# APPENDIX 8A

TABLES OF MACROINVERTEBRATE TAXA AND METRICS RESULTS

Table 8A-1 (Sheet 1 of 4). All Fall Creek & Klamath River taxa (2002 Pacificorp sampling) that are designated as tolerant, intolerant or long-lived by ABA, Inc. Versions 1.0 & 2.0 coding, or tolerant by CAMLnet (CA F&G). This list does not include taxa designated as intolerant by CAMLnet (would roughly double the number of taxa involved).

| Benthic invertebrate taxa | CAMLnet distinct taxa | ABA distinct taxa | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2 ABA tolerance value | Life Cycle Duration Category | Version 1 tolerant taxa-ABA | Version 2 tolerant taxa-ABA | CAMLnet tolerant taxa (8-10) | Version 1 intolerant taxa-ABA | Version 2 intolerant taxa-ABA | Version 1 long-lived taxa-ABA | Version 2 long-lived taxa-ABA | CAMLnet intolerant taxa (0-2) | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Non insects** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Porifera | 1 | 1 | 8 | none | 8 | 9 | Y | Y | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.09 | |
| *Hydra* | 1 | 1 | 7 | 5 | 9 | 2 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.08 | | | | | | | | |
| Oligochaeta | 1 | 1 | 5 | none | 7 | 4 | | Y | | | | | | | 1.58 | 9.42 | 2.02 | 1.1 | 3.42 | 5.92 | 0.68 | 0.61 | 0.84 | 1.72 | 32.26 | 0.93 | 79.59 | 0.48 | 62.5 | 7.04 | 85.71 | 6.62 | 40 | 0.52 | 15.79 | 1.85 | 0.88 | 0.95 | 0.92 | 0.93 | 0.59 | 3.89 | 1.66 | 1.12 | 0.3 | 0.18 | 1.71 |
| *Hirudinea | 1 | 1 | 10 | 10 | 8 | 9 | Y | Y | Y | | | Y | Y | | 0.1 | | | | 0.29 | | 0.18 | | | 0.05 | | | | | | 0.15 | 0.62 | 0.77 | | 0.11 | | | 0.18 | | 0.13 | | | 0.06 | | | 2.72 | 1.71 | 3.99 |
| *Helobdella stagnalis* | 1 | 1 | 9 | 6 | 9 | ?7 | Y | Y | | | | Y | Y | | | 2.7 | | | | | | | | | | | | | | | | | | | | | 0.06 | | | | | | | | | 1.56 | 0.66 | 1.05 |
| *Branchiodellida | | 1 | 7 | reject | 7 | 4 | | Y | | | | | | | | | | | | | | | | | | | | | | | 0.62 | | | | | | | | | | | | | | | | | |
| *Manayunkia speciosa* | 1 | 1 | 6 | none | 8 | ?4 | | Y | | | | | | | | | | | | | 1.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ferrissia* | | | 6 | 6 | 7 | 4 | Y | Y | | | | | | | | | | | | | | 0.12 | | | | | | 0.07 | | | | | | | | | | | | | | | | | | | | |
| Hydrobiidae | 1 | | 8 | 8 | 5 | 9 | | | Y | | | Y | Y | | 48.6 | 33.07 | 31.42 | 40.1 | 15.47 | 27.3 | 0.04 | 0.13 | | | | | | | | | | | | 0.11 | | 1.96 | 0.4 | | | | | 0.24 | | | | | |
| *Colligyrus* | | 1 | 3 | none | 3 | 9 | | | | Y | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fluminicola* | | 1 | 8 | 5 | 6* | 5 | Y | | | | | Y | | | | | | | | | | 5.78 | 5.05 | 0.11 | | 0.08 | | 0.07 | | | | | | | | | | | | 0.33 | 0.02 | | | | | | | |
| *Pyrgulopsis* | | 1 | 3 | none | 3 | 5 | | | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymnaeidae | | | 8 | 6 | 8 | 7 | Y | Y | | | | Y | Y | | | | | | | | | | | | | | 3.06 | | 20.8 | | | | | | 71.05 | | | | | | | | | | | | |
| *Fossaria* | 1 | 1 | 8 | 8 | 7 | 7 | Y | Y | Y | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lanx* | 1 | 1 | 6 | 6 | 3 | 7 | | | | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Radix auricularia* | 1 | 1 | 8 | 6 | 8 | 7 | Y | Y | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Physella/Physa* | 1 | 1 | 8 | 8 | 9 | 6 | Y | Y | Y | | | | Y | | | | | | | | 0.11 | | 0.11 | | | | | | | | | | | 0.11 | | 0.13 | 0.32 | | 0.18 | 0.51 | 0.21 | 0.65 | 0.24 | | 0.15 | | |
| *Gyraulus* | 1 | 1 | 8 | 8 | 9 | 5 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.06 | | | 0.23 | | 0.06 | | | | | |
| *Planorbella* | 1 | 1 | 7 | none | 7 | 5 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vorticifex* | 1 | 1 | 8 | none | 4 | 5 | Y | | | | | Y | | | | | | | | | 0.04 | 0.31 | 1.05 | 0.22 | | | | | | | | | | 0.09 | | 0.58 | 0.77 | | 1.53 | 10.5 | 0.07 | 1.06 | 0.73 | 0.21 | | | |
| *Juga* | 1 | 1 | 7 | 7 | 3* | 9 | Y | | Y | | Y | Y | Y | | 6.1 | 11.56 | 3.63 | 19.9 | 7.66 | 10.86 | | 1.25 | 0.32 | | | | | | | | | | | | | | | | 0.05 | | | | | | | | |
| *Valvata* | 1 | 1 | 8 | 8 | 5 | 7 | Y | | Y | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Musculium* | 1 | 1 | 8 | 6 | 7 | 5 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisidium* | 1 | 1 | 8 | 8 | 5* | 5 | | | Y | | | | | | 0.5 | 2.58 | 1.24 | 0.62 | 0.06 | 0.15 | 0.1 | | | 0.57 | | | | 0.27 | | 0.2 | 1.24 | | | | | 0.05 | | 0.11 | | 0.16 | | | | | | | |
| *Sphaerium* | 1 | 1 | 8 | 8 | 7 | 5 | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ostracoda | 1 | 1 | 8 | 8 | 6 | 2 | | | Y | | | | | | | | | | | 0.45 | | | | | | | | | | | | | | | | | | | | | | | | 0.11 | | | | |
| *Gammarus* | 1 | 1 | 6 | 6 | 9 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.09 | | |
| *Crangonyx* | 1 | 1 | 6 | 4 | 8 | 4 | | Y | | | | | | | | | | | | | | 0.1 | | 0.25 | | | | | | | 3.11 | | | | | | 0.16 | | 0.16 | 0.04 | | | | 0.17 | | | |
| *Stygobromus* | 1 | 1 | 4 | 4 | 3 | 4 | | | | | Y | | | | | 0.06 | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hyalella azteca* | 1 | 1 | 8 | 8 | 9 | | Y | Y | Y | | | | | | | | | | | | 0.27 | | 0.11 | 2.07 | | | | | | | | | | 0.19 | | 3.36 | 18.9 | 0.5 | 9.91 | 9.7 | 0.05 | 5.27 | 0.08 | | 4.63 | 0.45 | 0.22 |
| *Caecidotea* | 1 | 1 | 8 | 8 | 9 | 4 | Y | Y | Y | | | | | | | | | | | | 1.08 | 0.4 | | 0.41 | | 0.29 | | 0.14 | | 0.95 | | 1.59 | | 0.19 | | 0.85 | 10.7 | 0.34 | 11 | 0.81 | 0.18 | | | | 4.63 | 18.5 | 6.87 |
| *Pacifasticus* | 1 | 1 | 6 | 6 | 7 | 7 | | Y | | | | Y | Y | | | | | | | | | 0.1 | 0.11 | | | | | | | | | | | | | | | | | | | | | 0.17 | | | |
| **Odonota** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aeshnidae | 1 | 1 | | none | 9 | 7 | Y | Y | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Octogomphus* | | | | 4 | 5 | 7 | | | | | | Y | Y | | 0.2 | 0.05 | 0.13 | 1.38 | 0.17 | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Octogomphus specularis* | 1 | 1 | 4 | 4 | 5 | 7 | | | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ophiogomphus* | 1 | 1 | 4 | 4 | 8 | 7 | Y | Y | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | 0.63 | 0.89 | 0.25 | 2.44 | 2.13 | 0.69 | | | |
| Libellulidae | 1 | 1 | | 9 | 9 | 7 | Y | Y | Y | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hetaerina* | | 1 | | 6 | 7 | ?5 | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.04 | | | | | | | | |
| **Hetaerina americana* | 1 | | 6 | 6 | 7 | ?5 | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coenagrionidae | 1 | 1 | 9 | none | 9 | 6 | Y | Y | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.07 | | | | | 0.1 | | |
| *Argia* | 1 | 1 | | 7 | 9 | 6 | Y | Y | Y | | | | Y | | | | 0.22 | | | | 0.4 | 0.1 | | | | | | | | | | 0.03 | | | | 0.13 | 0.31 | 0.73 | | 0.69 | 0.05 | 0.17 | 0.21 | 0.1 | 0.05 | | |
| **Ephemeroptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ameletus | | | | 0 | | | | | | | | | | Y | | | | | | | | 0.19 | 0.21 | | | | | 0.14 | | | | | | | | | | | | | | | | | | | | |
| Baetidae | 1 | 1 | 4 | 4 | 7 | 4 | Y | Y | | | | | | | | | | | | | | | | 0.14 | | | | 1.36 | | 0.15 | | 1.79 | | 1.15 | | | | 0.34 | 0.11 | | | | | | | | |
| *Acentrella* | 1 | 1 | 6 | 4 | 7 | 4 | | Y | | | | | | | | | | | | | 0.2 | 0.22 | 6.86 | 2.81 | | 16.1 | | 18.29 | | 9.22 | | 15.03 | | 10.87 | | 0.05 | 0.37 | 0.28 | 8 | 3.98 | 4.48 | 14.87 | 8.43 | 12.9 | | 0.18 | |
| *Baetis tricaudatus* | 1 | 1 | 6 | 6 | 7 | 2 | | Y | | | | | | | 2.4 | 2.43 | 1.4 | 4.37 | 27.72 | 19.47 | 0.96 | 8.34 | 10.86 | 10.3 | | 9.03 | | 4.49 | 4.17 | 12.6 | | 10.03 | | 9.22 | | 4.64 | 2.99 | 7.51 | 2.08 | 0.96 | 1.55 | 0.25 | 0.51 | 0.31 | 15.26 | 7.88 | 15.57 |
| *Callibaetis* | 1 | 1 | 9 | 9 | 9 | 4 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fallceon quilleri* | 1 | 1 | | 4 | 8 | 2 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.06 | | 0.05 | 0.18 | 0.28 | 2.47 | 0.38 | | | | |
| *Caenis* | 1 | 1 | 7 | 7 | 9 | 4 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Caudatella* | 1 | | 1 | 1 | 3 | 5 | | | | Y | Y | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Caudatella heterocaudata* | | 1 | 1 | 1 | 4 | 5 | | | | Y | | | | Y | | | | | | | | 0.13 | 0.06 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Caudatella hystrix* | | 1 | 2 | 1 | 3 | 5 | | | | Y | Y | | | Y | | | | 0.09 | 2.06 | 3.47 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella* | 1 | | 1 | 0 | 4 | 7 | | | | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella doddsi* | | 1 | 1 | 0 | 3 | 7 | | | | Y | Y | | Y | Y | | | | 0.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella spinifera* | | 1 | 0 | 0 | 2 | 7 | | | | Y | Y | | Y | Y | 0.15 | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ephemerella* | 1 | | 3 | none | 7 | 5 | | Y | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Table 8A-1 (Sheet 2 of 4). All Fall Creek & Klamath River taxa (2002 Pacificorp sampling) that are designated as tolerant, intolerant or long-lived by ABA, Inc. Versions 1.0 & 2.0 coding, or tolerant by CAMLnet (CA F&G). This list does not include taxa designated as intolerant by CAMLnet (would roughly double the number of taxa involved).

