Appendix D – Mean and standard deviation of contribution to invertebrates from each primary source included in mixing models. Site Codes: ULN = Upper Lindsey Slough, LWR = Lower, UCA = Upper Cache Slough. Primary Producer Categories: BD = benthic diatoms. EM = emergent vegetation, GFA = green filamentous algae, Phyto = phytoplankton, SAV= submersed aquatic vegetation.

Region	Species	Source	Category	Spring		Summer	
				Mean	SD	Mean	SD
LWR	*Americorophium spinicorne*	*Benthic diatoms*	BD	0.02	0.05	---	---
LWR	*Americorophium spinicorne*	C. caroliniana/E. densa/L. peploides	SAV	0.05	0.14	---	---
LWR	*Americorophium spinicorne*	*Green filamentous algae*	GFA	0.05	0.10	---	---
LWR	*Americorophium spinicorne*	*J. baltica*	EM	0.03	0.07	---	---
LWR	*Americorophium spinicorne*	C. demersum/M. spicatum	SAV	0.02	0.06	---	---
LWR	*Americorophium spinicorne*	*Phytoplankton*	Phyto	0.15	0.23	---	---
LWR	*Americorophium spinicorne*	*Typha sp./S. californicus*	EM	0.68	0.36	---	---
LWR	Coenogrionidae	C. caroliniana/E. densa/L. peploides	SAV	---	---	0.44	0.40
LWR	Coenogrionidae	*Green filamentous algae*	GFA	---	---	0.04	0.08
LWR	Coenogrionidae	*J. baltica*	EM	---	---	0.07	0.12
LWR	Coenogrionidae	C. demersum/M. spicatum	SAV	---	---	0.14	0.22
LWR	Coenogrionidae	*Phytoplankton*	Phyto	---	---	0.04	0.10
LWR	Coenogrionidae	Typha sp./S. californicus	EM	---	---	0.27	0.36
LWR	Coenogrionidae_LCA	*Benthic diatoms*	BD	0.06	0.07	---	---
LWR	Coenogrionidae_LCA	C. caroliniana/E. densa/L. peploides	SAV	0.12	0.19	---	---
LWR	Coenogrionidae_LCA	*Green filamentous algae*	GFA	0.08	0.08	---	---
LWR	Coenogrionidae_LCA	*J. baltica*	EM	0.05	0.07	---	---
LWR	Coenogrionidae_LCA	C. demersum/M. spicatum	SAV	0.05	0.08	---	---
LWR	Coenogrionidae_LCA	*Phytoplankton*	Phyto	0.43	0.18	---	---
LWR	Coenogrionidae_LCA	Typha sp./S. californicus	EM	0.21	0.23	---	---
LWR	Coenogrionidae_LLN	*Benthic diatoms*	BD	0.16	0.19	---	---
LWR	Coenogrionidae_LLN	C. caroliniana/E. densa/L. peploides	SAV	0.11	0.14	---	---
LWR	Coenogrionidae_LLN	*Green filamentous algae*	GFA	0.35	0.16	---	---
LWR	Coenogrionidae_LLN	*J. baltica*	EM	0.08	0.10	---	---
LWR	Coenogrionidae_LLN	C. demersum/M. spicatum	SAV	0.09	0.13	---	---
LWR	Coenogrionidae_LLN	*Phytoplankton*	Phyto	0.08	0.07	---	---
LWR	Coenogrionidae_LLN	Typha sp./S. californicus	EM	0.13	0.15	---	---
LWR	*Corbicula fluminea*	*Benthic diatoms*	BD	0.04	0.09	---	---
LWR	*Corbicula fluminea*	C. caroliniana/E. densa/L. peploides	SAV	0.41	0.42	---	---
