenoides     sp.     8     4     2       Skwala     sp.     8     4     2       Brachycentridae     Brachycentrus     sp.     25     26     43       Hydropsychidae     Arctopsyche     grandis     11     8     5       Hydropsychidae     Rhyacophila     sp.     59     11     14       Rhyacophila     sp. (no gills)     3     2     2     2       Giossosomatidae     Glossosoma     sp.     1     6     1     1     3       Elmidae     Heterlimnius     corpulentus (l)     13     4     5     10       Orthonomidae     Tanypodinae     Carcoloor     2     116     2     17       Ortheroliptera     Chironominae     Tanytarsini     6     4     2     3   | Chloroperiidae             | Sweitsa          | sp.                |       | 3     |       |
| Perildae     Hesperoperia<br>Diura     sp.     7     7       Perildidae     Diura     sp.     1       Isogenoides     sp.     1       Isogenoides     sp.     8     4     2       Skwala     sp.     8     4     2       Trichoptera     Brachycentrus     sp.     25     26     43       Hydropsychidae     Arctopsyche     sp.     9     1     3       Lepidostomatidae     Lepidostoma     sp.     59     11     14       Rhyacophila     sp. (no gills)     3     2     2     2       Glossosomatidae     Gossosomatidae     Corpulentus (L)     13     4     5       Glossosomatidae     Corpulentus (L)     13     4     5     3       Chiconomidae     Tanypodinae     concolor     36     206     11       Orthocladiinae     Tanypodinae     12     24     18       Orthocladiinae     Sp.     3     4     1       Diamesinae     12  | Nemouridae                 | Podmosta         | sp.                |       |       |       |
| Periloidae     Hesperoperia     sp.     j     j       Periodidae     Diura     sp.     1       Isogenoides     sp.     1       Isogenoides     sp.     8     4     2       Skwala     sp.     8     4     2       Trichoptera     Brachycentridae     Brachycentrus     sp.     25     26     43       Hydropsychidae     Arctopsyche     grandis     11     8     5       Lepidostomatidae     Lepidostoma     sp.     59     11     14       Rhyacophilia     sp. (gills)     1     9     1     3       Glossosomatidae     Glossosoma     sp.     1     6     1     3       Colcoptera     E     Heterlimnius     corpulentus (L)     13     4     5       Chironomidae     Tanypodinae     Corpulentus (A)     1     1     3       Chironominae     Tanypodinae     Tanytarsini     6     4     2       Diamesinae     12     24     18 <td></td> <td>Zapada</td> <td>sp.</td> <td>_</td> <td>_</td> <td></td>   |                            | Zapada           | sp.                | _     | _     |       |
| Periodidae     Dura     sp.     1       Isogenoides     sp.     1       Isoperia     sp.     8     4     2       Trichoptera   | Perlidae                   | Hesperoperla     | sp.                | 7     | 7     |       |
| Isogenoides     sp.     1       Isogenoides     sp.     8     4     2       Skwala     sp.     8     4     2       Trichoptera     Brachycentridae     Brachycentrus     sp.     25     26     43       Hydropsychidae     Arctopsyche     grandis     11     8     5       Hydropsychidae     Arctopsyche     sp.     59     11     14       Rhyacophila     sp. (gills)     1     9     1     3       Glossosomatidae     Glossosoma     sp. (gills)     1     9     1       Glossosomatidae     Glossosoma     sp. (gills)     1     1     3       Elmidae     Heterlinnius     corpulentus (l)     13     4     5       Optioservus     sp. (l)     9     8     10       Chironomidae     Tanypodinae     2     2     10       Chironominae     Tanytarsini     6     4     2     10       Other Optera     2     16     22     17   | Perlodidae                 | Diura            | sp.                |       |       |       |