| Benthic invertebrate taxa | CAMLnet distinct taxa | ABA distinct taxa | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2 ABA tolerance value | Life Cycle Duration Category | Version 1 tolerant taxa-ABA | Version 2 tolerant taxa-ABA | CAMLnet tolerant taxa (8-10) | Version 1 intolerant taxa-ABA | Version 2 intolerant taxa-ABA | Version 1 long-lived taxa-ABA | Version 2 long-lived taxa-ABA | CAMLnet intolernt taxa (0-2) | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Ephemerella inermis* | | 1 | 3 | 1 | 7 | 4 | | Y | | | | | | Y | 2.05 | 0.05 | 0.32 | 0.89 | 1.92 | 0.62 | | | | 0.38 | | | | 0.07 | | 0.07 | | 0.03 | | 1.17 | | | | 0.67 | 1.8 | | | 0.08 | | | 8.36 | | |
| *Serratella micheneri* | | 1 | 2 | 1 | 7 | ?4 | | Y | | | | | | Y | | | | | | | | | | | | | | | | 0.13 | | 0.03 | | 1.02 | | | | 0.2 | 1.8 | 1.23 | 1.08 | 0.18 | 0.82 | 0.17 | 0.3 | | |
| *Cinygma* | | | | | | | | | | | | | | Y | | 0.34 | 0.06 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhithrogena* | | | | 0 | | | | | | | | | | Y | | | | | 0.12 | | | | 0.11 | | | 0.08 | | 0.14 | | 1.67 | | 0.73 | | 1.52 | | | | | | | | | 0.1 | 1.51 | | | |
| *Epeorus grandis* | | 1 | 0 | 0 | 3 | 5 | | | | Y | Y | | | Y | | | | | 0.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Asioplax* | 1 | 1 | 7 | 4 | 8 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.36 | 1.05 | 6.75 | 6.41 | 5.21 | | | 0.04 |
| *Tricorythodes* | | | 7 | 4 | 8 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Tricorythodes minutus* | 1 | 1 | 7 | 4 | 8 | 4 | Y | Y | | | | | | | | | | | | | 0.56 | 0.12 | | | | 0.08 | | 0.07 | | 0.08 | | | | 0.17 | | 0.93 | 3.55 | 0.89 | 2.23 | 0.53 | 1.58 | 0.18 | | | 0.35 | 1.53 | 0.3 |
| **Plecoptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capniidae | | | | 1 | | | | | | | | | | Y | | | | | 0.23 | 0.26 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroperlidae | | | | 1 | | | | | | | | | | Y | | 0.23 | | | | 0.08 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sweltsa* | | | | 1 | | | | | | | | | | Y | | 0.63 | 0.19 | | | 0.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malenka* | | | | 2 | | | | | | | | | | Y | | | | | | | | 0.24 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Zapada* | | | | 2 | | | | | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Zapada cinctipes* | | | | 2 | | | | | | | | | | Y | 1.81 | 5.31 | 3.17 | 1.15 | 6.42 | 3.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Zapada Oregonensis Group* | | | | 2 | | | | | | | | | | Y | | | 0.22 | 0.1 | 0.53 | 0.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Calineuria californica* | 1 | 1 | 4 | 2 | 5 | 9 | | | | | | Y | Y | Y | 0.45 | 0.97 | | 0.29 | 0.98 | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hesperoperla* | 1 | | 4 | 2 | 5 | 9 | | | | | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hesperoperla pacifica* | | 1 | 4 | 2 | 5 | 9 | | | | | | Y | | Y | 0.24 | | | 0.1 | 0.2 | 0.17 | | 0.29 | 0.95 | 0.52 | | 0.29 | | 0.61 | | 1.17 | | 0.46 | | 1.3 | | 0.58 | 0.45 | | 0.39 | 0.27 | 0.62 | 0.17 | 0.77 | 1.61 | | | |
| Perlodidae | | | | 2 | | | | | | | | | | Y | | | | | 0.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Frisonia picticeps* | 1 | 1 | 2 | 2 | 3 | 5 | | | | Y | Y | | | Y | | | | | 0.65 | 0.08 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Isoperla* | | | | 2 | | | | | | | | | | Y | | | | | 0.5 | 0.23 | | | | | | | | | | | | | 6.67 | 0.09 | | | | | | | | | | | | | |
| *Yoraperla* | 1 | | 2 | 1 | 3 | 9 | | | | Y | Y | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Yoraperla brevis* | | 1 | 2 | 1 | 3 | 9 | | | | Y | Y | Y | Y | Y | 2.03 | 1.77 | | | 0.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pteronarcys* | 1 | | 3 | 0 | 4 | 9 | | | | | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pteronarcys californica* | | 1 | 3 | 1 | 6 | 9 | | | | | | Y | Y | Y | | | | | | | | 0.1 | 0.42 | 1.01 | | 0.3 | | | | 0.2 | | | | | | 0.32 | 0.21 | | 1.05 | 1.4 | 0.28 | 0.31 | 0.51 | 0.26 | | | |
| *Pteronarcys princeps* | | 1 | 2 | 0 | 3 | 9 | | | | Y | Y | Y | Y | Y | | | | 0.3 | 0.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Hemiptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ambrysus* | 1 | 1 | 7 | 5 | 8 | ?4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.02 | 0.04 | 0.42 | 0.17 | 0.08 | 0.17 | | | |
| *Ranatra* | 1 | 1 | 11 | none | 8 | ?4 | Y | Y | | | | | | | | | | | | | | | | | | | | 0.14 | | | | | | | | | | | | | | | | | | | |
| **Megaloptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Orohermes crepusculus* | 1 | 1 | 4 | 0 | 4 | 9 | | | | | | Y | Y | Y | | | | 0.2 | 0.3 | 0.32 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sialis* | 1 | 1 | 7 | 4 | 8 | 7 | Y | Y | | | | Y | Y | | 0.2 | 1.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Trichoptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Amiocentrus aspilus* | 1 | 1 | 5 | 3 | 7 | 4 | | Y | | | | | | | | | | | | | 0.79 | 5.91 | 15 | 4.5 | | 2.5 | | 0.79 | | 0.16 | | 0.45 | | 1.6 | | 1.27 | 0.16 | 2.12 | 0.42 | 0.71 | 2.73 | 0.79 | 2.23 | 1.72 | 0.4 | | |
| *Brachycentrus americanus* | | | | 1 | | | | | | | | | | Y | | | | | 0.24 | 0.24 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Micrasema* | | | | 1 | | | | | | | | | | Y | 4.39 | 0.16 | 2.52 | 1.45 | 0.63 | 2.56 | | 0.24 | 0.11 | | | | | | | | | | | | | | | | 0.05 | | | | | | | | |
| *Heteroplectron californicum* | 1 | 1 | 3 | 1 | 5 | 9 | | | | | | Y | Y | Y | 0.05 | 0.05 | 0.17 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagapetus* | 1 | 1 | 1 | 0 | 2 | 5 | | | | Y | Y | | | Y | | 0.29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Glossosoma* | | | | 1 | | | | | | | | | | Y | | | | 0.39 | | 0.17 | | | 2.74 | | | 0.08 | | 0.07 | | | | | | 0.09 | | | | | | | | 0.08 | 0.26 | 0.17 | | | |
| *Protoptila* | 1 | 1 | 6 | 1 | 7 | 4 | | Y | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.47 | 0.43 | | | | |
| *Arctopsyche* | 1 | | 3 | 1 | 4 | 7 | | | | | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arctopsyche grandis* | | 1 | 3 | 1 | 4 | 7 | | | | | | Y | Y | Y | | | | 0.19 | 0.44 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cheumatopsyche* | 1 | 1 | 8 | 5 | 8 | 4 | Y | Y | | | | | | | | | | | | | | | | 0.35 | | 1.84 | | 0.27 | | 2.82 | | 2.77 | | 2.12 | | | | 0.25 | 0.15 | 0.04 | | | | | 0.05 | | |
| Hydroptilidae-unknown | 1 | 1 | 6 | none | 7 | 4 | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.05 | 0.39 | | | | | 0.12 | | | | | |
| *Agraylea* | 1 | 1 | 3 | 8 | 7* | 4 | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hydroptila* | 1 | 1 | 7 | 6 | 8 | 4 | Y | Y | | | | | | | | | | | | | 0.18 | 13.7 | 0.44 | 1.04 | | 0.08 | | 0.14 | | | | | | 0.56 | | | 0.18 | | 0.13 | 0.35 | 0.26 | 0.77 | 0.16 | 0.05 | | | |
| **Leucotrichia* | | 1 | 7 | 6 | 8 | 4 | Y | Y | | | | | | | | | | | | | 6.67 | 0.07 | | | | 0.47 | | 1.26 | | 0.79 | | 6.64 | 6.67 | 0.09 | | 4.21 | 13.8 | 1.7 | 0.69 | 0.97 | 0.58 | 1.11 | 1.67 | 2.33 | 0.81 | 1.44 | 4.99 |
| *Leucotrichia pictipes* | 1 | | | 6 | 8 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ochrotrichia* | 1 | 1 | 6 | 4 | 7 | 4 | Y | Y | | | | | | | | | | | | | 0.04 | | 0.35 | 0.19 | | 0.22 | | | | | | 0.19 | | 0.28 | | 1.67 | 0.13 | 0.08 | | | | | | | | 0.18 | |
| **Palaeagapetus* | | 1 | 0 | 4 | 2 | 5 | | | | Y | Y | | | | | | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Palaeagapetus nearcticus* | 1 | | 0 | 4 | 2 | 5 | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lepidostoma* | | | | 1 | | | | | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lepidostoma-panel case* | | | | 1 | | | | | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | 0.03 | | | | | | | | | | |
| *Lepidostoma-turret case* | | | | 1 | | | | | | | | | | Y | 0.1 | | | | | | | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ceraclea* | 1 | 1 | 5 | 3 | 6 | 6 | | | | | | | Y | | | | | | | | | | | 0.46 | | 0.08 | | 0.27 | | | | | | 0.11 | | | | 0.31 | | | | | | 0.11 | | 0.1 | | |
| *Mystacides* | 1 | 1 | 5 | 4 | 6 | 4 | Y | | | | | | | | | | | | | | | | 0.11 | | | | | | | | | | | | | | | | | | | | 0.08 | | | | |
| *Nectopsyche* | 1 | 1 | 7 | 3 | 9 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.16 | | 0.5 | 0.08 | 0.1 | | | |



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Table 8A-1 (Sheet 3 of 4). All Fall Creek & Klamath River taxa (2002 Pacificorp sampling) that are designated as tolerant, intolerant or long-lived by ABA, Inc. Versions 1.0 & 2.0 coding, or tolerant by CAMLnet (CA F&G). This list does not include taxa designated as intolerant by CAMLnet (would roughly double the number of taxa involved).

| Benthic invertebrate taxa | CAMLnet distinct taxa | ABA distinct taxa | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2 ABA tolerance value | Life Cycle Duration Category | Version 1 tolerant taxa-ABA | Version 2 tolerant taxa-ABA | CAMLnet tolerant taxa (8-10) | Version 1 intolerant taxa-ABA | Version 2 intolerant taxa-ABA | Version 1 long-lived taxa-ABA | Version 2 long-lived taxa-ABA | CAMLnet intolernt taxa (0-2) | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Oecetis* | 1 | 1 | 8 | 8 | 8 | 4 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dicosmoecus* | 1 | | | 1 | 5 | 7 | | | | | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dicosmoecus gilvipes* | | 1 | 4 | 2 | 5 | 7 | | | | | | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.18 | | | | | | 0.04 |
| *Psychomyia* | | | | 2 | | | | | | | | | | Y | | | | | | | | | | | | | | | | 0.08 | | 0.26 | | | | | | | | | | | | | | | | |
| *Himalopsyche phryganea* | 1 | 1 | 0 | 0 | 2 | 9 | | | | Y | Y | Y | Y | Y | | | | | 0.13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila* | | | | 0 | | | | | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila Betteni Group* | | | | 1 | | | | | | | | | | Y | 0.05 | 0.56 | 0.22 | 0.52 | 0.56 | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila Brunnea Group* | | | | 1 | | | | | | | | | | Y | 0.39 | 0.5 | 0.78 | 0.19 | 1.57 | 0.65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila grandis* | | 1 | 1 | none | 3 | 7 | | | | | Y | Y | Y | Y | | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila narvae* | | | | 1 | | | | | | | | | | Y | | 0.23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila vagrita* | | 1 | 0 | 0 | 3 | 5 | | | | Y | Y | | | Y | | 0.21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila valuma* | | 1 | 3 | 0 | 3 | 5 | | | | | Y | | | Y | 0.05 | | | | 0.13 | 1.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Gumaga* | 1 | 1 | 6 | 3 | 7 | 7 | | Y | | | | Y | Y | | 1.46 | 0.76 | 0.39 | 0.09 | 0.22 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Neophylax* | 1 | | 3 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Neophylax splendens* | | 1 | 4 | none | 3 | 5 | | | | | Y | | | | | | | | 0.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Lepidoptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Petrophila* | 1 | 1 | 6 | 5 | 7 | 6 | Y | Y | | | | | Y | | | | | | | | 2.54 | 0.12 | | 0.55 | | 4.94 | | 11.79 | | 6.48 | | 3.8 | | 0.26 | | 0.21 | 1.47 | 4.41 | 1.42 | 2 | 1.26 | 3.48 | 4.32 | 4.46 | 0.45 | 1.83 | 4.08 |
| **Coleoptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dytiscidae | 1 | 1 | 7 | 5 | 8 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ampumixis dispar* | 1 | 1 | 4 | 4 | 4 | 7 | | | | | | | Y | | 10.1 | 0.16 | 3.56 | 0.41 | 3.66 | 7.51 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cleptelmis addenda* | 1 | 1 | 6 | 4 | 6 | 7 | Y | | | | | | Y | | | 0.16 | 1.22 | 0.1 | | 0.08 | | 4.49 | 0.25 | 0.95 | 3.23 | | | | | | | | | | | | | | | | | 0.06 | | | | | |
| *Heterlimnius* | 1 | 1 | 3 | 4 | 3 | 7 | | | | | Y | | Y | | 10.5 | 7.11 | 0.51 | 2.12 | 3.44 | 3.32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lara* | 1 | | 3 | 4 | 5 | 9 | | | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lara avara* | | 1 | 3 | 4 | 5 | 9 | | | | | | Y | Y | | | | | | 0.24 | 0.16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Microcylloepus* | 1 | 1 | | 4 | 8 | 7 | Y | Y | | | | | Y | | | | | | | | | | | 0.14 | | | | | | | | | | | | | 0.06 | 0.08 | | | | 0.08 | | 0.23 | | | |
| *Optioservus* | 1 | 1 | 5 | 4 | 7 | 7 | Y | Y | | | | | Y | | | 0.05 | | | | | 0.83 | 11.5 | 14.64 | 5.21 | | 4.53 | 8.16 | 2.12 | | 5.22 | 1.24 | 5.41 | | 2.27 | 2.63 | 0.29 | 0.06 | 0.11 | 0.11 | | 0.17 | 0.48 | 0.22 | 0.17 | | | 0.03 |
| *Zaitzevia* | 1 | 1 | 6 | 4 | 7 | 7 | Y | Y | | | | | Y | | | 0.05 | | 0.18 | | | | | 0.03 | | | 0.24 | | 1.84 | | 13.6 | 2.48 | 5.41 | | 6.02 | 7.89 | 0.19 | 4.37 | | 7.73 | 12.7 | 13.9 | 21.92 | 29.55 | 29.2 | | | |
| *Haliplus* | 1 | 1 | | 5 | 9 | 7 | Y | Y | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hydrophilidae | 1 | 1 | 7 | 5 | 7 | 7 | Y | Y | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Eubrianax edwardsi* | 1 | 1 | | 4 | 7 | 7 | Y | Y | | | | Y | Y | | | | | 0.81 | | | | | | | | | | | | | | | | | | | | | 0.05 | | | | | | | | |
| **Psephenus* | | 1 | | 4 | 8 | 7 | Y | Y | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.02 | | | | | | | |
| *Psephenus falli* | 1 | | | 4 | 8 | 7 | Y | Y | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Diptera** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Atherix* | | 1 | 7 | 2 | 7 | 7 | Y | Y | | | | | Y | Y | | | | | | | 0.19 | 0.21 | 0.11 | 0.33 | | 0.45 | | | | | | 0.04 | | | | | | 0.08 | | | | | | | | | |
| *Atherix pachypus* | 1 | | | 2 | 7 | 7 | Y | | | | | | Y | Y | | | | | | | 0.19 | 0.21 | 0.11 | 0.33 | | 0.45 | | | | | | 0.04 | | | | | | 0.08 | | | | | | | | | |
| *Blephariceridae | 1 | 1 | 1 | 0 | 3 | 5 | | | | Y | Y | | | Y | | | | | | | | 1.25 | 0.16 | | | | | | | | | | | | | | | | 0.41 | 1.47 | 1.64 | 0.08 | 2.19 | 2.88 | | | |
| *Deuterophlebia* | 1 | 1 | 0 | 0 | 2 | 5 | | | | Y | Y | | | Y | | | | | | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dixa* | | | | 2 | | | | | | | | | | Y | | 0.29 | 0.17 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hemerodromia* | 1 | 1 | 6 | 6 | 8 | 5 | Y | Y | | | | | | | | | | | | | 0.76 | 0.1 | | | | | | | | | | | | | | | 0.06 | 0.84 | | 0.07 | | 0.22 | | | 0.05 | | |
| *Ephydridae | 1 | 1 | 9 | 6 | 9 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Muscidae | 1 | | 8 | 6 | 8 | 4 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Limnophora* | | 1 | 8 | 6 | 8 | 4 | Y | Y | | | | | | | | | | | | | | 0.07 | | | | | | | | | | | | | | | | | | | | | | | | 0.12 | |
| *Glutops* | 1 | 1 | 2 | 3 | 3 | 5 | | | | Y | Y | | | | | 0.23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Simulium* | 1 | 1 | 6 | 6 | 7 | 4 | | Y | | | | | | | 0.59 | 0.11 | 0.46 | 1.85 | 2.63 | 0.41 | 49.4 | 12.3 | 0.9 | 1.28 | | | | 0.36 | | | | | | 0.74 | | 1.22 | 4.01 | 24.4 | 1.85 | 7.55 | 33.52 | 4.9 | 2.1 | 1.87 | 12.08 | 7.4 | 7.14 |
| *Caloparyphus* | 1 | 1 | 8 | 7 | 8 | 5 | Y | Y | Y | | | | | | | | | | | | 0.04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Antocha* | 1 | 1 | 6 | 3 | 7 | 4 | | Y | | | | | | | 0.19 | 0.28 | 0.26 | | 0.27 | | 1.07 | 4.23 | 7.64 | 4.47 | | 5.83 | | 2.9 | | 5.3 | | 2.18 | | 1.39 | | 0.53 | 0.06 | 0.34 | 0.41 | | | 0.33 | 0.21 | 0.05 | | | |
| *Hexatoma* | | | | 2 | | | | | | | | | | Y | 0.2 | | | | 0.2 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Tipula* | 1 | 1 | 6 | 4 | 7 | 7 | | Y | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Chironomidae** | | | 6 | 6 | 6 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ablabesmyia* | 1 | 1 | 8 | 8 | 8 | 2 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.06 | | | | | | |
| *Brillia* | 1 | 1 | 5 | 5 | 7 | 2 | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Chironomus* | 1 | 1 | 10 | 10 | 10 | 2 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.04 | | | | | | | | |
| *Cladopelma* | 1 | 1 | | none | 9 | 2 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cladotanytarsus* | 1 | 1 | 7 | 7 | 7 | 2 | | Y | Y | | | | | | 1.55 | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Corynoneura* | 1 | 1 | 7 | 7 | 6 | 2 | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cricotopus* | 1 | 1 | 7 | 7 | 6 | 2 | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cricotopus Bicinctus Group* | 1 | 1 | 7 | 7 | 7 | 2 | Y | Y | Y | | | | | | | | | | | | 0.19 | | 1.16 | | | | | | | | | | | | | 0.56 | | | | 0.28 | 0.02 | | | 0.17 | | | |
| *Cricotopus (Nostococladius)* | | 1 | 3 | none | 3 | 5 | | | | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 8A-1 (Sheet 4 of 4). All Fall Creek & Klamath River taxa (2002 Pacificorp sampling) that are designated as tolerant, intolerant or long-lived by ABA, Inc. Versions 1.0 & 2.0 coding, or tolerant by CAMLnet (CA F&G). This list does not include taxa designated as intolerant by CAMLnet (would roughly double the number of taxa involved).