LWR	*Corbicula fluminea*	*Green filamentous algae*	GFA	0.03	0.05	---	---
LWR	*Corbicula fluminea*	*J. baltica*	EM	0.08	0.19	---	---
LWR	*Corbicula fluminea*	C. demersum/M. spicatum	SAV	0.09	0.20	---	---
LWR	*Corbicula fluminea*	*Phytoplankton*	Phyto	0.27	0.29	---	---
LWR	*Corbicula fluminea*	Typha sp./S. californicus	EM	0.08	0.17	---	---
LWR	*Palaemon modestus*	*Benthic diatoms*	BD	0.08	0.10	---	---
LWR	*Palaemon modestus*	C. caroliniana/E. densa/L. peploides	SAV	0.21	0.23	---	---

Region	Species	Source	Category	Spring		Summer	
				Mean	SD	Mean	SD
LWR	*Palaemon modestus*	*Green filamentous algae*	GFA	0.09	0.08	---	---
LWR	*Palaemon modestus*	*J. baltica*	EM	0.10	0.11	---	---
LWR	*Palaemon modestus*	C. demersum/M. spicatum	SAV	0.08	0.10	---	---
LWR	*Palaemon modestus*	*Phytoplankton*	Phyto	0.21	0.14	---	---
LWR	*Palaemon modestus*	Typha sp./S. californicus	EM	0.24	0.21	---	---
LWR	*Gammarus daiberi*	*Benthic diatoms*	BD	0.11	0.17	---	---
LWR	*Gammarus daiberi*	C. caroliniana/E. densa/L. peploides	SAV	0.20	0.23	0.41	0.41
LWR	*Gammarus daiberi*	*Green filamentous algae*	GFA	0.35	0.17	0.06	0.11
LWR	*Gammarus daiberi*	*J. baltica*	EM	0.05	0.10	0.09	0.16
LWR	*Gammarus daiberi*	C. demersum/M. spicatum	SAV	0.06	0.11	0.18	0.29
LWR	*Gammarus daiberi*	*Phytoplankton*	Phyto	0.06	0.08	0.03	0.07
LWR	*Gammarus daiberi*	Typha sp./S. californicus	EM	0.17	0.22	0.23	0.35
LWR	*Hyalella* sp.	*Benthic diatoms*	BD	0.21	0.20	---	---
LWR	*Hyalella* sp.	C. caroliniana/E. densa/L. peploides	SAV	0.04	0.08	0.13	0.26
LWR	*Hyalella* sp.	*Green filamentous algae*	GFA	0.62	0.14	0.53	0.18
LWR	*Hyalella* sp.	*J. baltica*	EM	0.04	0.08	0.10	0.12
LWR	*Hyalella* sp.	C. demersum/M. spicatum	SAV	0.06	0.10	0.18	0.15
LWR	*Hyalella* sp.	*Phytoplankton*	Phyto	0.01	0.03	0.02	0.04
LWR	*Hyalella* sp.	Typha sp./S. californicus	EM	0.02	0.05	0.04	0.08
LWR	Physidae	*Benthic diatoms*	BD	0.16	0.19	---	---
LWR	Physidae	C. caroliniana/E. densa/L. peploides	SAV	0.03	0.08	0.11	0.14
LWR	Physidae	*Green filamentous algae*	GFA	0.70	0.14	0.69	0.10
LWR	Physidae	*J. baltica*	EM	0.02	0.05	0.05	0.06
LWR	Physidae	C. demersum/M. spicatum	SAV	0.06	0.09	0.06	0.07
LWR	Physidae	*Phytoplankton*	Phyto	0.01	0.02	0.04	0.05
LWR	Physidae	Typha sp./S. californicus	EM	0.01	0.04	0.07	0.09
LWR	*Pseudodiaptomus forbesi*	*Benthic diatoms*	BD	0.02	0.04	---	---
LWR	*Pseudodiaptomus forbesi*	C. caroliniana/E. densa/L. peploides	SAV	0.05	0.12	---	---
LWR	*Pseudodiaptomus forbesi*	*Green filamentous algae*	GFA	0.02	0.04	---	---
