

## **Appendix C: B-IBI Score and Metrics for Each Site Visit in 2017 and 2018**

Appendix C. B-IBI score and metrics for each site visit in 2017 and 2018.

Subbasin	Stream	Site Code	Event Date	Overall Score	Taxa Richness Score	Ephemeroptera Richness Score	Plecoptera Richness Score	Trichoptera Richness Score	Clinger Richness Score	Long-Lived Richness Score	Intolerant Richness Score	Percent Dominant Score	Predator Percent Score	Tolerant Percent Score
Lower Puget Sound - Seattle	Fauntleroy Creek	FA02	8/27/2018	41.7	3.8	2.9	7.1	2.5	2.4	6.2	2.9	0.5	5.5	7.9
Lower Puget Sound - Seattle	Fauntleroy Creek	FAMA0851	8/27/2018	30.9	2.8	1.4	2.9	1.2	0	6.2	1.4	0.6	5.2	9.1
Longfellow Creek	Longfellow Creek	LF04	9/19/2018	6.5	0	0	2.9	0	0	2.5	0	0	0.6	0.6
Longfellow Creek	Longfellow Creek	LFMA0954	8/27/2018	6.6	0	0	0	0	0	0	0	0	0	6.6
Longfellow Creek	Longfellow Creek	LFMA2559	8/27/2018	1.4	0	0	0	0	0	1.2	0	0	0.1	0
Longfellow Creek	Longfellow Creek	LFMA3396	8/27/2018	0.6	0	0	0	0	0	0	0	0	0.6	0
Longfellow Creek	Longfellow Creek	LFMA3490	8/20/2018	6.7	0	0	0	2.5	0	3.8	0	0	0.4	0
W Lake Washington - Seattle S	Mapes Creek	MA01	8/29/2017	10.4	0	0	0	1.2	1.2	0	0	5.5	0	2.6
W Lake Washington - Seattle S	Mapes Creek	MA01	10/2/2018	21.6	2.1	2.9	2.9	1.2	2.4	5	0	1.9	0.4	2.8
W Lake Washington - Seattle S	Mapes Creek	MAMA6255	10/9/2018	38.2	1.7	2.9	4.3	5	1.8	3.8	0	6.9	4.4	7.5
Pipers Creek	Mohlendorph Creek	MOHL	10/5/2017	9.9	0	0	1.4	1.2	0	0	0	0.8	6.5	0
Pipers Creek	Pipers Creek	PI01	9/5/2017	18.5	0	1.4	2.9	5	0.6	1.2	0	3	0.5	3.9
Pipers Creek	Pipers Creek	PI02	9/14/2017	25.8	1	1.4	2.9	2.5	0	2.5	0	5.7	7.7	2
Pipers Creek	Pipers Creek	PIMA6462	9/5/2017	10.9	0	1.4	2.9	3.8	0.6	1.2	0	0.5	0.5	0
Pipers Creek	Pipers Creek	PIMA7729	9/14/2017	1.2	0	0	0	1.2	0	0	0	0	0	0
Longfellow Creek	Puget Creek	PU01	9/19/2018	2.5	0	0	0	0	0	2.5	0	0	0	0
Lower Puget Sound - Seattle	Schmitz Creek	SCMA9065	9/19/2018	15.7	0	1.4	1.4	1.2	0	2.5	0	0	1.5	7.6
W Lake Washington - Seattle S	Taylor Creek	TA03	8/28/2018	16.7	0	2.9	2.9	3.8	0	0	0	0	1.1	6.1
W Lake Washington - Seattle S	Taylor Creek	TAEF6250	9/4/2018	20.7	0	2.9	4.3	2.5	0	2.5	0	3.4	3	2.1
W Lake Washington - Seattle S	Taylor Creek	TAMA_MOUTH	8/29/2017	11.3	0	0	0	0	0	0	0	0.6	1	9.6
W Lake Washington - Seattle S	Taylor Creek	TAMA_MOUTH	8/28/2018	11.7	0	0	0	0	0	1.2	0	0.7	0	9.8
W Lake Washington - Seattle S	Taylor Creek	TAMA7468	9/4/2018	26.2	1	2.9	5.7	2.5	2.4	2.5	0	1.8	2	5.5
W Lake Washington - Seattle S	Taylor Creek	TAWF4847	10/3/2018	14.8	0.7	2.9	4.3	2.5	0	0	0	0.6	3.8	0
Thornton Creek	Thornton Creek	95T	9/28/2017	8	0	0	0	2.5	0	5	0	0	0.5	0
Thornton Creek	Thornton Creek	95T	10/2/2018	10.4	0	0	0	0	0	1.2	0	0	0	9.1
Thornton Creek	Thornton Creek	KNKC	9/14/2017	3.9	0	0	1.4	2.5	0	0	0	0	0	0
Thornton Creek	Thornton Creek	KNKC	9/24/2018	14	0	1.4	1.4	2.5	0.6	3.8	0	0.1	0.8	3.4
Thornton Creek	Thornton Creek	KNKT_D	9/7/2017	4.9	0	0	0	0	0	0	0	0	0	4.9
Thornton Creek	Thornton Creek	KNKT_D	9/24/2018	7.5	0	0	0	0	0	1.2	0	0	0	6.3
Thornton Creek	Thornton Creek	KNKT_U	9/7/2017	9.3	0	0	0	0	0	2.5	0	0	0	6.8
Thornton Creek	Thornton Creek	KNKT_U	9/24/2018	8.7	0	0	0	0	0	0	0	0	0	8.7
Thornton Creek	Thornton Creek	NFCC	8/30/2017	9.7	0	0	0	5	1.8	2.5	0	0	0.4	0
Thornton Creek	Thornton Creek	NFCC	10/2/2018	27.6	2.4	0	0	3.8	2.4	7.5	0	6.3	3.6	1.7
Thornton Creek	Thornton Creek	NFCT	9/8/2017	9.2	0	0	0	1.2	1.2	2.5	0	0.6	0	3.6
Thornton Creek	Thornton Creek	NFCT	10/2/2018	6.2	0	0	0	2.5	0	3.8	0	0	0	0
Thornton Creek	Thornton Creek	SFCC	9/20/2017	14	0	0	0	3.8	0.6	3.8	0	2.6	0	3.3
Thornton Creek	Thornton Creek	SFCC	10/3/2018	14.2	1.4	0	0	3.8	1.2	3.8	0	3.7	0.5	0
Thornton Creek	Thornton Creek	SFCT	9/8/2017	4.5	0	0	0	2.5	0	0	0	0	0	2
Thornton Creek	Thornton Creek	SFCT	10/2/2018	8.1	0	0	0	5	0	0	0	0	0	3.1
Thornton Creek	Thornton Creek	TMMA1199	9/18/2017	7.7	0	0	0	2.5	1.2	2.5	0	0.3	0.3	0.9
Thornton Creek	Thornton Creek	TMMA3168	9/18/2017	15.6	1	0	0	3.8	2.9	2.5	0	4.3	0.7	0.4
Thornton Creek	Thornton Creek	TMMA8751	9/18/2017	15.5	0	0	0	1.2	0.6	5	0	6.3	0.8	1.5
Thornton Creek	Thornton Creek	TNMA0609	8/28/2017	7.5	0	0	0	2.5	2.4	2.5	0	0.2	0	0