| Benthic invertebrate taxa | CAMLnet distinct taxa | ABA distinct taxa | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2 ABA tolerance value | Life Cycle Duration Category | Version 1 tolerant taxa-ABA | Version 2 tolerant taxa-ABA | CAMLnet tolerant taxa (8-10) | Version 1 intolerant taxa-ABA | Version 2 intolerant taxa-ABA | Version 1 long-lived taxa-ABA | Version 2 long-lived taxa-ABA | CAMLnet intolernt taxa (0-2) | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Cricotopus Trifascia Group* | 1 | 1 | 6 | 7 | 6 | 2 | Y | | Y | | | | | | | | | | | | 0.23 | 0.34 | 0.21 | 0.55 | | | | 0.07 | | | | | | 4.09 | | 1.4 | 0.06 | 0.22 | | 0.53 | 0.15 | 1.09 | 0.1 | 0.48 | | | |
| *Diamesa* | 1 | 1 | 5 | 0 | 3 | 4 | | | | | Y | | | Y | | | | | | | | | | | | | | | | | | | | | | | | 0.08 | | | | | | | | | |
| *Dicrotendipes* | 1 | 1 | 8 | 8 | 8 | 2 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1.66 | | |
| *Endochironomus* | 1 | 1 | 10 | 10 | 9 | 2 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Eukiefferiella* | 1 | 1 | 8 | 8 | 6 | 2 | | | Y | | | | | | 0.29 | | 2.37 | 1.77 | 0.92 | 0.67 | 2.45 | 8.52 | 1.65 | 8.24 | | 1.21 | | 0.63 | | 0.46 | 0.62 | 2.21 | | 3.03 | | 2.86 | 1.81 | 3.02 | 0.27 | 0.36 | 0.02 | 0.42 | 0.27 | 0.21 | 2.77 | | 0.03 |
| *Glyptotendipes* | 1 | 1 | 10 | none | 10 | 2 | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Heterotrissocladius* | 1 | 1 | 0 | 0 | 3 | 2 | | | | Y | Y | | | Y | | | 0.13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Limnophyes* | 1 | 1 | 8 | 8 | 7 | 2 | Y | Y | Y | | | | | | | | | | | | | | | | | | 1.02 | 0.07 | | | | | 6.67 | | | | | | | | | | | | | | |
| *Micropsectra* | 1 | 1 | 7 | 7 | 6 | 2 | | | Y | | | | | | | 0.29 | 0.13 | | | | | | | | | | | | | | | | | | | | | | | | | 0.08 | | | | | |
| *Microtendipes* | 1 | 1 | 6 | none | 7 | 2 | | Y | | | | | | | | | | | | | | | 0.11 | 0.05 | | | | | | 0.3 | | 0.04 | | 0.11 | | | | 0.67 | | | | | | | | | |
| *Monodiamesa* | 1 | 1 | 7 | 7 | 7 | 2 | | Y | Y | | | | | | | 0.23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Parachironomus* | 1 | 1 | | 10 | ?? | 2 | Y | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Paraphaenocladius* | 1 | 1 | 4 | 4 | 3 | 2 | | | | | Y | | | | | | | | | | | | | | | | | | | | 0.62 | | | | | | | | | | | | | | | | | |
| *Phaenopsectra* | 1 | 1 | 7 | 7 | 7 | 2 | | Y | Y | | | | | | | | | | 0.06 | | 0.06 | | 0.11 | | | | | | | | | | | | | | | 0.22 | | 0.32 | 0.37 | 0.12 | 0.08 | | 0.2 | | |
| *Potthastia* | | | | 2 | | | | | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Potthastia Gaeidii Group* | | | | 2 | | | | | | | | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Potthastia Longimana Group* | | 1 | 2 | 2 | 4 | 2 | | | | Y | | | | Y | | | | | | | | 0.07 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Procladius* | 1 | 1 | | 9 | 9 | 2 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Psectrocladius* | 1 | 1 | 8 | 8 | 8 | 2 | Y | Y | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pseudochironomus* | 1 | 1 | 5 | 5 | 7 | 2 | | Y | | | | | | | | | | | | | 0.04 | | | | | | | | | | 1.24 | | | | | 1.06 | 0.03 | | 0.02 | | 0.07 | | | | 0.15 | | |
| *Pseudorthocladius* | 1 | 1 | 0 | none | 2 | 2 | | | | Y | Y | | | | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Stilocladius* | 1 | 1 | 6 | none | 3 | 2 | | | | | Y | | | | | | 0.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Synorthocladius* | | | | 2 | | | | | | | | | | Y | | | | | | | | | | | | | | | | | | | | 0.11 | | 0.03 | | | | 0.11 | | 0.17 | 0.59 | 0.34 | | | |
| *Tanytarsus* | 1 | 1 | 6 | 6 | 7 | 2 | Y | Y | | | | | | | | | | | | | | 0.12 | | | | | | | | | | | | | | | | | | | | | | | | | 0.09 | |
| **Xenochironomus* | | 1 | 0 | 0 | 2 | 2 | | | | | Y | | | Y | | | | | | | | | | | | | | | | | | | | | | | | 0.08 | | | | | | | | | | |
| *Xenochironomus xenolabis* | 1 | | 0 | 0 | 2 | 2 | | | | | Y | | | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **ABA taxa richness** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-insects | | | | | | | | | | | | | | | 6 | 8 | 7 | 7 | 8 | 6 | 10 | 13 | 10 | 10 | 3 | 6 | 2 | 8 | 2 | 6 | 5 | 4 | 1 | 9 | 2 | 9 | 13 | 6 | 12 | 12 | 8 | 11 | 9 | 7 | 7 | 9 | 7 |
| Odonata | | | | | | | | | | | | | | | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 0 | 0 |
| Ephemeroptera | | | | | | | | | | | | | | | 9 | 7 | 8 | 9 | 12 | 7 | 3 | 7 | 8 | 7 | 0 | 7 | 0 | 10 | 1 | 10 | 0 | 9 | 0 | 10 | 0 | 5 | 7 | 6 | 8 | 6 | 7 | 9 | 8 | 7 | 4 | 3 | 3 |
| Plecoptera | | | | | | | | | | | | | | | 4 | 6 | 4 | 5 | 11 | 9 | 0 | 3 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 |
| Hemiptera | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Megaloptera | | | | | | | | | | | | | | | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trichoptera | | | | | | | | | | | | | | | 8 | 12 | 7 | 8 | 10 | 9 | 5 | 6 | 7 | 6 | 0 | 8 | 0 | 7 | 0 | 5 | 0 | 6 | 1 | 8 | 0 | 6 | 7 | 6 | 6 | 6 | 5 | 9 | 8 | 6 | 5 | 3 | 3 |
| Lepidoptera/Hymenoptera | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Coleoptera | | | | | | | | | | | | | | | 2 | 5 | 3 | 5 | 3 | 4 | 1 | 2 | 3 | 3 | 1 | 2 | 1 | 2 | 0 | 2 | 2 | 2 | 0 | 2 | 2 | 2 | 3 | 2 | 3 | 1 | 3 | 4 | 2 | 3 | 0 | 0 | 1 |
| Diptera-misc. | | | | | | | | | | | | | | | 3 | 4 | 4 | 2 | 7 | 4 | 5 | 6 | 5 | 4 | 1 | 2 | 3 | 2 | 1 | 1 | 2 | 3 | 2 | 2 | 0 | 2 | 3 | 5 | 5 | 3 | 3 | 4 | 4 | 3 | 2 | 2 | 1 |
| Diptera-chironomid midge | | | | | | | | | | | | | | | 5 | 10 | 13 | 5 | 11 | 4 | 19 | 16 | 15 | 18 | 1 | 11 | 4 | 14 | 1 | 10 | 4 | 12 | 5 | 14 | 1 | 18 | 15 | 17 | 11 | 16 | 16 | 18 | 14 | 17 | 18 | 6 | 5 |
| **Total taxa richness** | | | | | | | | | | | | | | | 39 | 54 | 48 | 43 | 64 | 44 | 46 | 55 | 51 | 51 | 6 | 39 | 10 | 46 | 5 | 38 | 13 | 39 | 10 | 48 | 5 | 46 | 53 | 44 | 51 | 51 | 49 | 61 | 51 | 49 | 39 | 24 | 21 |
| **EPT taxa richness** | | | | | | | | | | | | | | | 21 | 25 | 19 | 22 | 33 | 25 | 8 | 16 | 17 | 15 | 0 | 17 | 0 | 18 | 1 | 17 | 0 | 16 | 2 | 20 | 0 | 13 | 16 | 12 | 16 | 14 | 14 | 20 | 18 | 15 | 9 | 6 | 6 |
| **CA taxa richness** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Non-insects | | | | | | | | | | | | | | | 6 | 8 | 7 | 7 | 8 | 6 | 10 | 12 | 10 | 10 | 3 | 6 | 2 | 8 | 2 | 6 | 4 | 4 | 1 | 9 | 2 | 9 | 13 | 6 | 12 | 12 | 8 | 11 | 9 | 7 | 7 | 9 | 7 |
| Odonata | | | | | | | | | | | | | | | 1 | 1 | 2 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 0 | 0 |
| Ephemeroptera | | | | | | | | | | | | | | | 9 | 7 | 8 | 9 | 11 | 7 | 3 | 7 | 7 | 6 | 0 | 6 | 0 | 9 | 1 | 9 | 0 | 8 | 0 | 9 | 0 | 4 | 6 | 6 | 8 | 6 | 7 | 9 | 8 | 7 | 4 | 3 | 3 |
| Plecoptera | | | | | | | | | | | | | | | 4 | 6 | 3 | 5 | 10 | 8 | 0 | 3 | 2 | 2 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 |
| Hemiptera | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| Megaloptera | | | | | | | | | | | | | | | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trichoptera | | | | | | | | | | | | | | | 6 | 8 | 6 | 7 | 8 | 7 | 5 | 6 | 7 | 6 | 0 | 8 | 0 | 7 | 0 | 5 | 0 | 6 | 1 | 8 | 0 | 6 | 7 | 6 | 6 | 6 | 5 | 9 | 8 | 6 | 5 | 3 | 3 |
| Lepidoptera/Hymenoptera | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Coleoptera | | | | | | | | | | | | | | | 2 | 5 | 3 | 5 | 3 | 4 | 1 | 2 | 3 | 3 | 1 | 2 | 1 | 2 | 0 | 2 | 2 | 2 | 0 | 2 | 2 | 2 | 3 | 2 | 3 | 1 | 3 | 4 | 2 | 3 | 0 | 0 | 1 |
| Diptera-misc. | | | | | | | | | | | | | | | 3 | 4 | 4 | 2 | 7 | 4 | 5 | 6 | 5 | 4 | 1 | 2 | 3 | 2 | 1 | 1 | 2 | 3 | 2 | 2 | 0 | 2 | 3 | 5 | 5 | 3 | 3 | 4 | 4 | 3 | 2 | 2 | 1 |
| Diptera-chironomid midge | | | | | | | | | | | | | | | 5 | 10 | 13 | 5 | 10 | 3 | 16 | 14 | 12 | 16 | 1 | 10 | 4 | 12 | 1 | 9 | 4 | 11 | 5 | 12 | 1 | 15 | 13 | 15 | 11 | 13 | 14 | 16 | 13 | 14 | 17 | 6 | 5 |
| **Total taxa richness** | | | | | | | | | | | | | | | 38 | 50 | 46 | 42 | 59 | 40 | 43 | 52 | 47 | 48 | 6 | 37 | 10 | 43 | 5 | 36 | 12 | 37 | 10 | 45 | 5 | 42 | 50 | 42 | 51 | 47 | 47 | 59 | 50 | 46 | 38 | 24 | 21 |
| **EPT taxa richness** | | | | | | | | | | | | | | | 19 | 21 | 17 | 21 | 29 | 22 | 8 | 16 | 16 | 14 | 0 | 16 | 0 | 17 | 1 | 16 | 0 | 15 | 2 | 19 | 0 | 12 | 15 | 12 | 16 | 14 | 14 | 20 | 18 | 15 | 9 | 6 | 6 |



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Table 8A-2 (Sheet 1 of 6). Benthic freshwater invertebrate taxa encountered during fall 2002 in the Klamath River, California, PacifiCorp Hydroelectric Project. Table provides information on distinct taxa and their associated tolerance values, functional feeding groups, habit, geographic range category, and life cycle duration category.

| | | | | | | | | | | | | | | Functional feeding group | | | | | | | | | | | Habit | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Commom name of group | Common name of subgroup | Family | CAMLnet standard taxonomic effort | CAMLnet distinct taxa | ABA standard taxonomic effort-Level 3 | ABA distinct taxa | | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2.0 ABA tolerance value | CAMLnet 1 FFG | CAMLnet 2 FFG | Detritus shredder | Wood shredder | Macrophyte, moss, and macroalgae shredder | Piercer-herbivore | Scraper | Predator | Parasite | Collector-filterer | Collector-gatherer | Omnivore-Scavenger | Unknown | Skater | Floater | Planktonic | Diver | Swimmer | Clinger | Sprawler | Climber | Burrower | Attacher | Miner | Hypotheic | | Geographic Range Category | Life Cycle Duration Category |
| | | | | | | | | | | | | | | DSH | WSH | MSH | PH | SC | PR | PA | CF | CG | OM | UN | SK | FL | PL | DI | SW | CL | SP | CM | BU | AT | MI | HY | | | |
| **Total number of distinct taxa (all samples combined): CAMLnet versus ABA standard taxonomic effort:** | | | | | 188 | | 211 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Non insects | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Porifera | sponges | | | ?none | 1 | 3 | 1 | | 8 | none | 8 | none | | | | | | | | | 100 | | | | | | | | | | | | | 100 | | | | 9 | 9 |
| Hydra | hydroids | | Hydridae | genus | 1 | 3 | 1 | | 7 | 5 | 9 | PR | | | | | | | 100 | | | | | | | 25 | | | | 25 | | | | 50 | | | ?? | 2 |
| *Turbellaria | flatworms | | | family | | 3 | 1 | | 4 | none | 5 | none | | | | | | | 75 | | | 25 | | | | | | | | 100 | | | | | | | | 5 | 2 |
| Planaridae | flatworms | | Planaridae | family | 1 | none | | | 4 | 4 | 5 | PR | CG | | | | | | 75 | | | 25 | | | | | | | | 100 | | | | | | | | 5 | 2 |
| Nematoda | roundworms | | | phylum | 1 | 3 | 1 | | 5 | reject | 6 | reject | | | | | | | | 100 | | | | | | | | | | | 50 | | 50 | | | | | 9 | 2 |
| Oligochaeta | aquatic earthworms | | | class | 1 | 3 | 1 | | 5 | none | 7 | none | ` | | | | | | | | | 100 | | | | | | | | | | | 100 | | | | | 9 | 4 |
| *Hirudinea | leeches | | | genus | 1 | 3 | 1 | | 10 | 10 | 8 | PA | PR | | | | | | 100 | | | | | | | | | | | 50 | 50 | | | | | | | 8 | 9 |
| Helobdella stagnalis | leeches | | Glossiphonidae | genus | 1 | 3 | 1 | | 9 | 6 | 9 | PA | PR | | | | | | 100 | | | | | | | | | | | 75 | 25 | | | | | | | 9 | ?? |
| *Branchiodellida | crayfish commensal | | | reject | | 3 | 1 | | 7 | reject | 7 | reject | | | | | | | | 50 | | 50 | | | | | | | | | | | | 100 | | | | 6 | 4 |
| Manayunkia speciosa | polychaet worm | | Sabellidae | genus | 1 | 3 | 1 | | 6 | none | 8 | CF | | | | | | | | | | ?100 | | | | | | | | | | | 100 | | | | | 7 | ?4 |
| Ferrissia | snail | freshwater limpets | Ancylidae | genus | 1 | 3 | 1 | | 6 | 6 | 7 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 8 | 4 |
| Hydrobiidae | snail | | Hydrobiidae | family | 1 | 3 | | | 8 | 8 | 5 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 4 | 9 |
| Colligyrus | snail | | Hydrobiidae | family | | 3 | 1 | | 3 | none | 3 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 4 | 9 |
| Colligyrus new species 3 | snail | | Hydrobiidae | family | | 4 | 1 | | 3 | none | 3 | SC | | | | | | 50 | | | | 50 | | | | | | | | 100 | | | | | | | | 2 | 5 |
| Fluminicola | snail | | Hydrobiidae | family | | 3 | 1 | | 8 | 5 | 7 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 4 | 5 |
| Fluminicola new species | snail | unnamed-Klamath, Fall Creek | Hydrobiidae | family | | 4 | | | 8 | none | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 3 | 5 |
| Fluminicola new species 1 | snail | Klamath pebblesnail | Hydrobiidae | family | | 4 | | | 8 | none | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 3 | 5 |
| Fluminicola new species 4 | snail | nerite pebblesnail | Hydrobiidae | family | | 4 | | | 8 | none | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 3 | 5 |
| Fluminicola new species 5 | snail | toothed pebblesnail | Hydrobiidae | family | | 4 | | | 8 | none | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 3 | 5 |
| Fluminicola new species 6 | snail | diminutive pebblesnail | Hydrobiidae | family | | 4 | | | 8 | none | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 3 | 5 |
| Fluminicola new species 8 | snail | Fall Creek pebblesnail | Hydrobiidae | family | | 4 | | | 8 | none | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 3 | 5 |
| Pyrgulopsis | snail | | Hydrobiidae | family | | 3 | 1 | | 3 | none | 3 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 3 | 5 |
| Pyrgulopsis archimedes | snail | | Hydrobiidae | family | | 4 | | | 3 | none | 3 | SC | | | | | | 75 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 3 | 5 |
| Lymnaeidae | snail | | Lymnaeidae | genus | | 3 | | | 8 | 6 | 8 | SC | | | | | | 50 | | | | 50 | | | | | | | | 50 | 50 | | | | | | | 7 | 7 |
| Fossaria | snail | | Lymnaeidae | genus | 1 | 3 | 1 | | 8 | 8 | 7 | SC | | | | | | 75 | | | | 25 | | | | | | | | 50 | 50 | | | | | | | 6 | 7 |
| Fossaria modicella | snail | | Lymnaeidae | genus | | 4 | | | 8 | none | 7 | SC | | | | | | 75 | | | | 25 | | | | | | | | 50 | 50 | | | | | | | 8 | 7 |
| Lanx | snail | | Lymnaeidae | genus | 1 | 3 | 1 | | 6 | 6 | 3 | ?GC | | | | | | 100 | | | | | | | | | | | | 100 | | | | | | | | 1 | 7 |
| Lanx alta | snail | | Lymnaeidae | genus | | 4 | | | 6 | none | 3 | SC | | | | | | 100 | | | | | | | | | | | | 100 | | | | | | | | 1 | 7 |
| Radix auricularia | snail | | Lymnaeidae | monotypic | 1 | 3 | 1 | | 8 | 6 | 8 | SC | | | | 25 | | 50 | | | | 25 | | | | | | | | 50 | 50 | | | | | | | 10 | 7 |
| Physella/Physa | snail | | Physidae | genus | 1 | 3 | 1 | | 8 | 8 | 9 | SC | | | | 25 | | 50 | | | | 25 | | | | | | | | 50 | 25 | 25 | | | | | | 7 | 6 |
| Physella gyrina | snail | | Physidae | genus | | 4 | | | 8 | none | 9 | SC | | | | 25 | | 50 | | | | 25 | | | | | | | | 50 | 25 | 25 | | | | | | 7 | 6 |
| Physella virgata | snail | | Physidae | genus | | 4 | | | 8 | none | 9 | SC | | | | 25 | | 50 | | | | 25 | | | | | | | | 50 | 25 | 25 | | | | | | 7 | 6 |
| Planorbidae | snail | | Planorbidae | genus | | 3 | | | 8 | 6 | 9 | SC | | | | | | 50 | | | | 50 | | | | | | | | 25 | 25 | 50 | | | | | | 7 | 5 |
| Gyraulus | snail | | Planorbidae | genus | 1 | 3 | 1 | | 8 | 8 | 9 | SC | | | | | | 75 | | | | 25 | | | | | | | | 25 | 25 | 50 | | | | | | 7 | 5 |
| Gyraulus parvus | snail | | Planorbidae | genus | | 4 | | | 8 | none | 9 | SC | | | | | | 75 | | | | 25 | | | | | | | | 25 | 25 | 50 | | | | | | 7 | 5 |
| Menetus | snail | | Planorbidae | genus | 1 | 3 | 1 | | 6 | none | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 25 | 25 | 50 | | | | | | 7 | 5 |
| Menetus dilatatus | snail | | Planorbidae | genus | | 4 | | | 6 | none | 6 | SC | | | | | | 25 | | | | 75 | | | | | | | | 25 | 25 | 50 | | | | | | 7 | 5 |
| Planorbella | snail | | Planorbidae | genus | 1 | 3 | 1 | | 7 | none | 7 | SC | | | | 25 | | 50 | | | | 25 | | | | | | | | 50 | 25 | 25 | | | | | | 6 | 5 |
| Planorbella subcrenatum | snail | | Planorbidae | genus | | 4 | | | 7 | none | 7 | SC | | | | 25 | | 50 | | | | 25 | | | | | | | | 50 | 25 | 25 | | | | | | 6 | 5 |
| Vorticifex | snail | | Planorbidae | genus | 1 | 3 | 1 | | 8 | none | 4 | SC | | | | | | 100 | | | | | | | | | | | | 50 | 50 | | | | | | | 4 | 5 |
| Vorticifex effusus effusus | snail | | Planorbidae | genus | | 4 | | | 8 | none | 4 | SC | | | | | | 100 | | | | | | | | | | | | 50 | 50 | | | | | | | 4 | 5 |
| Juga | snail | | Pleuroceridae | genus | 1 | 3 | 1 | | 7 | 7 | 7 | SC | | 25 | | | | 50 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 4 | 9 |
| Juga (C.) acutifilosa | snail | scalloped juga | Pleuroceridae | genus | | 4 | | | 7 | none | 3 | SC | | 25 | | | | 50 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 3 | 9 |
| Juga (J.) silicula shastaensis | snail | | Pleuroceridae | genus | | 4 | | | 7 | none | 3 | SC | | 25 | | | | 50 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 3 | 9 |
| Juga (Oreobasis) new species | snail | | Pleuroceridae | genus | | 4 | | | 7 | none | 3 | SC | | 25 | | | | 50 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 3 | 9 |
| Juga (Oreobasis) new species aff. Nigrina | snail | | Pleuroceridae | genus | | 4 | | | 7 | none | 3 | SC | | 25 | | | | 50 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 3 | 9 |
| Valvata | snail | | Valvatidae | genus | 1 | 3 | 1 | | 8 | 8 | 5 | SC | | | | | | 25 | | | | 75 | | | | | | | | 100 | | | | | | | | 6 | 7 |
| Valvata humeralis | snail | | Valvatidae | genus | | 4 | | | 8 | none | 3 | SC | | | | | | 25 | | | | 75 | | | | | | | | 100 | | | | | | | | 6 | 7 |