LWR	*Pseudodiaptomus forbesi*	*J. baltica*	EM	0.02	0.05	---	---
LWR	*Pseudodiaptomus forbesi*	C. demersum/M. spicatum	SAV	0.02	0.05	---	---
LWR	*Pseudodiaptomus forbesi*	*Phytoplankton*	Phyto	0.83	0.16	---	---
LWR	*Pseudodiaptomus forbesi*	Typha sp./S. californicus	EM	0.05	0.10	---	---
LWR	*Sinocalanus doerri*	*Benthic diatoms*	BD	0.02	0.03	---	---
LWR	*Sinocalanus doerri*	C. caroliniana/E. densa/L. peploides	SAV	0.03	0.06	---	---
LWR	*Sinocalanus doerri*	*Green filamentous algae*	GFA	0.02	0.04	---	---
LWR	*Sinocalanus doerri*	*J. baltica*	EM	0.02	0.04	---	---
LWR	*Sinocalanus doerri*	C. demersum/M. spicatum	SAV	0.02	0.04	---	---
LWR	*Sinocalanus doerri*	*Phytoplankton*	Phyto	0.85	0.10	---	---
LWR	*Sinocalanus doerri*	Typha sp./S. californicus	EM	0.05	0.08	---	---
UCA	*Americorophium spinicorne*	*Benthic diatoms*	BD	---	---	0.07	0.08
UCA	*Americorophium spinicorne*	C. demersum/M. spicatum	SAV	---	---	0.08	0.15
UCA	*Americorophium spinicorne*	*Phytoplankton*	Phyto	---	---	0.63	0.18
UCA	*Americorophium spinicorne*	*S. californicus (Upstream)*	EM	---	---	0.10	0.15
UCA	*Americorophium spinicorne*	S. californicus (Downstream)	EM	---	---	0.12	0.17

Region	Species	Source	Category	Spring		Summer	
				Mean	SD	Mean	SD
UCA	Anisoptera	*Benthic diatoms*	BD	---	---	0.06	0.07
UCA	Anisoptera	C. demersum/M. spicatum	SAV	---	---	0.15	0.18
UCA	Anisoptera	*Phytoplankton*	Phyto	---	---	0.45	0.15
UCA	Anisoptera	S. californicus (Upstream)	EM	---	---	0.22	0.21
UCA	Anisoptera	*S. californicus (Downstream)*	EM	---	---	0.12	0.14
UCA	Chironomidae	*Benthic diatoms*	BD	0.04	0.07	0.03	0.05
UCA	Chironomidae	C. demersum/M. spicatum	SAV	0.06	0.15	0.28	0.34
UCA	Chironomidae	*Phytoplankton*	Phyto	0.44	0.25	0.07	0.11
UCA	Chironomidae	S. californicus (Upstream)	EM	0.35	0.34	0.52	0.41
UCA	Chironomidae	*S. californicus (Downstream)*	EM	0.11	0.20	0.10	0.20
UCA	Cladocera	Benthic diatoms	BD	0.02	0.04	---	---
UCA	Cladocera	*C. demersum/M. spicatum*	SAV	0.05	0.11	---	---
UCA	Cladocera	*Phytoplankton*	Phyto	0.83	0.18	---	---
UCA	Cladocera	S. californicus (Upstream)	EM	0.06	0.13	---	---
UCA	Cladocera	*S. californicus (Downstream)*	EM	0.04	0.10	---	---
UCA	Coenogrionidae	Benthic diatoms	BD	0.02	0.05	---	---
UCA	Coenogrionidae	*C. demersum/M. spicatum*	SAV	0.08	0.20	---	---
UCA	Coenogrionidae	Phytoplankton	Phyto	0.22	0.29	---	---
UCA	Coenogrionidae	*S. californicus (Upstream)*	EM	0.57	0.43	---	---
UCA	Coenogrionidae	*S. californicus (Downstream)*	EM	0.12	0.25	---	---