| Isoperla     sp.     8     4     2       Skwala     sp.     Skwala     sp.       Trichoptera     sp.     25     26     43       Hydropsychidae     Arctopsyche     grandis     11     8     5       Hydropsychidae     Arctopsyche     sp.     9     1     3       Lepidostomatidae     Lepidostoma     sp.     59     11     14       Rhyacophila     sp. (no gills)     3     2     2       Rhyacophila     sp. (no gills)     1     9     1       Glossosomatidae     Glossosoma     sp.     1     6       Coleoptera     E     Heterlimnius     corpulentus (l)     13     4     5       Elmidae     Heterlimnius     corpulentus (l)     1     1     1     3       Optioservus     sp. (l)     9     8     10     1       Chironomidae     Tanypodinae     2     1     1     1       Chironomidae     Tanypodinae     5.     1  |                            | Isogenoides      | sp.                |       | 1     |       |
| Skwala     sp.       Trichoptera   |                            | Isoperla         | sp.                | 8     | 4     | 2     |
| Trichoptera     Brachycentrulae     Brachycentrulae     Arctopsyche     grandis     25     26     43       Hydropsychidae     Arctopsyche     grandis     11     8     5       Hydropsychidae     Rhyacophila     sp.     59     11     14       Rhyacophila     sp. (no gills)     3     2     2       Rhyacophila     sp. (no gills)     1     9     1       Glossosomatidae     Glossosoma     sp.     1     6       Coleoptera     E     Heterlinnius     corpulentus (l.)     13     4     5       Narpus     concolor     0ptioservus     sp. (l.)     9     8     10       Chironomidae     Tanypodinae     2     2     11     3       Orthocladiinae     Tanytarsini     6     4     2     16       Diamesinae     12     24     18     16     22     17       Orthocladiinae     sp.     1     2     3     4     1       pupae     1  |                            | Skwala           | sp.                |       |       |       |
| Brachycentridae     Brachycentrus     sp.     25     26     43       Hydropsychilae     Artopsyche     grandis     11     8     5       Hydropsyche     grandis     11     8     5       Lepidostomatidae     Lepidostoma     sp.     59     11     14       Rhyacophila     sp. (no gills)     3     2     2       Rhyacophila     sp. (gills)     1     9     1     6       Coleoptera     Elmidae     Heterlinnius     corpulentus (l.)     13     4     5       Narpus     concolor     9     8     10     3       Chironomidae     Tanypodinae     2     2     16     22     17       Other Diptera     2     16     22     17     16     22     17       Other Diptera     2     1     2     3     3     4     1       Empididae     Cheifera     sp.     1     2     3     16     22     17       Other Diptera </td <td>Trichoptera</td> <td></td> <td></td> <td></td> <td></td> <td></td>   | Trichoptera                |                  |                    |       |       |       |
| Hydropsychidae     Arctopsyche     grandis     11     8     5       Hydropsyche     sp.     9     1     3       Lepidostomatidae     Lepidostoma     sp.     59     11     14       Rhyacophila     sp. (no gills)     3     2     3     2       Rhyacophila     sp. (glils)     1     9     1     3       Glossosomatidae     Glossosoma     sp.     1     1     3       Glossosomatidae     Heterlimnius     corpulentus (l)     13     4     5       Elmidae     Heterlimnius     corpulentus (A)     1     1     3       Narpus     concolor     0     8     10       Chironomidae     Tanypodinae     2     2     1       Chironomidae     Tanypodinae     12     24     18       Orthocladiinae     pupae     16     22     17       Other Diptera     C     1     2     3     3       Chirononiae     Sp.     1     2   | Brachycentridae            | Brachycentrus    | sp.                | 25    | 26    | 43    |