Table 8A-2 (Sheet 2 of 6). Benthic freshwater invertebrate taxa encountered during fall 2002 in the Klamath River, California, PacifiCorp Hydroelectric Project. Table provides information on distinct taxa and their associated tolerance values, functional feeding groups, habit, geographic range category, and life cycle duration category.

| | | | | | | | | | | | | | | Functional feeding group | | | | | | | | | | | Habit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Commom name of group | Common name of subgroup | Family | CAMLnet standard taxonomic effort | CAMLnet distinct taxa | ABA standard taxonomic effort-Level 3 | ABA distinct taxa | | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2.0 ABA tolerance value | CAMLnet 1 FFG | CAMLnet 2 FFG | Detritus shredder | Wood shredder | Macrophyte, moss, and macroalgae shredder | Piercer-herbivore | Scraper | Predator | Parasite | Collector-filterer | Collector-gatherer | Omnivore-Scavenger | Unknown | Skater | Floater | Planktonic | Diver | Swimmer | Clinger | Sprawler | Climber | Burrower | Attacher | Miner | Hyporheic | | Geographic Range Category | Life Cycle Duration Category |
| | | | | | | | | | | | | | | DSH | WSH | MSH | PH | SC | PR | PA | CF | CG | OM | UN | SK | FL | PL | DI | SW | CL | SP | CM | BU | AT | MI | HY | | | |
| Sphaeriidae | fingernail clams | | Sphaeriidae | genus | | 3 | | | 8 | 8 | 7 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 7 | 5 |
| Musculium | fingernail clams | | Sphaeriidae | genus | 1 | 3 | 1 | | 8 | 6 | 7 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 7 | 5 |
| Musculium raymondi | fingernail clams | | Sphaeriidae | genus | | 4 | | | 8 | none | 6 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 6 | 5 |
| Pisidium | fingernail clams | | Sphaeriidae | genus | 1 | 4 | 1 | | 8 | 8 | 7 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 7 | 5 |
| Pisidium casertanum | fingernail clams | | Sphaeriidae | genus | | 4 | | | 8 | none | 9 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 10 | 5 |
| Pisidium insigne | fingernail clams | | Sphaeriidae | genus | | 4 | | | 8 | none | 3 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 5 | 5 |
| Pisidium new species aff. ultramontanum | fingernail clams | Modoc peaclam | Sphaeriidae | genus | | 4 | | | 8 | none | 5 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 1 | 5 |
| Pisidium variabile | fingernail clams | | Sphaeriidae | genus | | 4 | | | 8 | none | 5 | CF | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 7 | 5 |
| Sphaerium | fingernail clams | | Sphaeriidae | genus | 1 | 4 | 1 | | 6 | 6 | 7 | ?GC | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 7 | 5 |
| Sphaerium simile | fingernail clams | | Sphaeriidae | genus | | 4 | | | 8 | none | 9 | ?GC | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 7 | 5 |
| Anodonta/Gonidea | mussel | | Unionidae | genus | | 8 | | | 6 | 8 | 5 | ?FC | | | | | | | | | 75 | 25 | | | | | | | | 25 | | 75 | | | | | 6 | 10 |
| Ostracoda | microcrustacean | | | class | 1 | 3 | 1 | | 8 | 8 | 6 | CG | | | | | | | | | 50 | 50 | | | | | | 75 | | 25 | | | | | | | 7 | 2 |
| Crangonyx | scud crustacean | | Crangonyctidae | genus | 1 | 3 | 1 | | 6 | 4 | 8 | CG | | | | | | | | | | 100 | | | | | | 75 | | 25 | | | | | | | 6 | 4 |
| Stygobromus | scud crustacean | | Crangonyctidae | genus | 1 | 3 | 1 | | 4 | 4 | 3 | CG | | | | | | | | | | 100 | | | | | | | | | | | | | 100 | | 4 | 4 |
| Gammarus | scud crustacean | | Gammaridae | genus | 1 | 3 | 1 | | 6 | 6 | 9 | CG | | 25 | | | | | | | | 75 | | | | | | 75 | | 25 | | | | | | | 8 | 4 |
| Hyalella azteca | scud crustacean | | Talitridae | genus | 1 | 3 | 1 | | 8 | 8 | 9 | CG | | | | | | | | | | 100 | | | | | | 75 | | 25 | | | | | | | 9 | |
| Caecidotea | aquatic sow bugs | | Asellidae | genus | 1 | 3 | 1 | | 8 | 8 | 9 | CG | | | | | | | | | | 75 | 25 | | | | | | 25 | 50 | 25 | | | | | | 6 | 4 |
| Pacifasticus | crayfish | | Astacidae | species | 1 | 3 | 1 | | 6 | 6 | 7 | OM | | | | | | | 25 | | | 25 | 50 | | | | | | | 75 | | 25 | | | | | 6 | 7 |
| *Acarina | mites | | | genus | 1 | 3 | 1 | | 5 | 5 | 6 | PR | | | | | | | 50 | 50 | | | | | | | | | 25 | 50 | | 25 | | | | | 7 | 4 |
| Odonota | dragon- and damselflies | | | variable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aeshnidae | dragonflies | | Aeshnidae | genus | 1 | 3 | 1 | | 5 | none | 9 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 50 | | | | | | 7 | 7 |
| Octogomphus | | | | species | | 3 | | | 4 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 7 |
| Octogomphus specularis | dragonflies | | Gomphidae | species | 1 | 4 | 1 | | 4 | 4 | 5 | PR | | | | | | | 100 | | | | | | | | | | | 50 | | 50 | | | | | 4 | 7 |
| Ophiogomphus | dragonflies | | Gomphidae | genus | 1 | 3 | 1 | | 4 | 4 | 8 | PR | | | | | | | 100 | | | | | | | | | | | 50 | | 50 | | | | | 6 | 7 |
| Libellulidae | dragonflies | | Libellulidae | variable | 1 | 3 | 1 | | 9 | 9 | 9 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 50 | | | | | | 6 | 7 |
| Hetaerina | damselflies | | Calopterygidae | species | | 3 | 1 | | 6 | 6 | 7 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 50 | | | | | | 7 | ?5 |
| *Hetaerina americana | damselflies | | Calopterygidae | species | 1 | 4 | | | 6 | 6 | 7 | PR | | | | | | | | | | | | | | | | | | | | | | | | | 7 | ?5 |
| Coenagrionidae | damselflies | | Coenagrionidae | genus | 1 | 3 | 1 | | 9 | none | 9 | PR | | | | | | | 100 | | | | | | | | | | | 25 | 75 | | | | | | 6 | 6 |
| Argia | damselflies | | Coenagrionidae | genus | 1 | 3 | 1 | | 7 | 7 | 9 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 50 | | | | | | 6 | 6 |
| Ephemeroptera | mayflies | | | genus | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ameletus | mayflies | | Ameletidae | genus | 1 | 3 | 1 | | 3 | 0 | 5 | CG | | | | | | 50 | | | | 50 | | | | | | 25 | 50 | 25 | | | | | | | 5 | 5 |
| Baetidae | mayflies | | Baetidae | genus | 1 | 3 | 1 | | 4 | 4 | 7 | CG | | | | | | 50 | | | | 50 | | | | | | 25 | 50 | 25 | | | | | | | 6 | 4 |
| Acentrella | mayflies | | Baetidae | genus | 1 | 3 | 1 | | 6 | 4 | 7 | CG | SC | | | | | 25 | | | | 75 | | | | | | 25 | 50 | 25 | | | | | | | 7 | 4 |
| Baetis tricaudatus | mayflies | | Baetidae | genus | 1 | 3 | 1 | | 6 | 6 | 7 | CG | SC | | | | | 50 | | | | 50 | | | | | | 25 | 75 | | | | | | | | 7 | 2 |
| Callibaetis | mayflies | | Baetidae | genus | 1 | 3 | 1 | | 9 | 9 | 9 | CG | | | | | | | | | | 100 | | | | | | 25 | 25 | 50 | | | | | | | 7 | 4 |
| Diphetor hageni | mayflies | | Baetidae | species | 1 | 3 | 1 | | 5 | 5 | 6 | CG | SC | | | | | 25 | | | | 75 | | | | | | 25 | 50 | 25 | | | | | | | 7 | 4 |
| Fallceon quilleri | mayflies | | Baetidae | species | 1 | 3 | 1 | | 4 | 4 | 8 | CG | SC | | | | | 25 | | | | 75 | | | | | | 25 | 50 | 25 | | | | | | | 6 | 2 |
| Caenis | mayflies | | Baetidae | genus | 1 | 3 | 1 | | 7 | 7 | 9 | CG | | | | | | | | | | 100 | | | | | | 25 | 50 | 25 | | | | | | | 7 | 4 |
| Caudatella | mayflies | | Ephemerellidae | genus | 1 | none | | | 1 | 1 | 3 | CG | SC | | | 25 | | 50 | | | | 25 | | | | | | | 100 | | | | | | | | 5 | 5 |
| Caudatella heterocaudata | mayflies | | Ephemerellidae | genus | | 3 | 1 | | 1 | 1 | 4 | CG | SC | | | | | 50 | | | | 25 | 25 | | | | | | 100 | | | | | | | | 4 | 5 |
| Caudatella hystrix | mayflies | | Ephemerellidae | genus | | 3 | 1 | | 2 | 1 | 3 | CG | SC | | | 25 | | 50 | | | | 25 | | | | | | | 100 | | | | | | | | 5 | 5 |
| Drunella | mayflies | | Ephemerellidae | genus | 1 | none | | | 1 | 0 | 4 | CG | SC | | | | | 50 | 25 | | | 25 | | | | | | | 75 | 25 | | | | | | | 5 | 7 |
| Drunella doddsi | mayflies | | Ephemerellidae | genus | | 3 | 1 | | 1 | 0 | 3 | CG | SC | | | | | 50 | 25 | | | 25 | | | | | | | 100 | | | | | | | | 5 | 7 |
| Drunella spinifera | mayflies | | Ephemerellidae | genus | | 3 | 1 | | 0 | 0 | 2 | PR | | | | | | 25 | 25 | | | 50 | | | | | | | 50 | 50 | | | | | | | 5 | 7 |
| Ephemerella | mayflies | | Ephemerellidae | genus | 1 | none | | | 3 | none | 7 | none | none | | | | | 50 | | | | 50 | | | | | | 25 | 50 | 25 | | | | | | | 7 | 5 |
| Ephemerella inermis | mayflies | | Ephemerellidae | genus | | 3 | 1 | | 3 | 1 | 7 | CG | SC | | | | | 50 | | | | 50 | | | | | | 25 | 50 | 25 | | | | | | | 6 | 4 |
| Serratella | mayflies | | Ephemerellidae | genus | 1 | none | | | 2 | 2 | 5 | CG | SC | | | | | | | | | | | | | | | | | | | | | | | | | |
| Serratella micheneri | mayflies | | Ephemerellidae | genus | | 3 | 1 | | 2 | 1 | 7 | CG | SC | | | | | 25 | | | | 75 | | | | | | | 75 | 25 | | | | | | | 6 | ?4 |
| Serratella tibialis | mayflies | | Ephemerellidae | genus | | 3 | 1 | | 2 | 2 | 5 | CG | SC | | | | | 25 | 25 | | | 50 | | | | | | | 75 | 25 | | | | | | | 5 | 5 |
| Cinygma | mayflies | | Heptageniidae | genus | 1 | 3 | 1 | | 2 | 2 | 6 | SC | SH | | 50 | | | 50 | | | | | | | | | | | 100 | | | | | | | | 5 | 5 |
| Cinygmula | mayflies | | Heptageniidae | genus | 1 | 3 | 1 | | 4 | 4 | 5 | SC | | | | | | 75 | | | | 25 | | | | | | | 100 | | | | | | | | 5 | 5 |
| Epeorus | mayflies | | Heptageniidae | genus | 1 | 3 | 1 | | 1 | 0 | 4 | SC | | | | | | 75 | | | | 25 | | | | | | | 100 | | | | | | | | 6 | 5 |
| Epeorus albertae | mayflies | | Heptageniidae | genus | | 3 | 1 | | 3 | 0 | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | 100 | | | | | | | | 6 | 5 |
| Epeorus grandis | mayflies | | Heptageniidae | genus | | 3 | 1 | | 0 | 0 | 3 | SC | | | | | | 75 | | | | 25 | | | | | | | 100 | | | | | | | | 5 | 5 |



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Table 8A-2 (Sheet 3 of 6). Benthic freshwater invertebrate taxa encountered during fall 2002 in the Klamath River, California, PacifiCorp Hydroelectric Project. Table provides information on distinct taxa and their associated tolerance values, functional feeding groups, habit, geographic range category, and life cycle duration category.