Subbasin	Stream	Site Code	Event Date	Overall Score	Taxa Richness Score	Ephemeroptera Richness Score	Plecoptera Richness Score	Trichoptera Richness Score	Clinger Richness Score	Long-Lived Richness Score	Intolerant Richness Score	Percent Dominant Score	Predator Percent Score	Tolerant Percent Score
Thornton Creek	Thornton Creek	TNMA6462	10/5/2017	16.2	0	0	1.4	0	0.6	5	0	6.8	0	2.4
Thornton Creek	Thornton Creek	TNMA7673	8/30/2017	2	0	0	0	0	0	1.2	0	0.6	0.1	0
Thornton Creek	Thornton Creek	TSMA6612	8/30/2017	0	0	0	0	0	0	0	0	0	0	0
Thornton Creek	Thornton Creek	TSMA7774	9/20/2017	10.2	0	0	0	2.5	0.6	3.8	0	1.9	0	1.5
Pipers Creek	Venema Creek	PIVE1895	9/7/2017	30.1	3.1	2.9	4.3	6.2	1.8	3.8	0	2.6	3.2	2.3
Pipers Creek	Venema Creek	VENE	9/7/2017	33.7	1.7	2.9	5.7	3.8	1.2	3.8	0	4.7	3.4	6.6

## **Appendix D: City-wide Taxonomic Trends**

Appendix D. City-Wide Taxonomic Trends -- taxa highlighted in orange have trends that are likely due to changes in naming convention or level of effort by the taxonomic lab, rather than actual trends. An '\*' denotes confidence at the  $p < 0.05$  level, while '~' denotes confidence at  $p < 0.1$ .

Affected Metric													
Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Acari	Abundance	*	+										X
Antocha	Abundance & FOQ	~/*	+/+	X					X				X
Atrichopogon	Abundance	*	+										X
Baetis tricaudatus	Abundance	*	-										X
Baetis tricaudatus complex	Abundance & FOQ	~/*	+/+	X									X
Caecidotea	Abundance & FOQ	~/*	+/+	X							X		X
Chaetocladius	Abundance & FOQ	~/*	+/+	X									X
Chelifera	Abundance	*	-									X	X
Chelifera/Metachela	Abundance & FOQ	~/*	+/+	X					X			X	X
Cinygma	FOQ	*	+	X	X				X				
Copepoda	Abundance & FOQ	~/*	-/-	X									X
Corynoneura	Abundance & FOQ	~/~	+/+	X									X
Crangonyx	Abundance & FOQ	~/*	+/+	X							X		X
Dicranota	Abundance & FOQ	~/*	+/+	X								X	X
Eukiefferiella	Abundance & FOQ	~/*	-/-	X									X
Eukiefferiella cf. tirolensis	Abundance	*	+										X
Eukiefferiella Claripennis Group	Abundance & FOQ	~/*	+/+	X									X
Eukiefferiella Tirolensis Group	Abundance & FOQ	~/*	+/+	X									X
Gammarus	Abundance & FOQ	~/*	-/-	X									X
Glossosoma	Abundance & FOQ	~/*	+/+	X									X
Glutops	FOQ	*	+	X						X			
Heptagenia	Abundance & FOQ	~/*	-/-	X									X
Hirudinea	Abundance	~	-									X	X
Hydrophilidae	Abundance & FOQ	~/*	-/-	X								X	X
Hydropsyche	Abundance & FOQ	~/*	+/+	X									X
Lara	Abundance & FOQ	~/*	+/+	X									X
Lara avara	Abundance	*	-										X
Lebertia	Abundance & FOQ	~/*	+/+	X									X
Leuctridae	FOQ	*	+	X		X							
Limonia	Abundance	*	-										X
Malenka	Abundance & FOQ	~/*	+/+	X									X
Menetus	Abundance & FOQ	~/*	+/+	X							X		X
Meringodixa	Abundance & FOQ	~/~	-/-	X									X
Molophilus	FOQ	~	+	X									
Narpus concolor	Abundance & FOQ	~/*	+/+	X					X	X			X
Neoplasta	Abundance & FOQ	~/*	+/+	X					X			X	X
Oligochaeta	Abundance	*	-										X
Oribatida	Abundance & FOQ	~/*	+/+	X									X
Orthocladius (Symposiocladius)	FOQ	*	+	X									
Orthocladius complex	Abundance & FOQ	~/~	-/-	X									X

Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Ostracoda	Abundance & FOQ	*/*	+/+	X									X
Pagastia	Abundance	~	-								X		X
Paraleptophlebia	FOQ	*	+	X	X								
Parametriocnemus	Abundance & FOQ	*/*	+/+	X									X
Parapsyche almota	Abundance & FOQ	~/*	+/+	X			X		X	X	X	X	X
Pericoma/Telmatoscopus	Abundance & FOQ	*/*	+/+	X									X
Physella	Abundance & FOQ	*/~	-/-	X							X		X
Pisidium	Abundance & FOQ	*/*	+/+	X						X			X
Potamopyrgus antipodarum	Abundance & FOQ	*/*	+/+	X									X
Psilometriocnemus	Abundance & FOQ	*/*	+/+	X									X
Rhyacophila Brunnea/Vemna Group	Abundance & FOQ	*/*	+/+	X			X		X	X		X	X
Simnia	Abundance & FOQ	*/*	-/-	X									X
Simulium	Abundance & FOQ	*/*	+/+	X					X		X		X
Soyedina	Abundance	*	-										X
Sperchon	Abundance & FOQ	*/*	+/+	X									X
Sperchonopsis	Abundance & FOQ	*/*	+/+	X									X
Sphaeriidae	Abundance & FOQ	*/*	-/-	X						X			X
Thienemannimyia	Abundance & FOQ	*/*	-/-	X								X	X
Tipula	Abundance & FOQ	~/*	+/+	X						X	X		X
Trepaxonemata	Abundance	*	+										X
Tvetenia	Abundance	*	-										X
Tvetenia Bavarica Group	Abundance	~	+										X
Zavrelimyia	Abundance & FOQ	*/*	+/+	X								X	X

## **Appendix E: Taxonomic Trends by Stream**

Appendix E. Stream Taxonomic Trends -- taxa highlighted in orange have trends that are likely due to changes in naming convention or level of effort by the taxonomic lab, rather than actual trends. An '\*' denotes confidence at the p < 0.05 level, while '~' denotes confidence at p < 0.1.