| Hydropsyche     sp.     9     1     3       Lepidostomatidae     Lepidostoma     sp.     59     11     14       Rhyacophilia     sp. (no gilis)     3     2     2       Rhyacophila     sp. (no gilis)     1     9     1       Glossosomatidae     Glossosoma     sp.     1     6       Coleoptera     Unitable     Heterlimnius     corpulentus (l)     13     4     5       Elmidae     Heterlimnius     corpulentus (A)     1     1     3       Narpus     concolor     0ptioservus     sp. (L)     9     8     10       Chironomidae     Tanypodinae     Tanytarsini     6     4     2     16       Chironomidae     Tanytarsini     6     4     2     17       Other Diptera     2     1     1     2     18       Orthocladiinae     sp.     3     4     1       Empididae     Simulium     sp.     2     1       pupae     ipupae  | Hydropsychidae             | Arctopsyche      | grandis            | 11    | 8     | 5     |
| Lepidostoma tidaeLepidostomasp.591114Rhyacophilasp. (no gills)32Glossosoma tidaeGlossosomasp. (gills)19Glossosoma tidaeGlossosomasp.16ColeopteraElmidaeHeterlimniuscorpulentus (l.)1345Narpusconcolor0113Narpusconcolor9810ChironomidaeChironomidaeTanypodinae216ChironomidaeTanypodinae122418Orthocladiinae3620611622Diamesinae1224181Orthocladiinaesp.123SimuliidaeBezzia/Palpomyiasp.12CeratopogonidaeBezzia/Palpomyiasp.12EmpididaeCheliferasp.12JimuliidaeSimuliumsp.21Dicranotasp.221TipulidaeAntochasp.492858Dicranotasp.222TipulidaeJimulicidae111945Narididae111945121Materiae3357121121Totalssp.223SiracodaSp.22121HydridaeNaididae1119 <td></td> <td>Hydropsyche</td> <td>sp.</td> <td>9</td> <td>1</td> <td>3</td>   |                            | Hydropsyche      | sp.                | 9     | 1     | 3     |
| Rhyacophila<br>Rhyacophilasp. (no gills)32GlossosomatidaeGlossosomasp. (gills)191GlossosomatidaeGlossosomasp.161Coleoptera1345ElmidaeHeterlimnius<br>Heterlimnius<br>Optioservuscorpulentus (L)1345ChironomidaeConcolor113ChironomidaeChironominae<br>Tanypodinae2116Chironomidae2171622Chironomidae341CeratopogonidaeBezzia/Palpomyja<br>upaesp.341EmpididaeChelifera<br>upaesp.123SimulidaeSimulum<br>upaesp.211TipulidaeAttocha<br>upaesp.223Keratoma<br>upaesp.2223TipulidaeAttocha<br>  | Lepidostomatidae           | Lepidostoma      | sp.                | 59    | 11    | 14    |
| Rhyacophila     Sp. (gills)     1     9     1       Glossosomatidae     Glossosoma     sp.     1     6     1       Coleoptera     Elmidae     Heterlinnius     corpulentus (L)     13     4     5       Elmidae     Heterlinnius     corpulentus (L)     13     4     5       Narpus     concolor     0     3     4     5       Optioservus     sp. (L)     9     8     10       Chironomidae     Tanypodinae     2     2     16       Chironomidae     Tanypodinae     12     24     18       Orthocladiinae     36     206     116     16       pupae     16     22     17     16       Other Diptera     Ceratopogonidae     Bezzia/Palpomyia     sp.     1     1       Empididae     Chelifera     sp.     1     2     3       Simulium     sp.     2     1     1     19     45       Mexatoma     sp.     2     2   | Rhvacophilidae             | Rhvacophila      | sp. (no gills)     | 3     |       | 2     |
| Glossosomatidae Glossosoma sp. 1 6<br>Glossosomatidae Glossosoma sp. 1 6<br>Coleoptera<br>Elmidae Heterlimnius corpulentus (L) 13 4 5<br>Heterlimnius corpulentus (A) 1 1 3<br>Narpus concolor<br>Optioservus sp. (L) 9 8 10<br>Chironomidae<br>Chironomidae Tanypodinae 2<br>Chironominae Tanytarsini 6 4 2<br>Diamesinae 36 206 116<br>pupae 16 22 17<br>Other Diptera<br>Ceratopogonidae Bezzia/Palpomyia sp. 1 1<br>Empididae Chelifera sp. 3 4 1<br>Clinocera sp. 1 2 3<br>Simuliidae Simulium sp. 2 1<br>Tipulidae Antocha sp. 49 28 58<br>Dicranota sp.<br>Hexatoma sp. 2 2<br>Tipula sp. 2 2<br>Tipula sp. 2 1<br>Hexatoma sp. 2 2<br>Tipula sp. 2 1<br>Turbellaria Dugesia sp. 2<br>Sperchonidae Sperchon sp. 2<br>Other Jogesia sp. 2<br>Totals 4 598 582  | ,                          | Rhyacophila      | sn (gills)         | 1     | 9     | - 1   |