| | | | | | | | | | | | | | Functional feeding group | | | | | | | | | | | Habit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Commom name of group | Common name of subgroup | Family | CAMLnet standard taxonomic effort | CAMLnet distinct taxa | ABA standard taxonomic effort-Level 3 | ABA distinct taxa | | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2.0 ABA tolerance value | CAMLnet 1 FFG | CAMLnet 2 FFG | Detritus shredder | Wood shredder | Macrophyte, moss, and macroalgae shredder | Piercer-herbivore | Scraper | Predator | Parasite | Collector-filterer | Collector-gatherer | Omnivore-Scavenger | Unknown | Skater | Floater | Planktonic | Diver | Swimmer | Clinger | Sprawler | Climber | Burrower | Attacher | Miner | Hypotheic | | Geographic Range Category | Life Cycle Duration Category |
| | | | | | | | | | | | | | | DSH | WSH | MSH | PH | SC | PR | PA | CF | CG | OM | UN | SK | FL | PL | DI | SW | CL | SP | CM | BU | AT | MI | HY | | | |
| Heptagenia | mayflies | | Heptageniidae | genus | 1 | 3 | | | 4 | 4 | 6 | 2 | | | | | | 75 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 6 | 4 |
| Heptagenia/Nixe | mayflies | | Heptageniidae | genus | | 3 | 1 | | 4 | none | 6 | none | none | | | | | 75 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 6 | 4 |
| Ironodes | mayflies | | Heptageniidae | genus | 1 | 3 | 1 | | 2 | 3 | 5 | SC | | 25 | | | | 50 | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 5 | 5 |
| Rhithrogena | mayflies | | Heptageniidae | genus | 1 | 3 | 1 | | 2 | 0 | 6 | SC | | | | | | 75 | | | | 25 | | | | | | | | 100 | | | | | | | | 6 | 5 |
| Asioplax | mayflies | | Leptohyphidae | genus | 1 | 3 | 1 | | 7 | 4 | 8 | CG | | | | | | 25 | | | | 75 | | | | | | | | 50 | 50 | | | | | | | 6 | 4 |
| Tricorythodes | mayflies | | Leptohyphidae | genus | | 3 | | | 7 | 4 | 8 | CG | | | | | | 25 | | | | 75 | | | | | | | | 50 | 50 | | | | | | | 7 | 4 |
| Tricorythodes minutus | mayflies | | Leptohyphidae | genus | 1 | 3 | 1 | | 7 | 4 | 8 | CG | | | | | | 25 | | | | 75 | | | | | | | | 50 | 50 | | | | | | | 7 | 4 |
| Paraleptophlebia | mayflies | | Leptophlebiidae | genus | 1 | 3 | 1 | | 4 | 4 | 6 | CG | | 25 | | | | | | | | 75 | | | | | | | 25 | 25 | 50 | | | | | | | 6 | 5 |
| Plecoptera | stoneflies | | | variable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capniidae | stoneflies | | Capniidae | fam/gen | 1 | 3 | 1 | | 3 | 1 | 4 | SH | | 100 | | | | | | | | | | | | | | | | 50 | 50 | | | | | | | 5 | 5 |
| Chloroperlidae | stoneflies | | Chloroperlidae | fam/gen | 1 | 3 | 1 | | 3 | 1 | 5 | PR | | | | | | | 75 | | | | 25 | | | | | | | 50 | 25 | | 25 | | | | | 6 | 5 |
| Sweltsa | stoneflies | | Chloroperlidae | fam/gen | 1 | 3 | 1 | | 3 | 1 | 5 | PR | | | | | | | 75 | | | | 25 | | | | | | | 50 | 25 | | 25 | | | | | 5 | 5 |
| Malenka | stoneflies | | Nemouridae | genus | 1 | 3 | 1 | | 4 | 2 | 6 | SH | | 75 | | | | | | | | 25 | | | | | | | | 50 | 50 | | | | | | | 6 | 5 |
| Zapada | stoneflies | | Nemouridae | genus | 1 | none | | | 4 | 2 | 4 | SH | | 75 | | | | | | | | 25 | | | | | | | | 50 | 50 | | | | | | | 6 | 4 |
| Zapada cinctipes | stoneflies | | Nemouridae | genus | | 3 | 1 | | 4 | 2 | 5 | SH | | 75 | | | | | | | | 25 | | | | | | | | 50 | 50 | | | | | | | 6 | 4 |
| Zapada Oregonensis Group | stoneflies | | Nemouridae | genus | | 3 | 1 | | 2 | 2 | 4 | SH | | 75 | | | | | | | | 25 | | | | | | | | 50 | 50 | | | | | | | 5 | 5 |
| Calineuria californica | stoneflies | | Perlidae | species | 1 | 3 | 1 | | 4 | 2 | 5 | PR | | | | | | | 100 | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 9 |
| Hesperoperla | stoneflies | | Perlidae | genus | 1 | none | | | 4 | 2 | 5 | PR | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hesperoperla pacifica | stoneflies | | Perlidae | genus | | 3 | 1 | | 4 | 2 | 5 | PR | | | | | | | 100 | | | | | | | | | | | 75 | 25 | | | | | | | 6 | 9 |
| Perlodidae | stoneflies | | Perlodidae | variable | 1 | 3 | 1 | | 2 | 2 | 4 | PR | | | | | | | 100 | | | | | | | | | | | 75 | 25 | | | | | | | 6 | 5 |
| Frisonia picticeps | stoneflies | | Perlodidae | species | 1 | 3 | 1 | | 2 | 2 | 3 | PR | | | | | | | 100 | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 5 |
| Isoperla | stoneflies | | Perlodidae | genus | 1 | 3 | 1 | | 4 | 2 | 5 | PR | | | | | | | 75 | | | 25 | | | | | | | | 75 | 25 | | | | | | | 6 | 5 |
| Yoraperla | stoneflies | | Peltoperlidae | genus | 1 | 3 | | | 2 | 1 | 3 | SH | | 100 | | | | | | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 9 |
| Yoraperla brevis | stoneflies | | Peltoperlidae | genus | | 3 | 1 | | 2 | 1 | 3 | SH | | 100 | | | | | | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 9 |
| Pteronarcys | stoneflies | | Pteronarcyidae | genus | 1 | 3 | | | 3 | 0 | 4 | OM | | 50 | | | | 25 | 25 | | | | | | | | | | | 50 | 50 | | | | | | | 6 | 9 |
| Pteronarcys californica | stoneflies | | Pteronarcyidae | genus | | 3 | 1 | | 3 | 1 | 6 | OM | | 50 | | | | 25 | 25 | | | | | | | | | | | 50 | 50 | | | | | | | 6 | 9 |
| Pteronarcys princeps | stoneflies | | Pteronarcyidae | genus | | 3 | 1 | | 2 | 0 | 3 | OM | | 50 | | | | 25 | 25 | | | | | | | | | | | 50 | 50 | | | | | | | 5 | 9 |
| Hemiptera | true bugs | | | genus | | | | | | | | none | none | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ambrysus | true bugs | toe biters | Naucoridae | genus | 1 | 3 | 1 | | 7 | 5 | 8 | PR | | | | | | | 100 | | | | | | | | | | 25 | | 50 | 25 | | | | | | 6 | ?4 |
| Ranatra | true bugs | | Nepidae | genus | 1 | 3 | 1 | | 11 | none | 8 | none | none | | | | | | 100 | | | | | | | | | | | | | 100 | | | | | | 7 | ?4 |
| Megaloptera | | | | genus | | | | | | | | none | none | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Orohermes crepusculus | hellgramite | | Corydalidae | genus | 1 | 3 | 1 | | 4 | 0 | 4 | PR | | | | | | | 100 | | | | | | | | | | | 25 | 50 | | 25 | | | | | 4 | 9 |
| Sialis | alderflies | | Sialidae | genus | 1 | 3 | 1 | | 7 | 4 | 8 | PR | | | | | | | 100 | | | | | | | | | | | 25 | 25 | 25 | 25 | | | | | 7 | 7 |
| Trichoptera | caddisflies | | | variable | | | | | | | | none | none | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Amiocentrus aspilus | caddisflies | | Brachycentridae | species | 1 | 3 | 1 | | 5 | 3 | 7 | CG | SC | | | | | 50 | | | | 50 | | | | | | | | 50 | 25 | 25 | | | | | | 6 | 4 |
| Brachycentrus | caddisflies | | Brachycentridae | genus | 1 | none | | | 4 | 1 | 5 | OM | SC | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brachycentrus americanus | caddisflies | | Brachycentridae | genus | | 3 | 1 | | 4 | 1 | 5 | OM | SC | | | | | 50 | | | 50 | | | | | | | | | 50 | | | | 25 | | | | 7 | 5 |
| Micrasema | caddisflies | | Brachycentridae | genus | 1 | 3 | 1 | | 4 | 1 | 5 | MH | SC | | | 25 | | 75 | | | | | | | | | | | | 50 | 50 | | | | | | | 5 | 5 |
| Heteroplectron californicum | caddisflies | | Calamoceratidae | species | 1 | 3 | 1 | | 3 | 1 | 5 | SH | XY | 25 | 75 | | | | | | | | | | | | | | | 50 | 50 | | | | | | | 4 | 9 |
| Anagapetus | caddisflies | | Glossosomatidae | genus | 1 | 3 | 1 | | 1 | 0 | 2 | SC | | | | | | 100 | | | | | | | | | | | | 100 | | | | | | | | 4 | 5 |
| Glossosoma | caddisflies | | Glossosomatidae | genus | 1 | 3 | 1 | | 4 | 1 | 5 | SC | | | | | | 100 | | | | | | | | | | | | 100 | | | | | | | | 6 | 4 |
| Protoptila | caddisflies | | Glossosomatidae | genus | 1 | 3 | 1 | | 6 | 1 | 7 | SC | | | | | | 100 | | | | | | | | | | | | 100 | | | | | | | | 6 | 4 |
| Arctopsyche | caddisflies | | Hydropsychidae | genus | 1 | none | | | 3 | 1 | 4 | PR | CF | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Arctopsyche grandis | caddisflies | | Hydropsychidae | genus | | 3 | 1 | | 3 | 1 | 4 | PR | CF | | | | | | 50 | | 50 | | | | | | | | | | | | | 100 | | | | 5 | 7 |
| Cheumatopsyche | caddisflies | | Hydropsychidae | genus | 1 | 3 | 1 | | 8 | 5 | 8 | CF | | | | | | | | | 100 | | | | | | | | | | | | | 100 | | | | 7 | 4 |
| Hydropsyche | caddisflies | | Hydropsychidae | genus | 1 | 3 | 1 | | 7 | 4 | 6 | CF | | | | | | | 25 | | 75 | | | | | | | | | | | | | 100 | | | | 6 | 4 |
| Hydroptilidae-unknown | caddisflies | | Hydroptilidae | genus | 1 | 3 | 1 | | 6 | none | 7 | none | none | | | | 75 | | | | | 25 | | | | | | | | 75 | | 25 | | | | | | ?6 | 4 |
| Agraylea | caddisflies | | Hydroptilidae | genus | 1 | 3 | 1 | | 3 | 8 | 3 | PH | | | | | 75 | | | | | 25 | | | | | | | | 25 | | 75 | | | | | | 5 | 4 |
| Hydroptila | caddisflies | | Hydroptilidae | genus | 1 | 3 | 1 | | 7 | 6 | 8 | PH | SC | | | | 75 | | | | | 25 | | | | | | | | 75 | 25 | | | | | | | 7 | 4 |
| *Leucotrichia | caddisflies | | Hydroptilidae | species | | 3 | 1 | | 7 | 6 | 8 | SC | CG | | | | | 50 | | | | 50 | | | | | | | | 25 | | | | 75 | | | | 7 | 4 |
| Leucotrichia pictipes | caddisflies | | Hydroptilidae | species | 1 | 4 | | | 7 | 6 | 8 | SC | CG | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ochrotrichia | caddisflies | | Hydroptilidae | genus | 1 | 3 | 1 | | 6 | 4 | 7 | PH | CG | | | | | 50 | | | | 50 | | | | | | | | 75 | 25 | | | | | | | 6 | 4 |
| *Palaeagapetus | caddisflies | | Hydroptilidae | species | | 3 | 1 | | 0 | 4 | 2 | PH | | | | 75 | 25 | | | | | | | | | | | | | 25 | 25 | 50 | | | | | | 4 | 5 |
| Palaeagapetus nearcticus | caddisflies | | Hydroptilidae | species | 1 | 4 | | | 0 | 4 | 2 | PH | | | | 75 | 25 | | | | | | | | | | | | | 25 | 25 | 50 | | | | | | 4 | 5 |

Table 8A-2 (Sheet 4 of 6). Benthic freshwater invertebrate taxa encountered during fall 2002 in the Klamath River, California, PacifiCorp Hydroelectric Project. Table provides information on distinct taxa and their associated tolerance values, functional feeding groups, habit, geographic range category, and life cycle duration category.