UCA	*Palaemon modestus*	Benthic diatoms	BD	0.02	0.07	0.05	0.05
UCA	*Palaemon modestus*	*C. demersum/M. spicatum*	SAV	0.61	0.42	0.18	0.18
UCA	*Palaemon modestus*	Phytoplankton	Phyto	0.18	0.26	0.25	0.08
UCA	*Palaemon modestus*	*S. californicus (Upstream)*	EM	0.09	0.22	0.43	0.28
UCA	*Palaemon modestus*	S. californicus (Downstream)	EM	0.10	0.22	0.10	0.11
UCA	*Gammarus daiberi*	*Benthic diatoms*	BD	0.03	0.08	0.03	0.06
UCA	*Gammarus daiberi*	*C. demersum/M. spicatum*	SAV	0.30	0.41	0.28	0.39
UCA	*Gammarus daiberi*	Phytoplankton	Phyto	0.14	0.21	0.17	0.24
UCA	*Gammarus daiberi*	*S. californicus (Upstream)*	EM	0.44	0.42	0.43	0.43
UCA	*Gammarus daiberi*	S. californicus (Downstream)	EM	0.09	0.21	0.09	0.21
UCA	*Hyalella* sp.	*Benthic diatoms*	BD	---	---	0.03	0.05
UCA	*Hyalella* sp.	C. demersum/M. spicatum	SAV	---	---	0.13	0.19
UCA	*Hyalella* sp.	*Phytoplankton*	Phyto	---	---	0.62	0.19
UCA	*Hyalella* sp.	*S. californicus (Upstream)*	EM	---	---	0.14	0.18
UCA	*Hyalella* sp.	S. californicus (Downstream)	EM	---	---	0.08	0.13
UCA	Physidae	*Benthic diatoms*	BD	0.11	0.15	0.15	0.15
UCA	Physidae	C. demersum/M. spicatum	SAV	0.05	0.13	0.14	0.22
UCA	Physidae	*Phytoplankton*	Phyto	0.06	0.12	0.07	0.10
UCA	Physidae	S. californicus (Upstream)	EM	0.27	0.36	0.25	0.31
UCA	Physidae	*S. californicus (Downstream)*	EM	0.51	0.44	0.40	0.40
UCA	*Pseudodiaptomus forbesi*	*Benthic diatoms*	BD	0.01	0.02	---	---
UCA	*Pseudodiaptomus forbesi*	C. demersum/M. spicatum	SAV	0.01	0.04	---	---
UCA	*Pseudodiaptomus forbesi*	*Phytoplankton*	Phyto	0.94	0.14	---	---
UCA	*Pseudodiaptomus forbesi*	S. californicus (Upstream)	EM	0.03	0.11	---	---
UCA	*Pseudodiaptomus forbesi*	*S. californicus (Downstream)*	EM	0.02	0.07	---	---

Region	Species	Source	Category	Spring		Summer	
				Mean	SD	Mean	SD
UCA	*Sinocalanus doerri*	Benthic diatoms	BD	0.01	0.02	---	---
UCA	*Sinocalanus doerri*	*C. demersum/M. spicatum*	SAV	0.02	0.06	---	---
UCA	*Sinocalanus doerri*	*Phytoplankton*	Phyto	0.93	0.15	---	---
UCA	*Sinocalanus doerri*	S. californicus (Upstream)	EM	0.04	0.12	---	---
UCA	*Sinocalanus doerri*	*S. californicus (Downstream)*	EM	0.02	0.06	---	---
ULN	*Americorophium spinicorne*	B. maritimus/S. acutus	EM	---	---	0.14	0.21
ULN	*Americorophium spinicorne*	*C. demersum/E. densa*	SAV	---	---	0.19	0.23
ULN	*Americorophium spinicorne*	Green filamentous algae	GFA	---	---	0.03	0.06
ULN	*Americorophium spinicorne*	*J. baltica/S. californicus*	EM	---	---	0.09	0.18
ULN	*Americorophium spinicorne*	*M. spicatum*	SAV	---	---	0.07	0.12