| Coleoptera     Elmidae     Heterlimnius     corpulentus (L)     13     4     5       Image: Arrow of the construction of the constructi  | Glossosomatidae            | Glossosoma       | sp.                | 1     | 6     | -     |
| ColeopteraElmidaeHeterlimniuscorpulentus (L)1345Narpuscorpulentus (A)113Narpusconcolor0ptioservussp. (L)9810ChironomidaeChironomidaeTanypodinae2216ChironomiaeTanytarsini64213Othocladiinae122418162217Other Diptera0rthocladiinaesp.12341EmpididaeCheliferasp.3411EmpididaeSimuliumsp.211123SimuliidaeSimuliumsp.211111Dicranotasp.12358111 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>   |                            |                  |                    |       |       |       |
| Elmidae     Heterlimnius     corpulentus (L)     13     4     5       Heterlimnius     corpulentus (A)     1     1     3       Narpus     concolor     1     1     3       Optioservus     sp. (L)     9     8     10       Chironomidae     Tanypodinae     2     2       Chironomidae     Tanypodinae     2     24     18       Orthocladiinae     36     206     116     22     17       Other Diptera     36     206     116     22     17       Other Diptera     1     2     3     4     1       Empididae     Chelifera     sp.     1     2     3       Simulidae     Simulium     sp.     2     1     1       pupae     11     2     3     58     58       Dicranota     sp.     2     2     2     1       Hexatoma     sp.     2     2     2     11     19     45   | Coleoptera                 |                  |                    |       |       | _     |
| Heterlinnius<br>Narpuscorpulentus (A)1113Narpus<br>Optioservussp. (L)9810ChironomidaeTanypodinae<br>Chironominae27ChironomidaeTanypodinae<br>Diamesinae122418Orthocladiinae<br>pupae36206116CeratopogonidaeBezzia/Palpomyia<br>Simuliidaesp.12ChironomidaeChironominae<br>pupae162217Other DipteraImage: Sp.341Cinocera<br>pupaesp.123SimuliidaeSimulium<br>pupaesp.21TipulidaeAntocha<br>Dicranota<br>sp.sp.22Tipulasp.222Tipulasp.11945Nematoda<br>HaplotaxidaLumbricidae<br>Sperchonidae3357121TotalsSperchon<br>sp.221TotalsSperchonidae<br>Sperchonidae58582  | Elmidae                    | Heterlimnius     | corpulentus (L)    | 13    | 4     | 5     |
| NarpusconcolorOptioservussp. (L)9810ChironomidaeTanypodinae22ChironomidaeTanypodinae22418Othocladiinae36206116pupae162217Other Diptera5p.123CeratopogonidaeBezzia/Palpomyiasp.12Cinocerasp.123SimulidaeSimuliumsp.21TipulidaeSimuliumsp.21Dicranotasp.123Kexatomasp.221MarkuSp.213SimulidaeSimuliumsp.22TipulidaeAntochasp.22Naididae111945Nematodasp.22HaplotaxidaLumbricidae3357121TurbellariaDugesiasp.22Ostracotasp.221TotalsSperchoni dae59582582   |                            | Heterlimnius     | corpulentus (A)    | 1     | 1     | 3     |
| Optioservussp. (L)9810ChironomidaeTanypodinae22ChironomidaeTanypodinae224Diamesinae122418Orthocladiinae36206116pupae162217Other DipteraCeratopogonidaeBezzia/Palpomyiasp.1EmpididaeCheliferasp.341Clinocerasp.123SimuliidaeSimuliumsp.211pupae12335858Dicranotasp.49285858Dicranotasp.2211Hexatomasp.2211Hodidae111945455857Nematoda1119455858121TurbellariaDugesiasp.221Totalssp.2357121  |                            | Narpus           | concolor           |       |       |       |
| ChironomidaeTanypodinae2ChironominaeTanytarsini642Diamesinae122418Orthocladiinae36206116pupae162217Other DipteraCeratopogonidaeBezzia/Palpomyiasp.1CeratopogonidaeBezzia/Palpomyiasp.12SimulidaeCheliferasp.341Clinocerasp.123SimulidaeSimuliumsp.21pupae12358Dicranotasp.492858Dicranotasp.221Hexatomasp.222Tipulasp.111945Natidiae11194511Namatodasp.221HaplotaxidaLumbricidae3357121TurbellariaDugesiasp.22Ottariasp.22   |                            | Optioservus      | sp. (L)            | 9     | 8     | 10    |