| | | | | | | | | | | | | | | Functional feeding group | | | | | | | | | | | Habit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Commom name of group | Common name of subgroup | Family | CAMLnet standard taxonomic effort | CAMLnet distinct taxa | ABA standard taxonomic effort-Level 3 | ABA distinct taxa | | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2.0 ABA tolerance value | CAMLnet 1 FFG | CAMLnet 2 FFG | Detritus shredder | Wood shredder | Macrophyte, moss, and macroalgae shredder | Piercer-herbivore | Scraper | Predator | Parasite | Collector-filterer | Collector-gatherer | Omnivore-Scavenger | Unknown | Skater | Floater | Planktonic | Diver | Swimmer | Clinger | Sprawler | Climber | Burrower | Attacher | Miner | Hypotheic | | Geographic Range Category | Life Cycle Duration Category |
| | | | | | | | | | | | | | | DSH | WSH | MSH | PH | SC | PR | PA | CF | CG | OM | UN | SK | FL | PL | DI | SW | CL | SP | CM | BU | AT | MI | HY | | | |
| Lepidostoma | caddisflies | | Lepidostomatidae | genus | 1 | none | | | 4 | 1 | 4 | SH | | 100 | | | | | | | | | | | | | | | | 25 | 50 | 25 | | | | | | 5 | 5 |
| Lepidostoma-panel case | caddisflies | | Lepidostomatidae | genus | | 3 | 1 | | 4 | 1 | 4 | SH | | 100 | | | | | | | | | | | | | | | | 25 | 50 | 25 | | | | | | 5 | 5 |
| Lepidostoma-turret case | caddisflies | | Lepidostomatidae | genus | | 3 | 1 | | 4 | 1 | 5 | SH | | 100 | | | | | | | | | | | | | | | | 25 | 50 | 25 | | | | | | 6 | |
| Ceraclea | caddisflies | | Leptoceridae | genus | 1 | 3 | 1 | | 5 | 3 | 6 | OM | | | | | | | | | | | 100 | | | | | | | 50 | 25 | 25 | | | | | | 7 | 6 |
| Mystacides | caddisflies | | Leptoceridae | genus | 1 | 3 | 1 | | 5 | 4 | 6 | OM | | 25 | | | | | | | | 75 | | | | | | | | 25 | 50 | 25 | | | | | | 5 | 4 |
| Nectopsyche | caddisflies | | Leptoceridae | genus | 1 | 3 | 1 | | 7 | 3 | 9 | OM | | | | 75 | | | | | | 25 | | | | | | | | 25 | 25 | 50 | | | | | | 7 | 4 |
| Oecetis | caddisflies | | Leptoceridae | genus | 1 | 3 | 1 | | 8 | 8 | 8 | PR | SH | | | | | | 100 | | | | | | | | | | | 25 | 75 | | | | | | | | 7 | 4 |
| Dicosmoecus | caddisflies | | Limnephilidae | genus | 1 | none | | | 3 | 1 | 5 | OM | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dicosmoecus gilvipes | caddisflies | | Limnephilidae | genus | | 3 | 1 | | 4 | 2 | 5 | SC | | 25 | | | | 75 | | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 7 |
| Polycentropus | caddisflies | | Polycentropodidae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | PR | | | | | | | 75 | | 25 | | | | | | | | | 50 | | | | 50 | | | | 7 | 4 |
| Psychomyia | caddisflies | | Psychomyiidae | genus | 1 | 3 | 1 | | 4 | 2 | 6 | CG | SC | | | | | 75 | | | | 25 | | | | | | | | | | | | 100 | | | | 7 | 4 |
| Himalopsyche phryganea | caddisflies | | Rhyacophilidae | species | 1 | 3 | 1 | | 0 | 0 | 2 | PR | | | | | | | 100 | | | | | | | | | | | 100 | | | | | | | | 4 | 9 |
| Rhyacophila | caddisflies | | Rhyacophilidae | genus | 1 | 3 | | | 2 | 0 | 4 | PR | | | | | | | 100 | | | | | | | | | | | 100 | | | | | | | | 5 | 5 |
| Rhyacophila Betteni Group | caddisflies | | Rhyacophilidae | genus | | 3 | 1 | | 4 | 1 | 4 | PR | | | | | | | 100 | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 5 |
| Rhyacophila Brunnea Group | caddisflies | | Rhyacophilidae | genus | | 3 | 1 | | 4 | 1 | 5 | PR | | | | | | | 100 | | | | | | | | | | | 100 | | | | | | | | 7 | 5 |
| Rhyacophila grandis | caddisflies | | Rhyacophilidae | genus | | 3 | 1 | | 1 | none | 3 | PR | | | | | | | 100 | | | | | | | | | | | 75 | 25 | | | | | | | 4 | 7 |
| Rhyacophila narvae | caddisflies | | Rhyacophilidae | genus | | 3 | 1 | | 3 | none | 4 | PR | | | | | | | 100 | | | | | | | | | | | 100 | | | | | | | | 7 | 5 |
| Rhyacophila vagrita | caddisflies | | Rhyacophilidae | genus | | 3 | 1 | | 0 | none | 3 | PR | | | | | | | 100 | | | | | | | | | | | 100 | | | | | | | | 5 | 5 |
| Rhyacophila valuma | caddisflies | | Rhyacophilidae | genus | | 3 | 1 | | 3 | none | 3 | PR | | | | | | | 100 | | | | | | | | | | | 100 | | | | | | | | 5 | 5 |
| Gumaga | caddisflies | | Sericostomatidae | genus | 1 | 3 | 1 | | 6 | 3 | 7 | SH | | 25 | | 50 | | 25 | | | | | 25 | | | | | | | 25 | 50 | | 25 | | | | | 6 | 7 |
| Neophylax | caddisflies | | Uenoidae | genus | 1 | 3 | | | 3 | 3 | 4 | ?G | | | | | | 100 | | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 5 |
| Neophylax splendens | caddisflies | | Uenoidae | genus | | 3 | 1 | | 4 | none | 3 | none | none | | | | | 100 | | | | | | | | | | | | 75 | 25 | | | | | | | 5 | 5 |
| Lepidoptera | aquatic moths | | | genus | | | | | | | | none | none | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Petrophila | aquatic moths | | Pyralidae | genus | 1 | 3 | 1 | | 6 | 5 | 7 | SC | | | | | | 75 | | | | 25 | | | | | | | | 0 | | | | 100 | | | | 7 | 6 |
| Coleoptera | beetles | | | genus | | | | | | | | none | none | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dytiscidae | beetles | predaceous diving beetles | Dytiscidae | genus | 1 | 3 | 1 | | 7 | 5 | 8 | PR | | | | | | | 100 | | | | | | | | | | 25 | 25 | | 50 | | | | | | 7 | 4 |
| Ampumixis dispar | beetles | riffle beetles | Elmidae | species | 1 | 3 | 1 | | 4 | 4 | 4 | CG | SC | | | | | 50 | | | | 50 | | | | | | | | 75 | 25 | | | | | | | 5 | 7 |
| Cleptelmis addenda | beetles | riffle beetles | Elmidae | species | 1 | 3 | 1 | | 6 | 4 | 6 | CG | SC | | | | | 50 | | | | 50 | | | | | | | | 75 | 25 | | | | | | | 6 | 7 |
| Heterlimnius | beetles | riffle beetles | Elmidae | genus | 1 | 3 | 1 | | 3 | 4 | 3 | CG | SC | | | | | 50 | | | | 50 | | | | | | | | 75 | 25 | | | | | | | 5 | 7 |
| Lara | beetles | riffle beetles | Elmidae | genus | 1 | none | | | 3 | 4 | 5 | SH | XY | 10 | 90 | | | | | | | | | | | | | | | 25 | | | | | 75 | | | 5 | 9 |
| Lara avara | beetles | riffle beetles | Elmidae | genus | | 3 | 1 | | 3 | 4 | 5 | SH | XY | 10 | 90 | | | | | | | | | | | | | | | 25 | | | | | 75 | | | 5 | 9 |
| Microcylloepus | beetles | riffle beetles | Elmidae | genus | 1 | 3 | 1 | | 7 | 4 | 8 | CG | SC | | | | | 50 | | | | 50 | | | | | | | | 75 | 25 | | | | | | | 6 | 7 |
| Optioservus | beetles | riffle beetles | Elmidae | genus | 1 | 3 | 1 | | 5 | 4 | 7 | SC | CG | | | | | 50 | | | | 50 | | | | | | | | 75 | 25 | | | | | | | 6 | 7 |
| Zaitzevia | beetles | riffle beetles | Elmidae | species | 1 | 3 | 1 | | 6 | 4 | 7 | SC | CG | | | | | 50 | | | | 50 | | | | | | | | 75 | 25 | | | | | | | 6 | 7 |
| Haliplus | beetles | | Haliplidae | genus | 1 | 3 | 1 | | 8 | 5 | 9 | MH | | | | 75 | | | | | | 25 | | | | | | | | 25 | | 75 | | | | | | 6 | 7 |
| *Hydrophilidae | beetles | water scavenger beetles | Hydrophilidae | genus | 1 | 3 | 1 | | 7 | 5 | 7 | PR | | | | | | | 100 | | | | | | | | | | 25 | 25 | 50 | | | | | | | 7 | 7 |
| Eubrianax edwardsi | beetles | water penny beetles | Psephenidae | species | 1 | 3 | 1 | | 7 | 4 | 7 | SC | | | | | | 75 | | | | 25 | | | | | | | | 75 | | 25 | | | | | | 6 | 7 |
| *Psephenus | beetles | water penny beetles | Psephenidae | species | | 3 | 1 | | 7 | 4 | 8 | SC | | | | | | 75 | | | | 25 | | | | | | | | 75 | | 25 | | | | | | 6 | 7 |
| Psephenus falli | beetles | water penny beetles | Psephenidae | species | 1 | 4 | | | 7 | 4 | 8 | SC | | | | | | 75 | | | | 25 | | | | | | | | 75 | | 25 | | | | | | 6 | 7 |
| Hymenoptera | bees & wasps | | | none | | | | | | | | none | none | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hymenoptera parasitoid | wasp parasitoid | | unknown | none | 1 | 3 | 1 | | none | none | 11 | none | none | | | | | | | 100 | | | | | | | | | | | | | 100 | | | | | 1 | ?5 |
| Diptera | true flies | | | variable | | | | | | | | none | none | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Atherix | true flies | snipe flies | Athericidae | species | | 3 | 1 | | 7 | 2 | 7 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 25 | | 25 | | | | | 7 | 7 |
| Atherix pachypus | true flies | snipe flies | Athericidae | species | 1 | 4 | | | 7 | 2 | 7 | PR | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Blephariceridae | true flies | net-winged midges | Blephariceridae | genus | 1 | 3 | 1 | | 1 | 0 | 3 | SC | | | | | | 100 | | | | | | | | | | | | 100 | | | | | | | | 5 | 5 |
| *Ceratopogonidae | true flies | no-see-ums | Ceratopogonidae | genus | | none | | | 6 | 6 | 6 | PR | CG | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ceratopogoninae | true flies | no-see-ums | Ceratopogonidae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | PR | CG | | | | | | 100 | | | | | | | | | | | | 25 | | 75 | | | | | 7 | 4 |
| Forcipomyiinae | true flies | no-see-ums | Ceratopogonidae | genus | 1 | 3 | 1 | | 7 | 6 | 5 | CG | SC | | | | | 50 | 25 | | | 25 | | | | | | | | 25 | 75 | | | | | | | 7 | 4 |
| Deuterophlebia | true flies | mountain midges | Deuterophlebiidae | genus | 1 | 3 | 1 | | 0 | 0 | 2 | SC | | | | | | 100 | | | | | | | | | | | | 100 | | | | | | | | 5 | 5 |
| Dixa | true flies | dixid midges | Dixidae | genus | 1 | 3 | 1 | | 3 | 2 | 5 | CG | | | | | | | | | | 100 | | | | | | | 50 | | 25 | 25 | | | | | | 7 | 4 |
| Empididae | true flies | dance flies | Empididae | genus | 1 | 3 | 1 | | 5 | 6 | 6 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 25 | | 25 | | | | | 7 | 5 |
| Chelifera/Metachela | true flies | dance flies | Empididae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 25 | | 25 | | | | | 7 | 5 |
| Clinocera | true flies | dance flies | Empididae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 25 | | 25 | | | | | 7 | 5 |
| Hemerodromia | true flies | dance flies | Empididae | genus | 1 | 3 | 1 | | 6 | 6 | 8 | PR | CG | | | | | | 75 | | | 25 | | | | | | | | 50 | 25 | | 25 | | | | | 7 | 5 |



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Table 8A-2 (Sheet 5 of 6). Benthic freshwater invertebrate taxa encountered during fall 2002 in the Klamath River, California, PacifiCorp Hydroelectric Project. Table provides information on distinct taxa and their associated tolerance values, functional feeding groups, habit, geographic range category, and life cycle duration category.

| | | | | | | | | | | | | | Functional feeding group | | | | | | | | | | | Habit | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Commom name of group | Common name of subgroup | Family | CAMLnet standard taxonomic effort | CAMLnet distinct taxa | ABA standard taxonomic effort-Level 3 | ABA distinct taxa | | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2.0 ABA tolerance value | CAMLnet 1 FFG | CAMLnet 2 FFG | Detritus shredder | Wood shredder | Macrophyte, moss, and macroalgae shredder | Piercer-herbivore | Scraper | Predator | Parasite | Collector-filterer | Collector-gatherer | Omnivore-Scavenger | Unknown | Skater | Floater | Planktonic | Diver | Swimmer | Clinger | Sprawler | Climber | Burrower | Attacher | Miner | Hyporheic | | Geographic Range Category | Life Cycle Duration Category |
| | | | | | | | | | | | | | | DSH | WSH | MSH | PH | SC | PR | PA | CF | CG | OM | UN | SK | FL | PL | DI | SW | CL | SP | CM | BU | AT | MI | HY | | | |
| Wiedemannia | true flies | dance flies | Empididae | genus | 1 | 3 | 1 | | 5 | 6 | 5 | PR | | | | | | | 100 | | | | | | | | | | | 50 | 25 | | 25 | | | | | 7 | 5 |
| *Ephydridae | true flies | shore and brine flies | Ephydridae | genus | 1 | 3 | 1 | | 9 | 6 | 9 | none | | | | | | | | | | | 100 | | | | | | | | 50 | | 50 | | | | | 7 | 4 |
| Muscidae | true flies | flies | Muscidae | family | 1 | 3 | | | 8 | 6 | 8 | PR | | | | | | | 100 | | | | | | | | | | | 25 | 50 | | 25 | | | | | 7 | 4 |
| Limnophora | true flies | flies | Muscidae | family | | 3 | 1 | | 8 | 6 | 8 | PR | | | | | | | 100 | | | | | | | | | | | 25 | 50 | | 25 | | | | | 7 | 4 |
| Glutops | true flies | flies | Pelecorhynchidae | genus | 1 | 3 | 1 | | 2 | 3 | 3 | PR | | | | | | | 100 | | | | | | | | | | | | 50 | | 50 | | | | | 7 | 5 |
| Pericoma | true flies | moth flies | Psychodidae | none | | 3 | 1 | | 5 | none | 6 | none | none | | | | | 25 | | | | 75 | | | | | | | | | 50 | | 50 | | | | | 7 | 4 |
| Pericoma/Telmatoscopus | true flies | moth flies | Psychodidae | genus | 1 | none | | | 5 | 4 | 6 | CG | | | | | | 25 | | | | 75 | | | | | | | | | 50 | | 50 | | | | | 7 | 4 |
| Simulium | true flies | black flies | Simuliidae | genus | 1 | 3 | 1 | | 6 | 6 | 7 | CF | | | | | | | | | 100 | | | | | | | | | 50 | | | | 50 | | | | 7 | 4 |
| Caloparyphus | true flies | soldier flies | Stratiomyidae | genus | 1 | 3 | 1 | | 6 | 7 | 6 | CG | | | | | | 25 | | | | 75 | | | | | | | | | 75 | | 25 | | | | | 7 | 5 |
| Tipulidae | true flies | crane flies | Tipulidae | genus | 1 | 3 | 1 | | 4 | 3 | 6 | none | | 50 | | | | | | | | 50 | | | | | | | | | 50 | | 50 | | | | | 6 | 5 |
| Antocha | true flies | crane flies | Tipulidae | genus | 1 | 3 | 1 | | 6 | 3 | 7 | CG | | | | | | | | | | 100 | | | | | | | | 75 | | | | 25 | | | | 7 | 4 |
| Erioptera | true flies | crane flies | Tipulidae | genus | 1 | 3 | 1 | | 4 | 3 | ?? | CG | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hexatoma | true flies | crane flies | Tipulidae | genus | 1 | 3 | 1 | | 5 | 2 | 5 | PR | | | | | | | 100 | | | | | | | | | | | | 25 | | 75 | | | | | 7 | 5 |
| Molophilus | true flies | crane flies | Tipulidae | genus | 1 | 3 | 1 | | 4 | 4 | ?? | SH | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tipula | true flies | crane flies | Tipulidae | genus | 1 | 3 | 1 | | 6 | 4 | 7 | OM | | 50 | | | | | | | | 50 | | | | | | | | | 50 | | 50 | | | | | 7 | 7 |
| Chironomidae | midges | | Chironomidae | variable | | | | | 6 | 6 | 6 | none | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Chironomidae-pupae | midges | | Chironomidae | variable | | 3 | 1 | | 6 | 6 | 6 | none | | | | | | | | | | | | 100 | | | | | | | 100 | | | | | | | 8 | 2 |
| Ablabesmyia | midges | | Chironomidae | genus | 1 | 3 | 1 | | 8 | 8 | 8 | CG | PR | | | | | | 75 | | | 25 | | | | | | | | | 75 | | 25 | | | | | 8 | 2 |
| Apedilum | midges | | Chironomidae | genus | 1 | 3 | 1 | | 11 | none | ?? | none | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Brillia | midges | | Chironomidae | genus | 1 | 3 | 1 | | 5 | 5 | 7 | SH | | 75 | 25 | | | | | | | | | | | | | | | | 75 | | 0 | | 25 | | | 7 | 2 |
| Cardiocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 5 | 5 | 6 | PR | | | | | | | 100 | | | | | | | | | | | 50 | | | | 50 | | | | 7 | 2 |
| Chironomus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 10 | 10 | 10 | CG | | | | | | | | | | 100 | | | | | | | | | 25 | | 75 | | | | | 7 | 2 |
| Cladopelma | midges | | Chironomidae | genus | 1 | 3 | 1 | | 9 | none | 9 | none | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cladotanytarsus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 7 | 7 | 7 | CG | CF | | | | | | | | 50 | 50 | | | | | | | | 25 | 25 | | | 50 | | | | 7 | 2 |
| Corynoneura | midges | | Chironomidae | genus | 1 | 3 | 1 | | 7 | 7 | 6 | CG | | | | | | | | | | 100 | | | | | | | | | 100 | | | | | | | 7 | 2 |
| Cricotopus | midges | | Chironomidae | variable | 1 | 3 | 1 | | 7 | 7 | 6 | CG | SH | | | 25 | | | | | | 75 | | | | | | | | | | | 50 | 50 | | | | 7 | 2 |
| Cricotopus Bicinctus Group | midges | | Chironomidae | group | 1 | 3 | 1 | | 7 | 7 | 7 | CG | SH | | | | | | | | | 100 | | | | | | | | | | | 100 | | | | | 7 | 2 |
| Cricotopus (Nostococladius) | midges | | Chironomidae | none | | 3 | 1 | | 3 | none | 3 | none | none | | | 100 | | | | | | | | | | | | | | | | | | | 100 | | | 5 | 5 |
| Cricotopus Trifascia Group | midges | | Chironomidae | group | 1 | 3 | 1 | | 6 | 7 | 7 | CG | SH | | | | | | | | | 100 | | | | | | | | | | | 50 | 50 | | | | 7 | 2 |
| Diamesa | midges | | Chironomidae | genus | 1 | 3 | 1 | | 5 | none | 3 | none | | | | | | 25 | | | | 75 | | | | | | | | | 100 | | | | | | | 7 | 4 |
| Dicrotendipes | midges | | Chironomidae | genus | 1 | 3 | 1 | | 8 | 8 | 8 | CG | | | | | | | | | 25 | 75 | | | | | | | | | 25 | | 50 | 25 | | | | 7 | 2 |
| Endochironomus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 10 | 10 | 9 | CG | | | | 50 | | | | | 25 | 25 | | | | | | | | | | | | 100 | | | | 7 | 2 |
| Eukiefferiella | midges | | Chironomidae | genus | 1 | 3 | 1 | | 8 | 8 | 6 | OM | | | | | | 25 | 25 | | | 50 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Eukiefferiella Devonica Group | midges | | Chironomidae | genus | | 4 | 1 | | 4 | none | 6 | none | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Glyptotendipes | midges | | Chironomidae | genus | 1 | 3 | 1 | | 10 | none | 10 | none | | | | 25 | | | | | 25 | 50 | | | | | | | | | | | 25 | 50 | 25 | | | 7 | 2 |
| Heterotrissocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 0 | 0 | 3 | CG | SC | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Limnophyes | midges | | Chironomidae | genus | 1 | 3 | 1 | | 8 | 8 | 7 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Macropelopia | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 4 | PR | | | | | | | 100 | | | | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Micropsectra | midges | | Chironomidae | genus | 1 | 3 | 1 | | 7 | 7 | 6 | CG | | | | | | | | | | 100 | | | | | | | | | 50 | | | 50 | | | | 7 | 2 |
| Microtendipes | midges | | Chironomidae | group | 1 | 3 | 1 | | 6 | none | 7 | none | | | | | | | | | 50 | 50 | | | | | | | | | | | | 100 | | | | 7 | 2 |
| Monodiamesa | midges | | Chironomidae | genus | 1 | 3 | 1 | | 7 | 7 | 7 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Nanocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 3 | 3 | 5 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Orthocladius Complex | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | none | 6 | none | | | | | | | | | | 100 | | | | | | | | | 50 | | 50 | | | | | 7 | 2 |
| Parachironomus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 10 | 10 | ?? | PR | CG | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Parakiefferiella | midges | | Chironomidae | genus | 1 | 3 | 1 | | 4 | 4 | 5 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Parametriocnemus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 5 | 5 | 4 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Paraphaenocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 4 | 4 | 3 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Paratanytarsus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | none | none | | | | | | | | 75 | 25 | | | | | | | | | 50 | | | 50 | | | | 7 | 2 |
| Parorthocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | none | 5 | none | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Pentaneura | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | none | 6 | none | | | | | | | 100 | | | | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Phaenopsectra | midges | | Chironomidae | genus | 1 | 3 | 1 | | 7 | 7 | 7 | SC | | | | | | 50 | | | 25 | 25 | | | | | | | | | | | | 100 | | | | 7 | 2 |
| Polypedilum | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | OM | | | | | | | | | | | 100 | | | | | | | 50 | 25 | | 25 | | | | | 7 | 2 |
| Potthastia | midges | | Chironomidae | genus | 1 | 3 | | | 2 | 2 | 4 | CG | | | | | | 25 | | | | 75 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Potthastia Gaeidli Group | midges | | Chironomidae | genus | | 3 | 1 | | 2 | none | 4 | none | | | | | | 25 | | | | 75 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |

Table 8A-2 (Sheet 6 of 6). Benthic freshwater invertebrate taxa encountered during fall 2002 in the Klamath River, California, PacifiCorp Hydroelectric Project. Table provides information on distinct taxa and their associated tolerance values, functional feeding groups, habit, geographic range category, and life cycle duration category.

| | | | | | | | | | | | | | | Functional feeding group | | | | | | | | | | | Habit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Commom name of group | Common name of subgroup | Family | CAMLnet standard taxonomic effort | CAMLnet distinct taxa | ABA standard taxonomic effort-Level 3 | ABA distinct taxa | | Modified Hilsenhoff Biotic Index tolerance value (0-10)-Version 1.0 ABA | CAMLnet tolerance value (0-10) | Version 2.0 ABA tolerance value | CAMLnet 1 FFG | CAMLnet 2 FFG | Detritus shredder | Wood shredder | Macrophyte, moss, and macroalgae shredder | Piercer-herbivore | Scraper | Predator | Parasite | Collector-filterer | Collector-gatherer | Omnivore-Scavenger | Unknown | Skater | Floater | Planktonic | Diver | Swimmer | Clinger | Sprawler | Climber | Burrower | Attacher | Miner | Hyporheic | | Geographic Range Category | Life Cycle Duration Category |
| | | | | | | | | | | | | | | DSH | WSH | MSH | PH | SC | PR | PA | CF | CG | OM | UN | SK | FL | PL | DI | SW | CL | SP | CM | BU | AT | MI | HY | | | |
| Potthastia Longimana Group | midges | | Chironomidae | genus | | 3 | 1 | | 2 | none | 4 | none | | | | | | 25 | | | | 75 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Procladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 9 | 9 | 9 | PR | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Psectrocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 8 | 8 | 8 | CG | | | | 25 | | | | | | 75 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Pseudochironomus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 5 | 5 | 7 | CG | | | | | | | | | | 100 | | | | | | | | | 25 | | 75 | | | | | 7 | 2 |
| Pseudorthocladius | midges | | Chironomidae | none | 1 | 3 | 1 | | 0 | none | 2 | none | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Pseudosmittia | midges | | Chironomidae | none | 1 | 3 | 1 | | 6 | none | 5 | | | | | | | | | | | | | 100 | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Psilometriocnemus | midges | | Chironomidae | none | 1 | 3 | 1 | | 6 | none | 5 | | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Rheocricotopus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 5 | OM | | | | | | | | | | | 100 | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Rheotanytarsus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | CF | | | | | | | | | 100 | | | | | | | | | | | | | 100 | | | | 7 | 2 |
| Stilocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | none | 3 | none | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| *Sublettea | midges | | Chironomidae | species | | 3 | 1 | | 4 | 4 | 4 | none | | | | | | | | | | | | 100 | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Sublettea coffmani | midges | | Chironomidae | species | 1 | 4 | | | 4 | 4 | 4 | none | none | | | | | | | | | | | 100 | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Synorthocladius | midges | | Chironomidae | genus | 1 | 3 | 1 | | 2 | 2 | 4 | CG | | | | | | 25 | | | | 75 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Tanytarsus | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 7 | CF | | | | | | | | | 75 | 25 | | | | | | | | | | | | 100 | | | | 7 | 2 |
| Thienemanniella | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Thienemannimyia Complex | midges | | Chironomidae | genus | 1 | 3 | 1 | | 6 | 6 | 6 | PR | | | | | | | 100 | | | | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Tvetenia | midges | | Chironomidae | genus | 1 | 3 | | | 5 | 5 | 5 | CG | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Tvetenia Bavarica Group | midges | | Chironomidae | genus | | 3 | 1 | | 5 | none | 5 | none | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| Tvetenia Discoloripes Group | midges | | Chironomidae | genus | | 3 | 1 | | 5 | none | ?? | none | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tvetenia Vitracies Group | midges | | Chironomidae | genus | | 3 | 1 | | 5 | none | 5 | none | | | | | | | | | | 100 | | | | | | | | | 75 | | 25 | | | | | 7 | 2 |
| *Xenochironomus | midges | | Chironomidae | species | | 3 | 1 | | 0 | 0 | 2 | PR | | | 100 | | | | | | | | | | | | | | | | | | | | 100 | | | 7 | 2 |
| Xenochironomus xenolabis | midges | | Chironomidae | species | 1 | 4 | | | 0 | 0 | 2 | PR | | | 100 | | | | | | | | | | | | | | | | | | | | 100 | | | 7 | 2 |



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Table 8A-3 (Sheet 1 of 1). Klamath River and reservoir mollusc taxa (identified by Dr. Terrence Frest) encountered during fall 2002 in the Klamath River, California, PacifiCorp Hydroelectric Project. Average of three replicate samples. Abundances are converted to a square meter basis.

| | | | Fall Creek | | | | | | Klamath River mainstem | | | | | | | | | | | | | | | | | | | | | | | | | Reservoirs | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Taxon | Family | Status | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 | Copco Reservoir CR007-net Oct. 2, 2002 | Copco Reservoir CR008-dredge Oct. 2, 2002 | Lake Ewauna EW001 shallow dredge Sept. 30, | Lake Ewauna EW002 deep dredge Sept. 30, | Irongate Reservoir IG009 dredge Oct. 2, | Irongate Reservoir IG010 net Oct. 2, 2002 | J.C. Boyle Reservoir JCB005 dredge Oct 1, | J.C. Boyle Reservoir JCB005 net Oct 1, 2002 | Keno Reservoir KN003 net Oct. 1, 2002 | Keno Reservoir KN003 dredge Oct. 1, 2002 |
| **Pelecypoda (clams and mussels)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | none | | | | | | | | |
| *Musculium raymondi* | Sphaeriidae | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 9 | | | | | | 3 | 4 | |
| *Pisidium undetermined* | Sphaeriidae | | | | | | | | 12 | | | | | | | | | 7 | | | | | | | 24 | | | | | | | | | | | | | | | | | | | |
| *Pisidium casertanum* | Sphaeriidae | C | | 152 | 124 | 31 | | | | | | 27 | | | | 6 | | | 9 | | | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| *Pisidium insigne* | Sphaeriidae | C | 20 | | | 10 | 3 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisidium near ultramontanum* | Sphaeriidae | R/L | | | | | | | | | | 11 | | | | 6 | | | | | | | | | | | | 6 | | | | | | | | | | | | | | | | | |
| *Pisidium variable* | Sphaeriidae | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 9 | | | | | 9 | | | |
| *Sphaerium simile* | Sphaeriidae | U | | | | | | | | | | | | | | 6 | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 9 | 6 | 6 | 34 |
| *?Anodonta californiensis* | Unionidae | L | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Gastropoda (snails and limpets)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | none | | | | | | | | |
| *Ferrissia probably rivularis* | Ancylidae | C | | | | | | | | 6 | | | | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Colligyrus new species #3* | Hydrobiidae | R | | | | | | | | 7 | | | | | | | | | | | | | 43 | 32 | | | | | | 2 | | | | | | | | | | | | | | | |
| *Fluminicola unidentified juveniles* | Hydrobiidae | | | 515 | 1161 | 1322 | 413 | 424 | | | | | | | | | | | | | | | 1 | | | | | | | 4 | | | | | | | | | | | | | | | |
| *Fluminicola new species #1* | Hydrobiidae | L | | | | | | | 5 | 285 | 430 | 7 | | 5 | | 5 | | | | | | 5 | | | | | | 12 | 1 | | | | | | | | 181 | | | | 69 | 24 | 284 | 621 | | |
| *Fluminicola new species #4* | Hydrobiidae | L | | 22 | 52 | | 8 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fluminicola new species #5* | Hydrobiidae | L | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fluminicola ?new species #6* | Hydrobiidae | L | | 61 | 294 | 522 | 108 | 130 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fluminicola new species #8* | Hydrobiidae | L | | 58 | 190 | | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Fluminicola new species* | Hydrobiidae | R | ### | 65 | 435 | 800 | 140 | 358 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pyrgulopsis archimedis* | Hydrobiidae | R | | | | | | | | 6 | | | | | | | | | | | | | | 7 | | | | | | | | | | | | | | | | | 34 | | 17 | | | |
| *Fossaria modicella* | Lymnaeidae | C | | | | | | | | | | | | | 5 | | 9 | | | | | | 48 | | | | | | | | | | | | | 3 | | | | | | | | | | |
| *Lanx alta* | Lymnaeidae | L | | | | | | | 31 | 15 | 271 | 11 | | 9 | | 58 | | 3 | | 9 | | 14 | | 169 | | 15 | 19 | | 5 | 5 | 2 | | | | | | | | | | | | | | |
| *Radix auricularia* | Lymnaeidae | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | 6 | | |
| *Physella gyrina* | Physidae | C | | | | | | | 23 | | 9 | | | | | | | | | | | 5 | | 3 | | | 4 | 3 | 14 | 11 | | 18 | | | 34 | 52 | | | | 36 | | | | | |
| *Physella virgata* | Physidae | C | | | | | | | | | | | | | | | | | | | | | | | 26 | 16 | 15 | 7 | 4 | | | | | | | | | | | | | | | | |
| *Gyraulus parvus* | Planorbidae | C | | | | | | | | | | | | | | | | | | | | | | | 5 | 135 | 9 | | 2 | | | | | | | 25 | 60 | | 26 | | 10 | 34 | 24 | 4 | 9 |
| *Menetus dilatatus* | Planorbidae | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 9 | | | | 1 | | | 12 | |
| *Planorbella subcrenatum* | Planorbidae | C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 6 | |
| *Vorticifex effusus effusus* | Planorbidae | C | | | | | | | 5 | 15 | 90 | 14 | | | | | | | | | | 4 | | 13 | 61 | | 387 | 4 | 11 | 32 | 11 | 2 | | | 1 | 26 | | | | 17 | 4 | 17 | 3 | 4 | |
| *Juga (Calibasis) acutifilosa* | Pleuroceridae | L | 168 | 460 | 246 | 1300 | 340 | 368 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juga (Juga) silicula shastaensis* | Pleuroceridae | C | | | | | | | | | | | | | | | | | | | | | | | | 5 | | | | | | | | | | | | | | | | | | | | |
| *Juga (Oreobasis) near nigrina* | Pleuroceridae | R | 169 | 10 | | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Juga (Oreobasis) new species* | Pleuroceridae | R | | | | | | | | 61 | 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Valvata humeralis* | Valvatidae | U | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 26 | | | | 4 | 17 | 15 | 2 | |

L= listed at state or federal level as having conservation status, R= rare, scattered populations in a small region U= uncommon, widespread but patchily distributed, C= common and widespread
?Anodonta californiensis is a large mussel that was discarded in the field before positive identification could be made. Believed to be this species from description of shell.
Square area sampled in reservoir was estimated. Abundances (above) converted to a square meter basis.

Table 8A-4 (Sheet 1 of 2). Long-lived (>1 year life cycle) macroinvertebrate taxa encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project.

| | | | Fall Creek | | | | | | Klamath River mainstem | | | | | | | | | | | | | | | | | Varial Zone | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Life Cycle Duration Category | Version 2 long-lived taxa-ABA | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 |
| Porifera | 9 | Y | | | | | | | | | | | | | | | | | | | | | | 0.09 | | | | | | | | | | | |
| *Hirudinea | 9 | Y | 0.1 | | | | 0.29 | | 0.18 | | | 0.05 | | | 0.18 | | 0.13 | | | 0.06 | | | 2.72 | 1.71 | 3.99 | | | | | 0.15 | 0.62 | 0.77 | | 0.11 | |
| *Helobdella stagnalis* | ?7 | Y | | 2.7 | | | | | | | | | | | 0.06 | | | | | | | | 1.56 | 0.66 | 1.05 | | | | | | | | | | |
| Hydrobiidae | 9 | Y | 48.6 | 33.07 | 31.42 | 40.13 | 15.47 | 27.3 | 0.04 | 0.1 | | | | 1.96 | 0.4 | | | | | 0.24 | | | | | | | | | | | | | | 0.11 | |
| *Colligyrus* | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lymnaeidae | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | 3.06 | | 20.83 | | | | | | 71.05 |
| *Fossaria* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lanx* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Radix auricularia* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Physella/Physa* | 6 | Y | | | | | | | 0.11 | | 0.11 | | | 0.13 | 0.32 | | 0.18 | 0.51 | 0.21 | 0.65 | 0.24 | | 0.15 | | | | | | | | | | | 0.11 | |
| *Juga* | 9 | Y | 6.1 | 11.56 | 3.63 | 19.87 | 7.66 | 10.86 | | 1.3 | 0.32 | | | | | | 0.05 | | | | | | | | | | | | | | | | | | |
| *Valvata* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pacifasticus* | 7 | Y | | | | | | | | 0.1 | 0.11 | | | | | | | | | | | 0.17 | | | | | | | | | | | | | |
| Aeshnidae | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Octogomphus* | 7 | Y | 0.2 | 0.05 | 0.13 | 1.38 | 0.17 | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Octogomphus specularis* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ophiogomphus* | 7 | Y | | | | | | | | | | | | | | | 0.63 | 0.89 | 0.25 | 2.44 | 2.13 | 0.69 | | | | | | | | | | | | | |
| Libellulidae | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coenagrionidae | 6 | Y | | | | | | | | | | | | | | | | | 0.07 | | | | 0.1 | | | | | | | | | | | | |
| *Argia* | 6 | Y | | | 0.22 | | | | 0.4 | 0.1 | | | | 0.13 | 0.31 | 0.73 | | 0.69 | 0.05 | 0.17 | 0.21 | 0.1 | 0.05 | | | | | | | | | 0.03 | | | |
| *Drunella* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella doddsi* | 7 | Y | | | | 0.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella spinifera* | 7 | Y | 0.15 | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Calineuria californica* | 9 | Y | 0.45 | 0.97 | | 0.29 | 0.98 | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hesperoperla* | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hesperoperla pacifica* | 9 | Y | 0.24 | | | 0.1 | 0.2 | 0.17 | | 0.3 | 0.95 | 0.52 | | 0.58 | 0.45 | | 0.39 | 0.27 | 0.62 | 0.17 | 0.77 | 1.61 | | | | 0.29 | | 0.61 | | 1.17 | | 0.46 | | 1.3 | |
| *Yoraperla* | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Yoraperla brevis* | 9 | Y | 2.03 | 1.77 | | | 0.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pteronarcys* | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pteronarcys californica* | 9 | Y | | | | | | | | 0.1 | 0.42 | 1.01 | | 0.32 | 0.21 | | 1.05 | 1.4 | 0.28 | 0.31 | 0.51 | 0.26 | | | | 0.3 | | | | 0.2 | | | | | |



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Table 8A-4 (Sheet 2 of 2). Long-lived (>1 year life cycle) macroinvertebrate taxa encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project.