ULN	*Americorophium spinicorne*	Phytoplankton	Phyto	---	---	0.36	0.17
ULN	*Americorophium spinicorne*	*Typha sp./I. pseudocoras*	EM	---	---	0.11	0.24
ULN	Cladocera	*Benthic diatoms*	BD	0.07	0.18	---	---
ULN	Cladocera	B. maritimus/S. acutus	EM	0.14	0.28	---	---
ULN	Cladocera	*C. demersum/E. densa*	SAV	0.07	0.15	---	---
ULN	Cladocera	*J. baltica/S. californicus*	EM	0.26	0.38	---	---
ULN	Cladocera	M. spicatum	SAV	0.06	0.15	---	---
ULN	Cladocera	*Phytoplankton*	Phyto	0.34	0.36	---	---
ULN	Cladocera	*Typha sp./I. pseudocoras*	EM	0.08	0.21	---	---
ULN	Coenagrionidae	Benthic diatoms	BD	0.19	0.23	---	---
ULN	Coenagrionidae	*B. maritimus/S. acutus*	EM	0.24	0.30	0.15	0.27
ULN	Coenagrionidae	*C. demersum/E. densa*	SAV	0.14	0.17	0.13	0.21
ULN	Coenagrionidae	Green filamentous algae	GFA	---	---	0.03	0.06
ULN	Coenagrionidae	*J. baltica/S. californicus*	EM	0.20	0.27	0.33	0.39
ULN	Coenagrionidae	M. spicatum	SAV	0.11	0.14	0.08	0.16
ULN	Coenagrionidae	*Phytoplankton*	Phyto	0.06	0.08	0.07	0.10
ULN	Coenagrionidae	Typha sp./I. pseudocoras	EM	0.07	0.10	0.20	0.31
ULN	*Corbicula fluminea*	*Benthic diatoms*	BD	0.02	0.08	---	---
ULN	*Corbicula fluminea*	*B. maritimus/S. acutus*	EM	0.09	0.24	---	---
ULN	*Corbicula fluminea*	C. demersum/E. densa	SAV	0.13	0.26	---	---
ULN	*Corbicula fluminea*	*J. baltica/S. californicus*	EM	0.01	0.05	---	---
ULN	*Corbicula fluminea*	M. spicatum	SAV	0.74	0.38	---	---
ULN	*Corbicula fluminea*	*Phytoplankton*	Phyto	0.01	0.03	---	---
ULN	*Corbicula fluminea*	*Typha sp./I. pseudocoras*	EM	0.01	0.03	---	---
ULN	*Palaemon modestus*	Benthic diatoms	BD	0.05	0.06	---	---
ULN	*Palaemon modestus*	*B. maritimus/S. acutus*	EM	0.20	0.25	0.25	0.33
ULN	*Palaemon modestus*	C. demersum/E. densa	SAV	0.43	0.23	0.23	0.26
ULN	*Palaemon modestus*	*Green filamentous algae*	GFA	---	---	0.06	0.08
ULN	*Palaemon modestus*	*J. baltica/S. californicus*	EM	0.11	0.15	0.14	0.24
ULN	*Palaemon modestus*	M. spicatum	SAV	0.04	0.06	0.25	0.29
ULN	*Palaemon modestus*	*Phytoplankton*	Phyto	0.10	0.08	0.03	0.05
ULN	*Palaemon modestus*	Typha sp./I. pseudocoras	EM	0.08	0.10	0.04	0.08
ULN	*Gammarus daiberi*	*B. maritimus/S. acutus*	EM	---	---	0.09	0.22
ULN	*Gammarus daiberi*	*C. demersum/E. densa*	SAV	---	---	0.10	0.23
ULN	*Gammarus daiberi*	Green filamentous algae	GFA	---	---	0.03	0.07

Region	Species	Source	Category	Spring		Summer	
				Mean	SD	Mean	SD
ULN	*Gammarus daiberi*	*J. baltica/S. californicus*	EM	---	---	0.21	0.35
ULN	*Gammarus daiberi*	M. spicatum	SAV	---	---	0.06	0.14