| ChironomidaeTanypodinaeTanytarsini642ChironominaeTanytarsini64218Diamesinae1224180Orthocladiinae3620611616pupae162217Other DipteraCeratopogonidaeBezzia/Palpomyiasp.123EmpididaeCheliferasp.341Clinocerasp.1233SimuliidaeSimuliumsp.211pupaeripupae1235858Dicranotasp.49285858Dicranotasp.2221Hexatomasp.2221Naididae111945459494Naididae111945111945Nematoda33571211211119HaplotaxidaLumbricidaesp.22121TurbellariaDugesiasp.22121121Ostracodasp.25858582121TurbellariaDugesiasp.23357121TurbellariaDugesiasp.22121121Ostracodasperchonidaesperchon3357121TotalsSperchonsp. <td>Chironomidae</td> <td></td> <td></td> <td></td> <td></td> <td></td>   | Chironomidae               |                  |                    |       |       |       |
| Chironominae<br>DiamesinaeTanytarsini642Diamesinae122418Orthocladiinae<br>pupae36206116pupae162217Other DipteraI162217Ceratopogonidae<br>EmpididaeBezzia/Palpomyia<br>Chelferasp.341EmpididaeChelfera<br>Clinocerasp.123SimuliidaeSimulium<br>Dicranotasp.211Pupae<br>TipulidaeAntocha<br>Dicranotasp.492858Dicranota<br>Tipulasp.2221OtherI1119451119Matidae<br>HaplotaxidaLumbricidae<br>Sperchonidae3357121121Totalssp.221121121121Totalssp.23357121121Totalssp.2335582131  | Chironomidae               | Tanypodinae      |                    |       | 2     |       |
| Diamesinae122418Orthocladiinae36206116pupae162217Other DipteraCeratopogonidaeBezzia/Palpomyiasp.1EmpididaeCheliferasp.341Clinocerasp.123SimuliidaeSimuliumsp.21pupae58Dicranotasp.492858Dicranotasp.222Tipulasp.222Kexatomasp.222Tipulasp.111945Nematoda11194511HaplotaxidaLumbricidae3357121TurbellariaDugesiasp.22Ostracodasp.22Totalssp.258   |                            | Chironominae     | Tanytarsini        | 6     | 4     | 2     |
| Orthocladiinae<br>pupae36<br>16206<br>116116<br>   |                            | Diamesinae       |                    | 12    | 24    | 18    |
| pupae162217Other Dipterasp.12CeratopogonidaeBezzia/Palpomyiasp.341EmpididaeCheliferasp.341Clinocerasp.123SimuliidaeSimuliumsp.211pupaenuchasp.211TipulidaeAntochasp.492858Dicranotasp.2211Tipulasp.2221Otherripulasp.11945Naididae1119451119NaididaeLumbricidae3357121TurbellariaDugesiasp.22Cotracodasp.221TotalsSperchonidaesp.2582  |                            | Orthocladiinae   |                    | 36    | 206   | 116   |
| Other Dipterasp.1CeratopogonidaeBezzia/Palpomyiasp.341EmpididaeCheliferasp.341Clinocerasp.123SimuliidaeSimuliumsp.211pupaerupaerupaerupaerupaerupaeTipulidaeAntochasp.492858Dicranotasp.22rupaerupaeTipulidaeAntochasp.22rupaeDicranotasp.22rupaerupaerupaeTipulasp.111945rupaeOtherrupaerupaerupaerupaerupaerupaeHydridaerupaerupaerupaerupaerupaerupaeOtherrupaerupaerupaerupaerupaerupaeTurbellariaDugesiasp.2rupaerupaeTurbellariaDugesiasp.2rupaerupaeSperchonidaeSperchonsp.2rupaerupaeTotalsturberrupaerupaerupaerupaeKerterrupaerupaerupaerupaerupaeKerterrupaerupaerupaerupaerupaeKerterrupaerupaerupaerupaerupaeKerterrupaerupaerupaerupaerupaeKerter  |                            | pupae            |                    | 16    | 22    | 17    |
| Other DipletaBezzia/Palpomyiasp.1EmpididaeCheliferasp.341EmpididaeClinocerasp.123SimuliidaeSimuliumsp.211pupaepupaeTipulidaeAntochasp.492858Dicranotasp.22-Tipulasp.22-OtherHydridae111945Naididae111945HaplotaxidaLumbricidae3357121TurbellariaDugesiasp.22Ostracoda-22-Totals-486598582  | Other Diptore              |                  |                    |       |       |       |
| CellstoppgrindaeDezzia/raiponylasp.11EmpididaeCheliferasp.341Clinocerasp.123SimuliidaeSimuliumsp.21pupae   | Ceratonogonidao            | Bezzia/Palnomvia | <b>C</b> D         |       |       | 1     |
| ClinicateClinicateSp.541ClinoceraSp.123SimuliidaeSimuliumSp.21pupaepupae12TipulidaeAntochaSp.4928DicranotaSp.22TipulaSp.22TipulaSp.22Other111945Naididae111945Nematoda3357121HaplotaxidaLumbricidaeSp.2SperchonidaeSperchonsp.2Ostracoda486598582  | Empididaa                  | Chaliforn        | sh.                | 2     | Л     | 1     |
| Clinoteralsp.125SimuliidaeSimuliumsp.21pupaeAntochasp.492858Dicranotasp.222Hexatomasp.222Tipulasp.222Other111945Naididae111945Nematoda3357121HaplotaxidaLumbricidaesp.2SperchonidaeSperchonsp.2Ostracoda486598582  | Emploidae                  | Clinesera        | sp.                | 3     | 4     | 1     |