Affected Metric														
Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Fauntleroy	Baetis tricaudatus	Presence	*	-	X	X				X				
Fauntleroy	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Fauntleroy	Brundiniella	Abundance	~	+									X	X
Fauntleroy	Chaetocladius	Abundance & Presence	*/*	+/+	X									X
Fauntleroy	Chelifera/Metachela	Abundance & Presence	~/*	+/+	X					X			X	X
Fauntleroy	Chironomini	Presence	~	-	X									
Fauntleroy	Cinygma	Abundance & Presence	*/*	+/+	X	X				X				X
Fauntleroy	Cinygmula	Abundance & Presence	~/*	-/-	X	X			X	X				X
Fauntleroy	Cryptochia	Presence	~	-	X			X		X	X			
Fauntleroy	Dicranota	Abundance	*	+									X	X
Fauntleroy	Eukiefferiella	Abundance & Presence	*/*	-/-	X									X
Fauntleroy	Eukiefferiella cf tirolensis	Presence	~	+	X									
Fauntleroy	Eukiefferiella Claripennis Group	Abundance & Presence	*/*	+/+	X									X
Fauntleroy	Eukiefferiella Tirolensis Group	Abundance & Presence	*/~	+/+	X									X
Fauntleroy	Glutops	Abundance	~	+									X	X
Fauntleroy	Heptagenia	Abundance & Presence	*/*	-/-	X	X				X				X
Fauntleroy	Hesperoperla pacifica	Abundance	*	+									X	X
Fauntleroy	Lara	Abundance & Presence	*/*	+/+	X					X	X			X
Fauntleroy	Lara avara	Abundance & Presence	*/*	-/-	X					X	X			X
Fauntleroy	Menetus	Abundance & Presence	~/~	+/+	X							X		X
Fauntleroy	Molophilus	Abundance & Presence	~/*	+/+	X									X
Fauntleroy	Neoplasta	Presence	~	+	X					X				
Fauntleroy	Oligochaeta	Presence	~	-	X									
Fauntleroy	Oribatida	Abundance & Presence	*/*	+/+	X									X
Fauntleroy	Orthocladius (Symposiocladius)	Abundance & Presence	*/*	+/+	X									X
Fauntleroy	Pagurus aleuticus	Presence	~	-	X									
Fauntleroy	Pericoma/Telmatoscopus	Abundance & Presence	*/*	+/+	X									X
Fauntleroy	Pisidium	Abundance & Presence	*/*	+/+	X						X			X
Fauntleroy	Psilometriocnemus	Abundance & Presence	*/*	+/+	X									X
Fauntleroy	Pteronarcys princeps	Presence	~	+	X		X				X			
Fauntleroy	Sperchonopsis	Abundance & Presence	~/~	+/+	X									X
Fauntleroy	Sphaeriidae	Abundance & Presence	*/*	-/-	X						X			X
Fauntleroy	Sweltsa	Abundance	~	-									X	X
Fauntleroy	Tipula	Abundance	*	+								X		X
Fauntleroy	Tvetenia	Abundance & Presence	*/*	-/-	X									X
Fauntleroy	Wormaldia	Abundance & Presence	*/*	-/-	X			X		X				X
Fauntleroy	Zapada cinctipes	Abundance & Presence	~/*	+/+	X		X							X
Fauntleroy	Zapada Oregonensis Group	Abundance & Presence	*/*	+/+	X		X				X			X
Fauntleroy	Zavrelimyia	Abundance & Presence	~/~	+/+	X								X	X
Longfellow	Baetis tricaudatus	Abundance & Presence	*/*	-/-	X	X				X				X



Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Longfellow	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Longfellow	Brundiniella	Abundance & Presence	~/*	-/-	X								X	X
Longfellow	Chaetocladius	Abundance & Presence	*/*	-/-	X									X
Longfellow	Chelifera	Abundance & Presence	*/*	-/-	X					X			X	X
Longfellow	Crangonyx	Abundance & Presence	*/*	+/+	X							X		X
Longfellow	Cricotopus Bicinctus Group	Abundance & Presence	~/~	-/-	X					X				X
Longfellow	Dicranota	Abundance & Presence	*/*	+/+	X								X	X
Longfellow	Eukiefferiella	Abundance & Presence	*/*	-/-	X									X
Longfellow	Eukiefferiella Claripennis Group	Abundance & Presence	*/*	+/+	X									X
Longfellow	Gammarus	Abundance & Presence	*/*	-/-	X									X
Longfellow	Gyraulus	Abundance & Presence	*/*	-/-	X									X
Longfellow	Hirudinea	Abundance & Presence	*/*	-/-	X						X		X	X
Longfellow	Lara	Abundance & Presence	*/*	+/+	X					X	X			X
Longfellow	Lebertia	Abundance & Presence	~/~	+/+	X									X
Longfellow	Limonia	Abundance & Presence	~/~	-/-	X									X
Longfellow	Malenka	Abundance & Presence	*/*	+/+	X		X							X
Longfellow	Neoplasta	Abundance & Presence	*/*	+/+	X					X			X	X
Longfellow	Oligochaeta	Abundance	~	-										X
Longfellow	Pacifastacus	Abundance & Presence	*/*	+/+	X						X			X
Longfellow	Pagastia	Abundance & Presence	*/*	-/-	X							X		X
Longfellow	Parametriocnemus	Abundance & Presence	*/*	+/+	X									X
Longfellow	Parapsyche almota	Presence	*	+	X			X		X	X			
Longfellow	Physella	Abundance & Presence	*/*	-/-	X							X		X
Longfellow	Pisidium	Abundance & Presence	*/*	+/+	X						X			X
Longfellow	Potamopyrgus antipodarum	Abundance & Presence	~/~	+/+	X									X
Longfellow	Prostoma	Abundance & Presence	*/~	+/+	X								X	X
Longfellow	Rheocricotopus	Abundance & Presence	*/*	-/-	X									X
Longfellow	Sperchon	Abundance & Presence	*/*	+/+	X									X
Longfellow	Sphaeriidae	Abundance & Presence	*/*	-/-	X						X			X
Longfellow	Thienemannimyia	Abundance & Presence	*/*	-/-	X								X	X
Longfellow	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X
Longfellow	Tvetenia Bavarica Group	Presence	*	+	X									
Mapes	Acar	Abundance & Presence	*/*	-/-	X									X
Mapes	Baetis tricaudatus	Presence	*	-	X	X				X				
Mapes	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Mapes	Caacidotea	Abundance & Presence	*/~	+/+	X							X		X
Mapes	Ceratopogoninae	Presence	*	-	X									
Mapes	Dixa	Abundance & Presence	~/~	-/-	X									X
Mapes	Eukiefferiella	Presence	~	-	X									
Mapes	Hydropsyche	Abundance	~	+										X
Mapes	Lebertia	Abundance & Presence	~/~	+/+	X									X
Mapes	Leptophlebiidae	Abundance & Presence	~/~	+/+	X	X								X
Mapes	Limnophila	Abundance & Presence	~/~	-/-	X								X	X

Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Mapes	Malenka	Abundance	~	-										X
Mapes	Microtendipes	Presence	~	-	X					X				
Mapes	Optioservus	Abundance	~	-										X
Mapes	Paraleptophlebia	Abundance & Presence	*/*	-/-	X	X								X
Mapes	Parapsyche almota	Presence	~	-	X			X		X	X			
Mapes	Planorbidae	Presence	~	-	X									
Mapes	Polypedilum	Abundance & Presence	~/~	-/-	X					X				X
Mapes	Potamopyrgus antipodarum	Presence	~	+	X									
Mapes	Rhyacophila Betteni Group	Abundance & Presence	*/~	-/-	X			X		X			X	X
Mapes	Soyedina	Abundance & Presence	*/*	-/-	X		X							X
Mapes	Sperchon	Abundance & Presence	*/*	+/+	X									X
Mapes	Stempellinella	Abundance & Presence	~/*	-/-	X									X
Mapes	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X
Mapes	Turbellaria	Abundance & Presence	*/*	-/-	X									X
Mohlendorph	Acari	Presence	*	-	X									
Mohlendorph	Baetis tricaudatus	Presence	*	-	X	X				X				
Mohlendorph	Baetis tricaudatus complex	Presence	*	+	X	X				X				
Mohlendorph	Chelifera/Metachela	Presence	*	+	X					X				
Mohlendorph	Dicranota	Presence	*	+	X									
Mohlendorph	Eukiefferiella Claripennis Group	Abundance	~	+										X
Mohlendorph	Eukiefferiella Tirolensis Group	Presence	*	+	X									
Mohlendorph	Lebertia	Presence	*	+	X									
Mohlendorph	Limnephilidae	Abundance & Presence	*/*	-/-	X			X						X
Mohlendorph	Malenka	Presence	*	+	X		X							
Mohlendorph	Neoplasta	Presence	*	+	X					X				
Mohlendorph	Pericoma/Telmatoscopus	Presence	*	+	X									
Mohlendorph	Sperchon	Presence	*	+	X									
Mohlendorph	Sperchonopsis	Presence	*	+	X									
Mohlendorph	Trepaxonemata	Presence	*	+	X									
Mohlendorph	Turbellaria	Presence	*	-	X									
Pipers	Baetis tricaudatus	Abundance & Presence	*/*	-/-	X	X				X				X
Pipers	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Pipers	Brundiniella	Abundance & Presence	*/~	-/-	X								X	X
Pipers	Caecidotea	Abundance & Presence	~/~	+/+	X							X		X
Pipers	Chelifera	Abundance & Presence	*/~	-/-	X					X			X	X
Pipers	Chloroperlidae	Presence	~	-	X		X							
Pipers	Crangonyx	Abundance & Presence	*/*	+/+	X							X		X
Pipers	Dolichopodidae	Abundance & Presence	~/~	-/-	X								X	X
Pipers	Empididae	Abundance & Presence	~/~	-/-	X					X			X	X
Pipers	Eukiefferiella	Abundance & Presence	*/*	-/-	X									X
Pipers	Eukiefferiella Claripennis Group	Abundance & Presence	*/*	+/+	X									X
Pipers	Eukiefferiella Tirolensis Group	Abundance & Presence	*/*	+/+	X									X
Pipers	Gammarus	Abundance & Presence	*/*	-/-	X									X

Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Pipers	Glossosoma	Abundance & Presence	*/*	+/+	X			X		X				X
Pipers	Heptagenia	Abundance & Presence	~/~	-/-	X	X				X				X
Pipers	Hydropsyche	Abundance & Presence	*/*	+/+	X			X		X				X
Pipers	Lara avara	Abundance & Presence	*/*	-/-	X					X	X			X
Pipers	Lebertia	Abundance & Presence	*/*	+/+	X									X
Pipers	Malenka	Abundance & Presence	*/*	+/+	X		X							X
Pipers	Neoplasta	Abundance & Presence	*/*	+/+	X					X			X	X
Pipers	Ostracoda	Abundance	~	+										X
Pipers	Pagastia	Abundance	*	-								X		X
Pipers	Parametriocnemus	Abundance & Presence	*/*	+/+	X									X
Pipers	Pisidium	Abundance & Presence	*/*	+/+	X						X			X
Pipers	Rhyacophila Brunnea/Vemna Group	Abundance & Presence	*/*	+/+	X			X		X	X		X	X
Pipers	Simulium	Abundance	*	+								X		X
Pipers	Soyedina	Presence	~	-	X		X							
Pipers	Sphaeriidae	Abundance & Presence	~/~	-/-	X						X			X
Pipers	Thienemannimyia	Abundance & Presence	*/*	-/-	X								X	X
Pipers	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X
Pipers	Turbellaria	Presence	~	-	X									
Pipers	Tvetenia	Abundance & Presence	~/~	-/-	X									X
Pipers	Tvetenia Bavarica Group	Abundance & Presence	*/*	+/+	X									X
Pipers	Zapada cinctipes	Presence	~	-	X		X							
Puget	Baetis tricaudatus complex	Presence	*	+	X	X				X				
Puget	Corynoneura	Presence	*	+	X									
Puget	Crangonyx	Presence	*	+	X									
Puget	Eukiefferiella Claripennis Group	Presence	*	+	X									
Puget	Glutops	Presence	*	+	X						X			
Puget	Hydra	Presence	*	-	X									
Puget	Hydrozoa	Presence	*	+	X									
Puget	Oribatida	Presence	*	+	X									
Puget	Parametriocnemus	Presence	*	+	X									
Puget	Parapsyche almota	Presence	*	+	X			X		X	X			
Puget	Pisidium	Presence	*	+	X						X			
Puget	Psilometriocnemus	Presence	*	+	X									
Puget	Simulium	Presence	*	+	X					X				
Puget	Trepaxonemata	Presence	*	+	X									
Puget	Tvetenia Bavarica Group	Presence	*	+	X									
Schmitz	Baetis tricaudatus	Presence	*	-	X	X				X				
Schmitz	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Schmitz	Chelifera/Metachela	Abundance & Presence	~/~	+/+	X					X			X	X
Schmitz	Chironomidae	Abundance & Presence	*/*	-/-	X									X
Schmitz	Dicranota	Abundance & Presence	~/*	+/+	X								X	X
Schmitz	Dixa	Presence	*	+	X									

Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Schmitz	Eukiefferiella	Presence	*	-	X									
Schmitz	Eukiefferiella Claripennis Group	Abundance & Presence	~/*	+/+	X									X
Schmitz	Eukiefferiella Tirolensis Group	Abundance & Presence	~/*	+/+	X									X
Schmitz	Heptagenia	Abundance & Presence	*/*	-/-	X	X				X				X
Schmitz	Limnophila	Presence	~	+	X									
Schmitz	Menetus	Presence	~	+	X									
Schmitz	Meringodixa	Abundance & Presence	~/~	-/-	X									X
Schmitz	Neoplasta	Abundance & Presence	*/*	+/+	X					X			X	X
Schmitz	Oribatida	Abundance & Presence	*/*	+/+	X									X
Schmitz	Parametriocnemus	Abundance & Presence	*/~	+/+	X									X
Schmitz	Pisidium	Abundance & Presence	*/*	+/+	X						X			X
Schmitz	Polypedilum	Presence	~	+	X					X				
Schmitz	Psilometriocnemus	Abundance & Presence	*/*	+/+	X									X
Schmitz	Sphaeriidae	Abundance & Presence	~/*	-/-	X						X			X
Schmitz	Thienemanniella	Presence	~	+	X									
Taylor	Baetis tricaudatus	Abundance & Presence	*/*	-/-	X	X				X				X
Taylor	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Taylor	Cladotanytarsus	Abundance & Presence	~/~	+/+	X									X
Taylor	Corynoneura	Abundance & Presence	*/*	+/+	X									X
Taylor	Crangonyx	Abundance & Presence	*/*	+/+	X							X		X
Taylor	Cricotopus	Abundance & Presence	~/~	+/+	X					X				X
Taylor	Cryptochironomus	Abundance & Presence	~/~	+/+	X								X	X
Taylor	Dicrotendipes	Abundance & Presence	*/*	+/+	X									X
Taylor	Dolophilodes	Abundance & Presence	*/~	+/+	X			X		X				X
Taylor	Eukiefferiella	Abundance & Presence	*/*	-/-	X									X
Taylor	Eukiefferiella Claripennis Group	Abundance & Presence	*/*	+/+	X									X
Taylor	Eukiefferiella Tirolensis Group	Abundance & Presence	~/~	+/+	X									X
Taylor	Gammarus	Abundance & Presence	*/*	-/-	X									X
Taylor	Glossosoma	Presence	~	-	X			X		X				
Taylor	Heptagenia	Abundance & Presence	*/*	-/-	X	X				X				X
Taylor	Hydropsyche	Presence	*	-	X			X		X				
Taylor	Hydroptila	Abundance & Presence	~/~	+/+	X			X		X		X		X
Taylor	Lara	Abundance & Presence	*/*	+/+	X					X	X			X
Taylor	Lara avara	Presence	~	-	X					X	X			
Taylor	Lebertia	Abundance & Presence	*/*	+/+	X									X
Taylor	Leptophlebiidae	Abundance & Presence	*/~	+/+	X	X								X
Taylor	Limnophyes	Abundance & Presence	~/~	+/+	X									X
Taylor	Malenka	Abundance & Presence	*/*	+/+	X		X							X
Taylor	Micropsectra	Abundance	*	+										X
Taylor	Nemata	Abundance	~	+										X
Taylor	Neoleptophlebia	Abundance & Presence	*/~	+/+	X									X
Taylor	Neoplasta	Abundance & Presence	*/*	+/+	X					X			X	X
Taylor	Oligochaeta	Presence	~	+	X									

Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Taylor	Oribatida	Abundance & Presence	*/~	+/+	X									X
Taylor	Parametrio cnemus	Presence	~	+	X									
Taylor	Pisidium	Abundance & Presence	*/*	+/+	X						X			X
Taylor	Prodiamesa	Abundance & Presence	~/~	+/+	X									X
Taylor	Prostoma	Abundance & Presence	~/~	+/+	X								X	X
Taylor	Rhyacophila Brunnea/Vemna Group	Abundance & Presence	*/*	+/+	X			X		X	X		X	X
Taylor	Simulium	Presence	*	+	X					X				
Taylor	Sphaeriidae	Abundance & Presence	*/*	-/-	X						X			X
Taylor	Tipula	Presence	~	+	X						X			
Taylor	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X
Taylor	Tvetenia	Presence	~	-	X									
Taylor	Tvetenia Bavarica Group	Abundance	~	-										X
Taylor	Zapada cinctipes	Presence	~	-	X		X							
Taylor	Zavrelimyia	Abundance	~	+									X	X
Thornton	Antocha	Abundance & Presence	*/*	+/+	X					X				X
Thornton	Baetis tricaudatus	Abundance & Presence	*/*	-/-	X	X				X				X
Thornton	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Thornton	Baetodes tritus	Abundance & Presence	~/*	-/-	X									X
Thornton	Brundiniella	Abundance & Presence	~/~	-/-	X								X	X
Thornton	Caecidotea	Abundance & Presence	*/*	+/+	X							X		X
Thornton	Cardiocladius	Abundance & Presence	*/~	+/+	X					X			X	X
Thornton	Chelifera	Abundance & Presence	*/*	-/-	X					X			X	X
Thornton	Copepoda	Abundance & Presence	*/*	-/-	X									X
Thornton	Corynoneura	Abundance & Presence	*/*	+/+	X									X
Thornton	Crangonyx	Abundance & Presence	*/*	+/+	X							X		X
Thornton	Cricotopus	Abundance & Presence	*/*	-/-	X					X				X
Thornton	Dicranota	Abundance & Presence	*/*	+/+	X								X	X
Thornton	Dicrotendipes	Abundance & Presence	*/*	+/+	X									X
Thornton	Erpobdella	Abundance & Presence	*/*	+/+	X						X	X	X	X
Thornton	Eukiefferiella	Abundance & Presence	*/*	-/-	X									X
Thornton	Eukiefferiella cf .tirolensis	Presence	~	+	X									
Thornton	Eukiefferiella Claripennis Group	Abundance & Presence	*/*	+/+	X									X
Thornton	Eukiefferiella Devonica Group	Abundance & Presence	*/*	+/+	X									X
Thornton	Eukiefferiella Tirolensis Group	Abundance & Presence	*/*	+/+	X									X
Thornton	Gammarus	Abundance & Presence	*/*	-/-	X									X
Thornton	Glossosoma	Abundance & Presence	*/*	+/+	X			X		X				X
Thornton	Gyraulus	Presence	*	-	X									
Thornton	Helobdella stagnalis	Presence	~	-	X									
Thornton	Hemerodromia	Abundance	~	+									X	X
Thornton	Hirudinea	Abundance & Presence	*/*	-/-	X						X		X	X
Thornton	Hydra	Abundance & Presence	*/*	-/-	X								X	X
Thornton	Hydrophilidae	Abundance & Presence	*/*	-/-	X								X	X

Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Thornton	Hydropsyche	Abundance & Presence	*/*	+/+	X			X		X				X
Thornton	Lara	Abundance	~	+										X
Thornton	Lara avara	Abundance & Presence	*/*	-/-	X					X	X			X
Thornton	Larsia	Presence	~	-	X									
Thornton	Lebertia	Abundance & Presence	*/*	+/+	X									X
Thornton	Lepidostoma	Abundance	~	+										X
Thornton	Lepidostoma cinereum	Abundance & Presence	*/*	+/+	X									X
Thornton	Limnephilidae	Presence	~	-	X			X						
Thornton	Malenka	Abundance & Presence	*/*	+/+	X		X							X
Thornton	Menetus	Abundance & Presence	*/*	+/+	X							X		X
Thornton	Micrasema	Abundance & Presence	~/~	+/+	X			X		X				X
Thornton	Narpus	Abundance & Presence	*/*	-/-	X					X	X			X
Thornton	Narpus concolor	Abundance & Presence	*/*	+/+	X					X	X			X
Thornton	Neoplasta	Abundance & Presence	*/*	+/+	X					X			X	X
Thornton	Odontomesa	Abundance & Presence	*/*	-/-	X									X
Thornton	Oligochaeta	Abundance	*	-										X
Thornton	Optioservus	Abundance & Presence	*/*	+/+	X					X	X			X
Thornton	Oribatida	Abundance & Presence	~/~	+/+	X									X
Thornton	Orthocladius complex	Abundance & Presence	*/*	-/-	X									X
Thornton	Ostracoda	Abundance	~	+										X
Thornton	Pagastia	Abundance & Presence	*/*	-/-	X							X		X
Thornton	Paramerina	Abundance & Presence	~/*	-/-	X								X	X
Thornton	Parapsyche almota	Presence	~	+	X			X		X	X			
Thornton	Physella	Abundance & Presence	*/*	-/-	X							X		X
Thornton	Pisidium	Abundance & Presence	*/*	+/+	X						X			X
Thornton	Planorbidae	Abundance & Presence	*/*	-/-	X									X
Thornton	Polypedilum	Abundance	*	-										X
Thornton	Potamopyrgus antipodarum	Abundance & Presence	*/*	+/+	X									X
Thornton	Prostoma	Abundance & Presence	*/*	+/+	X								X	X
Thornton	Ramellogammarus	Abundance & Presence	*/*	-/-	X									X
Thornton	Rheotanytarsus	Abundance & Presence	*/*	+/+	X					X				X
Thornton	Rhyacophila Brunnea/Vemna Group	Abundance & Presence	*/~	+/+	X			X		X	X		X	X
Thornton	Simnia	Abundance & Presence	*/*	-/-	X									X
Thornton	Sperchon	Abundance & Presence	*/*	+/+	X									X
Thornton	Sperchonopsis	Abundance & Presence	~/~	+/+	X									X
Thornton	Sphaeriidae	Abundance & Presence	*/*	-/-	X						X			X
Thornton	Thienemannia	Abundance & Presence	~/*	-/-	X									X
Thornton	Thienemanniella	Abundance & Presence	*/*	+/+	X									X
Thornton	Thienemannimyia	Abundance & Presence	*/*	-/-	X								X	X
Thornton	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X
Thornton	Turbellaria	Abundance & Presence	*/*	-/-	X									X
Thornton	Tvetenia	Abundance & Presence	~/*	-/-	X									X



Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
Thornton	Tvetenia Bavarica Group	Abundance	~	-										X
Thornton	Wormaldia	Presence	~	-	X			X		X				
Thornton	Zapada cinctipes	Abundance & Presence	*/*	+/+	X		X							X
Venema	Baetis tricaudatus	Presence	*	-	X	X				X				
Venema	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
Venema	Brachycera	Abundance & Presence	~/*	-/-	X								X	X
Venema	Brillia	Abundance	~	-										X
Venema	Chelifera	Abundance & Presence	*/*	-/-	X					X			X	X
Venema	Chelifera/Metachela	Abundance & Presence	~/~	+/+	X					X			X	X
Venema	Cinygma	Abundance	~	-										X
Venema	Crangonyx	Abundance & Presence	~/~	+/+	X							X		X
Venema	Dicranota	Presence	*	-	X									
Venema	Eukiefferiella	Abundance & Presence	*/*	-/-	X									X
Venema	Eukiefferiella cf .tirolensis	Abundance	~	+										X
Venema	Eukiefferiella Claripennis Group	Abundance & Presence	*/*	+/+	X									X
Venema	Eukiefferiella Tirolensis Group	Abundance & Presence	*/*	+/+	X									X
Venema	Gammarus	Abundance & Presence	*/*	-/-	X									X
Venema	Glossosoma	Abundance & Presence	*/*	+/+	X			X		X				X
Venema	Hydropsyche	Abundance & Presence	*/*	+/+	X			X		X				X
Venema	Lara	Abundance & Presence	*/*	+/+	X					X	X			X
Venema	Lara avara	Abundance & Presence	~/~	-/-	X					X	X			X
Venema	Oligochaeta	Presence	~	+	X									
Venema	Paraleptophlebia	Abundance & Presence	*/*	+/+	X	X								X
Venema	Paramerina	Abundance & Presence	~/*	-/-	X								X	X
Venema	Parapsyche almota	Presence	~	+	X			X		X	X			
Venema	Pisidium	Presence	*	+	X						X			
Venema	Rhyacophila Brunnea/Vemna Group	Abundance & Presence	*/*	+/+	X			X		X	X		X	X
Venema	Simulium	Abundance	*	+								X		X
Venema	Sperchonopsis	Abundance & Presence	*/*	+/+	X									X
Venema	Tipula	Abundance & Presence	*/*	+/+	X						X	X		X
Venema	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X
Venema	Zapada cinctipes	Presence	~	+	X		X							