ULN	*Gammarus daiberi*	*Phytoplankton*	Phyto	---	---	0.13	0.17
ULN	*Gammarus daiberi*	*Typha sp./I. pseudocoras*	EM	---	---	0.39	0.43
ULN	*Hyalella* sp.	Benthic diatoms	BD	0.23	0.36	---	---
ULN	*Hyalella* sp.	*Green filamentous algae*	GFA	---	---	0.04	0.06
ULN	*Hyalella* sp.	B. maritimus/S. acutus	EM	0.14	0.28	0.25	0.33
ULN	*Hyalella* sp.	*C. demersum/E. densa*	SAV	0.07	0.17	0.24	0.29
ULN	*Hyalella* sp.	*J. baltica/S. californicus*	EM	0.19	0.33	0.24	0.34
ULN	*Hyalella* sp.	M. spicatum	SAV	0.30	0.37	0.12	0.20
ULN	*Hyalella* sp.	*Phytoplankton*	Phyto	0.04	0.11	0.04	0.07
ULN	*Hyalella* sp.	Typha sp./I. pseudocoras	EM	0.04	0.11	0.07	0.16
ULN	Isopoda	*B. maritimus/S. acutus*	EM	---	---	0.10	0.19
ULN	Isopoda	*C. demersum/E. densa*	SAV	---	---	0.08	0.14
ULN	Isopoda	Green filamentous algae	GFA	---	---	0.10	0.14
ULN	Isopoda	*J. baltica/S. californicus*	EM	---	---	0.12	0.22
ULN	Isopoda	M. spicatum	SAV	---	---	0.52	0.40
ULN	Isopoda	*Phytoplankton*	Phyto	---	---	0.03	0.06
ULN	Isopoda	*Typha sp./I. pseudocoras*	EM	---	---	0.05	0.11
ULN	Physidae	Benthic diatoms	BD	0.15	0.30	---	---
ULN	Physidae	*Green filamentous algae*	GFA	---	---	0.09	0.11
ULN	Physidae	B. maritimus/S. acutus	EM	0.16	0.31	0.24	0.32
ULN	Physidae	*C. demersum/E. densa*	SAV	0.15	0.26	0.31	0.34
ULN	Physidae	*J. baltica/S. californicus*	EM	0.06	0.18	0.05	0.11
ULN	Physidae	M. spicatum	SAV	0.44	0.41	0.26	0.35
ULN	Physidae	*Phytoplankton*	Phyto	0.02	0.07	0.02	0.03
ULN	Physidae	Typha sp./I. pseudocoras	EM	0.02	0.06	0.03	0.07
ULN	*Pseudodiaptomus forbesi*	*Benthic diatoms*	BD	0.02	0.08	---	---
ULN	*Pseudodiaptomus forbesi*	*B. maritimus/S. acutus*	EM	0.25	0.38	---	---
ULN	*Pseudodiaptomus forbesi*	C. demersum/E. densa	SAV	0.56	0.44	---	---
ULN	*Pseudodiaptomus forbesi*	*J. baltica/S. californicus*	EM	0.03	0.12	---	---
ULN	*Pseudodiaptomus forbesi*	M. spicatum	SAV	0.02	0.05	---	---
ULN	*Pseudodiaptomus forbesi*	*Phytoplankton*	Phyto	0.12	0.25	---	---
ULN	*Pseudodiaptomus forbesi*	*Typha sp./I. pseudocoras*	EM	0.02	0.08	---	---
ULN	*Sinocalanus doerri*	Benthic diatoms	BD	0.01	0.04	---	---
ULN	*Sinocalanus doerri*	*B. maritimus/S. acutus*	EM	0.05	0.11	---	---
ULN	*Sinocalanus doerri*	C. demersum/E. densa	SAV	0.06	0.13	---	---
ULN	*Sinocalanus doerri*	*J. baltica/S. californicus*	EM	0.02	0.06	---	---
ULN	*Sinocalanus doerri*	*M. spicatum*	SAV	0.01	0.03	---	---
ULN	*Sinocalanus doerri*	Phytoplankton	Phyto	0.84	0.17	---	---
ULN	*Sinocalanus doerri*	*Typha sp./I. pseudocoras*	EM	0.01	0.04	---	---