| Simuliidae Simulium sp. 2 1<br>pupae<br>Tipulidae Antocha sp. 49 28 58<br>Dicranota sp. 2 2<br>Hexatoma sp. 2 2<br>Tipula sp. 2 2<br>Other<br>Hydridae<br>Naididae 11 19 45<br>Nematoda<br>Haplotaxida Lumbricidae 33 57 121<br>Turbellaria Dugesia sp. 2<br>Sperchonidae Sperchon sp. 2<br>Ostracoda  | Circullide e               | Cinocera         | sp.                | 1     | 2     | 3     |
| Tipulidae Antocha sp. 49 28 58<br>Dicranota sp.<br>Hexatoma sp. 2 2<br>Tipula sp. 2 2<br>Other III 19 45<br>Naididae III 19 45<br>Nematoda<br>Haplotaxida Lumbricidae 33 57 121<br>Turbellaria Dugesia sp. 2<br>Sperchonidae Sperchon sp. 2<br>Ostracoda III 19 45   | Simundae                   | Simulum          | sp.                | 2     | T     |       |
| InpulidaeAntochasp.492858Dicranotasp.222Hexatomasp.222Tipulasp.222Other111945Naididae111945Nematoda3357121HaplotaxidaLumbricidaesp.2SperchonidaeSperchonsp.2Ostracoda486598582   |                            | pupae            |                    |       |       | 50    |
| Dicranotasp.Hexatomasp.22Tipulasp.Other11Hydridae11Naididae11Nematoda33HaplotaxidaLumbricidaeHaplotaxidaSperchonSperchonidaeSperchonOstracoda486Totals486  | lipulidae                  | Antocha          | sp.                | 49    | 28    | 58    |
| Hexatomasp.22Tipulasp.OtherHydridaeNaididaeNaididaeHaplotaxidaLumbricidaeJugesiasp.SperchonidaeSperchonidaeOstracodaTotals486598582  |                            | Dicranota        | sp.                | _     |       |       |
| Tipulasp.OtherImage: Sp.Hydridae1119Naididae1119Haplotaxida1119HaplotaxidaLumbricidae33TurbellariaDugesiasp.SperchonidaeSperchonsp.Ostracoda486598   |                            | Hexatoma         | sp.                | 2     | 2     |       |
| Other<br>Hydridae<br>Naididae<br>Haplotaxida<br>Haplotaxida<br>Turbellaria<br>Sperchonidae<br>Ostracoda<br>Totals<br>Hydridae<br>Haplotaxida<br>Lumbricidae<br>Sperchon<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Sperchon<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Haplotaxida<br>Hap |                            | Tipula           | sp.                |       |       |       |
| Hydridae 11 19 45<br>Nematoda 33 57 121<br>Turbellaria Dugesia sp. 2<br>Sperchonidae Sperchon sp. 2<br>Ostracoda 486 598 582   | Other                      |                  |                    |       |       |       |
| Naididae111945NematodaHaplotaxidaLumbricidae3357121TurbellariaDugesiasp.22SperchonidaeSperchonsp.22Ostracoda486598582  | Hydridae                   |                  |                    |       |       |       |
| NematodaHaplotaxidaLumbricidae3357121TurbellariaDugesiasp.2SperchonidaeSperchonsp.2Ostracoda486598582  | Naididae                   |                  |                    | 11    | 19    | 45    |
| HaplotaxidaLumbricidae3357121TurbellariaDugesiasp.2SperchonidaeSperchonsp.2Ostracoda486598   | Nematoda                   |                  |                    |       |       |       |
| Turbellaria Dugesia sp. 2<br>Sperchonidae Sperchon sp. 2<br>Ostracoda<br>Totals 486 598 582  | Haplotaxida                | Lumbricidae      |                    | 33    | 57    | 121   |
| Sperchonidae Sperchon sp. 2<br>Ostracoda<br>Totals 486 598 582   | Turbellaria                | Dugesia          | sp.                | 2     |       |       |
| Ostracoda     486     598     582  | Sperchonidae               | Sperchon         | sp.                | 2     |       |       |
| Totals 486 598 582   | Ostracoda                  |                  | - F                | -     |       |       |
|  | Totals                     |                  |                    | 486   | 598   | 582   |

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