## **Appendix F: Taxonomic Trends by Site**



Appendix F. Site Taxonomic Trends -- taxa highlighted in orange have trends that are likely due to changes in naming convention or level of effort by the taxonomic lab, rather than actual trends. An '\*' denotes confidence at the p < 0.05 level, while '~' denotes confidence at p < 0.1.

Affected Metric														
Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
KNKC	Baetis tricaudatus	Abundance & Presence	~/*	-/-	X	X				X				X
KNKC	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
KNKC	Eukiefferiella	Presence	~	-	X									
KNKC	Eukiefferiella Tirolensis Group	Abundance & Presence	~/~	+/+	X									X
KNKC	Potamopyrgus antipodarum	Abundance & Presence	*/~	+/+	X									X
KNKC	Sperchon	Abundance & Presence	*/*	+/+	X									X
KNKC	Thienemanniella	Presence	*	+	X									
KNKC	Trepaxonemata	Abundance & Presence	~/*	+/+	X									X
KNKC	Turbellaria	Abundance & Presence	~/*	-/-	X									X
KNKC	Tvetenia Bavarica Group	Presence	~	-	X									
KNKC	Zapada cinctipes	Abundance & Presence	~/*	+/+	X		X							X
NFCC	Acari	Abundance & Presence	~/*	-/-	X									X
NFCC	Baetis tricaudatus	Abundance & Presence	~/*	-/-	X	X				X				X
NFCC	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
NFCC	Diplocladius	Presence	~	+	X									
NFCC	Erpobdella	Abundance & Presence	~/~	+/+	X						X	X	X	X
NFCC	Erpobdellidae	Abundance & Presence	~/*	-/-	X						X	X	X	X
NFCC	Eukiefferiella Claripennis Group	Abundance	~	+										X
NFCC	Ferrissia	Abundance & Presence	*/*	+/+	X									X
NFCC	Lebertia	Abundance & Presence	*/*	+/+	X									X
NFCC	Malenka	Abundance & Presence	*/*	+/+	X		X							X
NFCC	Narpus concolor	Abundance	~	+										X
NFCC	Pagastia	Abundance & Presence	~/*	-/-	X							X		X
NFCC	Polypedilum	Abundance & Presence	*/*	-/-	X					X				X
NFCC	Potamopyrgus antipodarum	Abundance & Presence	~/~	+/+	X									X
NFCC	Rheotanytarsus	Presence	~	+	X					X				
NFCC	Rhyacophila Brunnea/Vemna Group	Abundance & Presence	*/*	+/+	X			X		X	X		X	X
NFCC	Turbellaria	Abundance & Presence	*/*	-/-	X									X
NFCT	Acari	Abundance & Presence	~/~	-/-	X									X
NFCT	Baetis tricaudatus	Abundance & Presence	*/*	-/-	X	X				X				X
NFCT	Baetis tricaudatus complex	Abundance & Presence	~/*	+/+	X	X				X				X
NFCT	Dicranota	Presence	~	+	X									
NFCT	Erpobdella	Presence	~	+	X						X			
NFCT	Erpobdellidae	Abundance	~	-								X	X	X
NFCT	Hydroptila	Abundance & Presence	~/~	-/-	X			X		X		X		X
NFCT	Malenka	Abundance & Presence	~/*	+/+	X		X							X
NFCT	Narpus concolor	Abundance	~	+										X
NFCT	Pagastia	Abundance & Presence	*/~	-/-	X							X		X
NFCT	Potamopyrgus antipodarum	Abundance & Presence	*/*	+/+	X									X
NFCT	Thienemannimyia complex	Abundance & Presence	*/*	-/-	X								X	X
NFCT	Turbellaria	Presence	*	-	X									

Site	Taxa	Trend Type	Significance Level	Trend Direction	Total Taxa Richness	Ephemeroptera Richness	Plecoptera Richness	Trichoptera Richness	Intolerant Taxa Richness	Clinger Taxa Richness	Long-Lived Taxa Richness	Percent Tolerant	Percent Predator	Percent Dominance
PI01	Baetis tricaudatus	Abundance	~	-										X
PI01	Ceratopogoninae	Presence	~	+	X									
PI01	Crangonyx	Abundance & Presence	*/*	+/+	X							X		X
PI01	Eukiefferiella	Abundance & Presence	*/*	-/-	X									X
PI01	Eukiefferiella Claripennis Group	Abundance & Presence	*/*	+/+	X									X
PI01	Eukiefferiella Tirolensis Group	Abundance & Presence	*/*	+/+	X									X
PI01	Gammarus	Abundance & Presence	*/*	-/-	X									X
PI01	Glossosoma	Abundance & Presence	*/*	+/+	X			X		X				X
PI01	Hydropsyche	Abundance & Presence	*/~	+/+	X			X		X				X
PI01	Malenka	Abundance & Presence	*/*	+/+	X		X							X
PI01	Pisidium	Abundance & Presence	*/*	+/+	X						X			X
PI01	Rhyacophila Brunnea/Vemna Group	Abundance & Presence	~/*	+/+	X			X		X	X		X	X
PI01	Simulium	Abundance	*	+								X		X
PI01	Thienemannimyia	Abundance & Presence	~/*	-/-	X								X	X
SFCC	Acari	Abundance & Presence	*/*	-/-	X									X
SFCC	Baetis tricaudatus	Abundance & Presence	~/*	-/-	X	X				X				X
SFCC	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
SFCC	Brillia	Abundance	*	-										X
SFCC	Caecidotea	Abundance & Presence	*/*	+/+	X							X		X
SFCC	Dicranota	Abundance & Presence	~/*	+/+	X								X	X
SFCC	Dicrotendipes	Abundance & Presence	~/~	+/+	X									X
SFCC	Erpobdella	Abundance & Presence	*/*	+/+	X						X	X	X	X
SFCC	Eukiefferiella Claripennis Group	Abundance	*	+										X
SFCC	Glossosoma	Abundance	*	+										X
SFCC	Hydropsyche	Abundance & Presence	*/*	+/+	X			X		X				X
SFCC	Lebertia	Abundance & Presence	*/*	+/+	X									X
SFCC	Malenka	Abundance & Presence	*/~	+/+	X		X							X
SFCC	Narpus concolor	Abundance	~	+										X
SFCC	Parapsyche almota	Presence	~	+	X			X		X	X			
SFCC	Potamopyrgus antipodarum	Abundance & Presence	*/*	+/+	X									X
SFCC	Tipula	Abundance & Presence	~/*	-/-	X						X	X		X
SFCC	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X
SFCT	Acari	Abundance & Presence	*/*	-/-	X									X
SFCT	Antocha	Presence	~	+	X					X				
SFCT	Baetis tricaudatus	Abundance & Presence	*/*	-/-	X	X				X				X
SFCT	Baetis tricaudatus complex	Abundance & Presence	*/*	+/+	X	X				X				X
SFCT	Caecidotea	Abundance	*	+								X		X
SFCT	Corynoneura	Abundance & Presence	~/*	+/+	X									X
SFCT	Glossosoma	Abundance & Presence	~/*	+/+	X			X		X				X
SFCT	Hydropsyche	Presence	*	+	X			X		X				
SFCT	Lebertia	Presence	*	+	X									
SFCT	Lepidostoma	Abundance & Presence	~/~	+/+	X			X						X
SFCT	Pagastia	Presence	~	-	X									
SFCT	Potamopyrgus antipodarum	Abundance & Presence	*/*	+/+	X									X
SFCT	Sperchon	Abundance & Presence	*/*	+/+	X									X
SFCT	Trepaxonemata	Abundance & Presence	*/*	+/+	X									X

## **Appendix G: New Zealand Mudsnail Distribution and Percent Composition by Site over Time**

Appendix G. Sample percentage of New Zealand Mudsnails over the available period of record. Percentage is based on the subsampled total quantity of taxa used to calculate each site's BIBI score.

Site	Stream	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
FA02	Fauntleroy Creek	NA	NA	NA	0	NA	0	NA	0	NA	0
FAMA0851	Fauntleroy Creek	NA	0	NA	0	NA	0	NA	0	NA	0
LF04	Longfellow Creek	NA	NA	NA	0	NA	0	NA	5.8	NA	0.4
LFMA0954	Longfellow Creek	NA	0	NA	0	NA	0	NA	0	NA	0
LFMA2559	Longfellow Creek	NA	0	NA	0	NA	0	NA	0	NA	0
LFMA3396	Longfellow Creek	NA	0	NA	0	NA	0	NA	0	NA	0
LFMA3490	Longfellow Creek	NA	0	NA	0	NA	0	NA	0	NA	0
MA01	Mapes Creek	NA	NA	NA	NA	NA	NA	1.2	50.6	20.4	1.8
MAMA6255	Mapes Creek	NA	0	NA	0	NA	0	NA	NA	NA	0
MOHL	Mohlendorph Creek	0	NA	0	NA	0	NA	NA	NA	0	NA
PI01	Pipers Creek	0	NA	NA	NA	0	NA	0	NA	0	NA
PI02	Pipers Creek	NA	NA	0	NA	0	NA	0.2	NA	0	NA
PIMA6462	Pipers Creek	0	NA	0	NA	0	NA	0	NA	0	NA
PIMA7729	Pipers Creek	0	NA	0	NA	0	NA	0	NA	0	NA
PU01	Puget Creek	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
SCMA9065	Schmitz Creek	NA	0	NA	0	NA	0	NA	0	NA	0
TA03	Taylor Creek	NA	NA	NA	NA	NA	0	NA	0	NA	0
TAEF6250	Taylor Creek	NA	0	NA	0	NA	0	NA	0	NA	0
TAMA_MOUTH	Taylor Creek	NA	NA	NA	NA	NA	NA	NA	0	0	0.2
TAMA7468	Taylor Creek	NA	0	NA	0	NA	0	NA	0	NA	0
TAWF4847	Taylor Creek	NA	NA	NA	0	NA	NA	NA	NA	NA	0
95T	Thornton Creek	0	NA	12.2	80.8	49.6	NA	NA	NA	1.8	89.6
KNKC	Thornton Creek	0	NA	0	0	0.2	0	0.4	2.1	0	1.2
KNKT	Thornton Creek	0	NA	0	0	0	NA	0	3.2	44.6	52
KNKT_U	Thornton Creek	NA	NA	NA	NA	NA	NA	NA	87.9	72	82.4
NFCC	Thornton Creek	0	NA	0	0	0	0	0	0.9	0	2.8
NFCT	Thornton Creek	0	NA	0	0	0	NA	0.2	0	0.6	1.4
SFCC	Thornton Creek	0	NA	0	0	0	0.2	0.6	3	1.6	0.6
SFCT	Thornton Creek	0	NA	0	0	0	NA	0.8	3.6	4	0.2
TMMA1199	Thornton Creek	NA	NA	0	NA	0	NA	0.6	NA	0.4	NA
TMMA3168	Thornton Creek	NA	NA	27.2	NA	71	NA	14.8	NA	2.4	NA
TMMA8751	Thornton Creek	1.2	NA	53.2	NA	33	NA	50.4	NA	10.6	NA
TNMA0609	Thornton Creek	0	NA	0	NA	0	NA	0	NA	0.2	NA
TNMA6462	Thornton Creek	0	NA	NA	NA	0	NA	0	NA	0.2	NA
TNMA7673	Thornton Creek	0	NA	0	NA	0	NA	0	NA	0	NA
TSMA6612	Thornton Creek	0	NA	0	NA	0.2	NA	0	NA	0.2	NA
TSMA7774	Thornton Creek	0	NA	0	NA	0	NA	0	NA	0.2	NA
PIVE1895	Venema Creek	0	NA	0	NA	0	NA	0	NA	0	NA
VE NE	Venema Creek	0	NA	0	NA	0	NA	0	NA	0	NA