| | | | Fall Creek | | | | | | Klamath River mainstem | | | | | | | | | | | | | | | | | Varial Zone | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | Life Cycle Duration Category | Version 2 long-lived taxa-ABA | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 |
| *Pteronarcys princeps* | 9 | Y | | | | 0.3 | 0.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Orohermes crepusculus* | 9 | Y | | | | 0.2 | 0.3 | 0.32 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sialis* | 7 | Y | 0.2 | 1.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Heteroplectron californicum* | 9 | Y | 0.05 | 0.05 | 0.17 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arctopsyche* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Arctopsyche grandis* | 7 | Y | | | | 0.19 | 0.44 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ceraclea* | 6 | Y | | | | | | | | | | 0.46 | | | | 0.31 | | | | | 0.11 | | 0.1 | | | 0.08 | | 0.27 | | | | | | 0.11 | |
| *Dicosmoecus* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dicosmoecus gilvipes* | 7 | Y | | | | | | | | | | | | | | | | | 0.18 | | | | | | 0.04 | | | | | | | | | | |
| *Himalopsyche phryganea* | 9 | Y | | | | | 0.13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila grandis* | 7 | Y | | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Gumaga* | 7 | Y | 1.46 | 0.76 | 0.39 | 0.09 | 0.22 | 0.18 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Petrophila* | 6 | Y | | | | | | | 2.54 | 0.1 | | 0.55 | | 0.21 | 1.47 | 4.41 | 1.42 | 2 | 1.26 | 3.48 | 4.32 | 4.46 | 0.45 | 1.83 | 4.08 | 4.94 | | 11.79 | | 6.48 | | 3.8 | | 0.26 | |
| *Ampumixis dispar* | 7 | Y | 10.08 | 0.16 | 3.56 | 0.41 | 3.66 | 7.51 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Cleptelmis addenda* | 7 | Y | | 0.16 | 1.22 | 0.1 | | 0.08 | | 4.5 | 0.25 | 0.95 | 3.23 | | | | | | | 0.06 | | | | | | | | | | | | | | | |
| *Heterlimnius* | 7 | Y | 10.51 | 7.11 | 0.51 | 2.12 | 3.44 | 3.32 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lara* | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lara avara* | 9 | Y | | | | | 0.24 | 0.16 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Microcylloepus* | 7 | Y | | | | | | | | | | 0.14 | | | 0.06 | 0.08 | | | | 0.08 | | 0.23 | | | | | | | | | | | | | |
| *Optioservus* | 7 | Y | | 0.05 | | | | | 0.83 | 11 | 14.64 | 5.21 | | 0.29 | 0.06 | 0.11 | 0.11 | | 0.17 | 0.48 | 0.22 | 0.17 | | | 0.03 | 4.53 | 8.16 | 2.12 | | 5.22 | 1.24 | 5.41 | | 2.27 | 2.63 |
| *Zaitzevia* | 7 | Y | | 0.05 | | 0.18 | | | | | 0.03 | | | 0.19 | 4.37 | | 7.73 | 12.71 | 13.9 | 21.92 | 29.55 | 29.22 | | | | 0.24 | | 1.84 | | 13.57 | 2.48 | 5.41 | | 6.02 | 7.89 |
| *Haliplus* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hydrophilidae | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Eubrianax edwardsi* | 7 | Y | | | | 0.81 | | | | | | | | | | | 0.05 | | | | | | | | | | | | | | | | | | |
| **Psephenus* | 7 | Y | | | | | | | | | | | | | | | | | 0.02 | | | | | | | | | | | | | | | | |
| *Psephenus falli* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Atherix* | 7 | Y | | | | | | | 0.19 | 0.2 | 0.11 | 0.33 | | | | 0.08 | | | | | | | | | | 0.45 | | | | | | 0.04 | | | |
| *Atherix pachypus* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Tipula* | 7 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Long-lived taxa (%)-Version 2 ABA | | | 80.2 | 59.6 | 41.3 | 66.4 | 33.9 | 50.8 | 4.3 | 18.3 | 17.1 | 9.2 | 3.2 | 3.8 | 7.9 | 5.7 | 11.7 | 18.5 | 17.0 | 30.1 | 38.1 | 36.9 | 5.1 | 4.3 | 9.2 | 10.8 | 11.2 | 16.6 | 20.8 | 26.8 | 4.3 | 15.9 | 0.0 | 10.3 | 81.6 |
| **Long-lived taxa richness V2 ABA** | | | 13 | 15 | 9 | 16 | 16 | 11 | 7 | 10 | 10 | 9 | 1 | 8 | 11 | 6 | 10 | 7 | 11 | 12 | 9 | 9 | 7 | 4 | 5 | 7 | 2 | 5 | 1 | 6 | 3 | 7 | 0 | 8 | 3 |

Table 8A-5 (Sheet 1 of 1). Tolerant macroinvertebrate taxa (using CAMLnet criteria, January 2003 version) encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project. All taxa with tolerance values of 8, 9 & 10.

| | | | Fall Creek | | | | | | Klamath River mainstem | | | | | | | | | | | | | | | | | | Varial Zone | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | CAMLnet tolerance value (8-10) | CAMLnet tolerant taxa (7-10) | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 |
| *Hirudinea | 10 | Y | 0.1 | | | | 0.29 | | 0.18 | | | 0.05 | | | 0.18 | | 0.13 | | | 0.06 | | | 2.72 | 1.71 | 3.99 | | | | | 0.15 | 0.62 | 0.77 | | 0.11 | |
| Hydrobiidae | 8 | Y | 48.6 | 33.07 | 31.42 | 40.13 | 15.47 | 27.3 | 0.04 | 0.13 | | | | 1.96 | 0.4 | | | | | 0.24 | | | | | | | | | | | | | | 0.11 | |
| *Fossaria* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Physella/Physa* | 8 | Y | | | | | | | 0.11 | | 0.11 | | | 0.13 | 0.32 | | 0.18 | 0.51 | 0.21 | 0.65 | 0.24 | | 0.15 | | | | | | | | | | | 0.11 | |
| *Gyraulus* | 8 | Y | | | | | | | | | | | | | 0.06 | | | 0.23 | | 0.06 | | | | | | | | | | | | | | | |
| *Planorbella* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Vorticifex* | 8 | Y | | | | | | | 0.04 | 0.31 | 1.05 | 0.22 | | 0.58 | 0.77 | | 1.53 | 10.45 | 0.07 | 1.06 | 0.73 | 0.21 | | | | | | | | | | | | 0.09 | |
| *Valvata* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Musculium* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pisidium* | 8 | Y | 0.5 | 2.58 | 1.24 | 0.62 | 0.06 | 0.15 | 0.1 | | | 0.57 | | 0.05 | | 0.11 | | 0.16 | | | | | | | | | | 0.27 | | 0.2 | 1.24 | | | | |
| *Sphaerium* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ostracoda | 8 | Y | | | | | | 0.45 | | | | | | | | | | | | | 0.11 | | | | | | | | | | | | | | | |
| *Hyalella azteca* | 8 | Y | | | | | | | 0.27 | | 0.11 | 2.07 | | 3.36 | 18.86 | 0.5 | 9.91 | 9.7 | 0.05 | 5.27 | 0.08 | | 4.63 | 0.45 | 0.22 | | | | | | | | | 0.19 | |
| *Caecidotea* | 8 | Y | | | | | | | 1.08 | 0.4 | | 0.41 | | 0.85 | 10.69 | 0.34 | 11 | 0.81 | 0.18 | | | | 4.63 | 18.45 | 6.87 | 0.29 | | 0.14 | | 0.95 | | 1.59 | | 0.19 | |
| Libellulidae | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Callibaetis* | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Agraylea* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Oecetis* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ablabesmyia* | 8 | Y | | | | | | | | | | | | | | | | | | 0.06 | | | | | | | | | | | | | | | | |
| *Chironomus* | 10 | Y | | | | | | | | | | | | | | | | 0.04 | | | | | | | | | | | | | | | | | | |
| *Dicrotendipes* | 8 | Y | | | | | | | | | | | | | | | | | | | | | 1.66 | | | | | | | | | | | | | |
| *Endochironomus* | 10 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Eukiefferiella* | 8 | Y | 0.29 | | 2.37 | 1.77 | 0.92 | 0.67 | 2.45 | 8.52 | 1.65 | 8.24 | | 2.86 | 1.81 | 3.02 | 0.27 | 0.36 | 0.02 | 0.42 | 0.27 | 0.21 | 2.77 | | 0.03 | 1.21 | | 0.63 | | 0.46 | 0.62 | 2.21 | | 3.03 | |
| *Limnophyes* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | 1.02 | 0.07 | | | | | 6.67 | | | |
| *Parachironomus* | 10 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Procladius* | 9 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Psectrocladius* | 8 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **% Tolerant taxa- TV's 8,9,10 CA version** | | | 49.5 | 35.7 | 35.0 | 42.5 | 16.7 | 28.6 | 4.3 | 9.4 | 2.9 | 11.6 | 0.0 | 9.8 | 33.1 | 4.0 | 23.0 | 22.3 | 0.5 | 7.8 | 1.4 | 0.4 | 16.6 | 20.6 | 11.1 | 1.5 | 1.0 | 1.1 | 0.0 | 1.8 | 2.5 | 4.6 | 6.7 | 3.8 | 0.0 |
| **Tolerant taxa richness, CA version** | | | 4 | 2 | 3 | 3 | 4 | 4 | 8 | 4 | 4 | 6 | 0 | 7 | 8 | 4 | 6 | 8 | 5 | 8 | 5 | 2 | 6 | 3 | 4 | 2 | 1 | 4 | 0 | 4 | 3 | 3 | 1 | 7 | 0 |



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Table 8A-6 (Sheet 1 of 2). Intolerant macroinvertebrate taxa (using CAMLnet criteria, January 2003 version) encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project.

| | | | | Fall Creek | | | | | | Klamath River mainstem | | | | | | | | | | | | | | | | | Varial Zone | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | CAMLnet distinct taxa | CAMLnet tolerance value (0-10) | CAMLnet intolerant taxa (0-2) | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 |
| Ameletus | | 0 | Y | | | | | | | | 0.19 | 0.21 | | | | | | | | | | | | | | | | | 0.14 | | | | | | |
| *Caudatella* | 1 | 1 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Caudatella heterocaudata* | | 1 | Y | | | | | | | | 0.13 | 0.06 | | | | | | | | | | | | | | | | | | | | | | | |
| *Caudatella hystrix* | | 1 | Y | | | | 0.09 | 2.06 | 3.47 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella* | 1 | 0 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella doddsi* | | 0 | Y | | | | 0.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Drunella spinifera* | | 0 | Y | 0.15 | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ephemerella* | 1 | none | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Ephemerella inermis* | | 1 | Y | 2.05 | 0.05 | 0.32 | 0.89 | 1.92 | 0.62 | | | | 0.38 | | | | 0.67 | 1.8 | | | 0.08 | | | 8.36 | | | | | 0.07 | | 0.07 | | 0.03 | | 1.17 | |
| *Serratella micheneri* | | 1 | Y | | | | | | | | | | | | | | 0.2 | 1.8 | 1.23 | 1.08 | 0.18 | 0.82 | 0.17 | 0.3 | | | | | | | 0.13 | | 0.03 | | 1.02 | |
| *Cinygma* | | | Y | | 0.34 | 0.06 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhithrogena* | | 0 | Y | | | | | 0.12 | | | | 0.11 | | | | | | | | | | 0.1 | 1.51 | | | | 0.08 | | 0.14 | | 1.67 | | 0.73 | | 1.52 | |
| *Epeorus grandis* | | 0 | Y | | | | | 0.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capniidae | | 1 | Y | | | | | 0.23 | 0.26 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chloroperlidae | | 1 | Y | | 0.23 | | | | 0.08 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Sweltsa* | | 1 | Y | | 0.63 | 0.19 | | | 0.15 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Malenka* | | 2 | Y | | | | | | | | 0.24 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Zapada* | | 2 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Zapada cinctipes* | | 2 | Y | 1.81 | 5.31 | 3.17 | 1.15 | 6.42 | 3.36 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Zapada Oregonensis Group* | | 2 | Y | | | 0.22 | 0.1 | 0.53 | 0.25 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Calineuria californica* | 1 | 2 | Y | 0.45 | 0.97 | | 0.29 | 0.98 | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hesperoperla* | 1 | 2 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hesperoperla pacifica* | | 2 | Y | 0.24 | | | 0.1 | 0.2 | 0.17 | | 0.29 | 0.95 | 0.52 | | 0.58 | 0.45 | | 0.39 | 0.27 | 0.62 | 0.17 | 0.77 | 1.61 | | | | 0.29 | | 0.61 | | 1.17 | | 0.46 | | 1.3 | |
| Perlodidae | | 2 | Y | | | | | 0.06 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Frisonia picticeps* | 1 | 2 | Y | | | | | 0.65 | 0.08 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Isoperla* | | 2 | Y | | | | | 0.5 | 0.23 | | | | | | | | | | | | | | | | | | | | | | | | | 6.67 | 0.09 |
| *Yoraperla* | 1 | 1 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Yoraperla brevis* | | 1 | Y | 2.03 | 1.77 | | | 0.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pteronarcys* | 1 | 0 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Pteronarcys californica* | | 1 | Y | | | | | | | | 0.1 | 0.42 | 1.01 | | 0.32 | 0.21 | | 1.05 | 1.4 | 0.28 | 0.31 | 0.51 | 0.26 | | | | 0.3 | | | | 0.2 | | | | | |
| *Pteronarcys princeps* | | 0 | Y | | | | 0.3 | 0.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Orohermes crepusculus* | 1 | 0 | Y | | | | 0.2 | 0.3 | 0.32 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Brachycentrus americanus* | | 1 | Y | | | | | 0.24 | 0.24 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Micrasema* | | 1 | Y | 4.39 | 0.16 | 2.52 | 1.45 | 0.63 | 2.56 | | 0.24 | 0.11 | | | | | | 0.05 | | | | | | | | | | | | | | | | | |
| *Heteroplectron californicum* | 1 | 1 | Y | 0.05 | 0.05 | 0.17 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Anagapetus* | 1 | 0 | Y | | 0.29 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Glossosoma* | | 1 | Y | | | | 0.39 | | 0.17 | | | 2.74 | | | | | | | | | 0.08 | 0.26 | 0.17 | | | | 0.08 | | 0.07 | | | | | | 0.09 | |
| *Protoptila* | 1 | 1 | Y | | | | | | | | | | | | | | | | | | 0.47 | 0.43 | | | | | | | | | | | | | |
| *Arctopsyche* | 1 | 1 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 8A-6 (Sheet 2 of 2). Intolerant macroinvertebrate taxa (using CAMLnet criteria, January 2003 version) encountered during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project.

| | | | | Fall Creek | | | | | | Klamath River mainstem | | | | | | | | | | | | | | | | | Varial Zone | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benthic invertebrate taxa | CAMLnet distinct taxa | CAMLnet tolerance value (0-10) | CAMLnet intolerant taxa (0-2) | FCA1, 10-8-2002 | FCB1, 10-8-2002 | FCB2, 10-8-2002 | FCB3, 10-9-2002 | FCF1, 10-9-2002 | FCF2, 10-9-2002 | BB1, 9-12-2002 | BB2, 9-10-2002 | BB3, 9-9-2002 | BF1, 9-11-2002 | BF1-V, 9-10-2002 | CB1, 9-12-2002 | CB2, 9-12-2002 | KDB, 9-11-2002 | KR1, 9-10-2002 | KR2, 9-11-2002 | KR3, 9-12-2002 | KR4, 9-9-2002 | KR5, 9-9-2002 | KR6, 9-9-2002 | LEKR, 9-10-2002 | LRB, 9-10-2002 | LRF, 9-9-2002 | BF2, 9-11, 2002 | BF2-V, 9-11-2002 | BF3, 9-11-2002 | BF3-V, 9-10-2002 | BF4, 9-10-2002 | BF4-V, 9-10-2002 | BF5, 9-11-2002 | BF5-V, 9-10-2002 | BF6, 9-11-2002 | BF6-V, 9-12-2002 |
| *Arctopsyche grandis* | | 1 | Y | | | | 0.19 | 0.44 | 0.4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lepidostoma* | | 1 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Lepidostoma-panel case* | | 1 | Y | | | | | | | | | | | | | 0.03 | | | | | | | | | | | | | | | | | | | |
| *Lepidostoma-turret case* | | 1 | Y | 0.1 | | | | | | | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dicosmoecus* | 1 | 1 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Dicosmoecus gilvipes* | | 2 | Y | | | | | | | | | | | | | | | | | 0.18 | | | | | | 0.04 | | | | | | | | | |
| *Psychomyia* | | 2 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0.08 | | 0.26 | | |
| *Himalopsyche phryganea* | 1 | 0 | Y | | | | | 0.13 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila* | | 0 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila Betteni Group* | | 1 | Y | 0.05 | 0.56 | 0.22 | 0.52 | 0.56 | 0.48 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila Brunnea Group* | | 1 | Y | 0.39 | 0.5 | 0.78 | 0.19 | 1.57 | 0.65 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila grandis* | | none | Y | | 0.05 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila narvae* | | 1 | Y | | 0.23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila vagrita* | | 0 | Y | | 0.21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Rhyacophila valuma* | | 0 | Y | 0.05 | | | | 0.13 | 1.11 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Atherix pachypus* | 1 | 2 | Y | | | | | | | 0.19 | 0.21 | 0.11 | 0.33 | | | | 0.08 | | | | | | | | | | 0.45 | | | | | | 0.04 | | |
| *Blephariceridae | 1 | 0 | Y | | | | | | | | 1.25 | 0.16 | | | | | | 0.41 | 1.47 | 1.64 | 0.08 | 2.19 | 2.88 | | | | | | | | | | | | |
| *Deuterophlebia* | 1 | 0 | Y | | | | | | | | | 0.11 | | | | | | | | | | | | | | | | | | | | | | | |
| *Dixa* | | 2 | Y | | 0.29 | 0.17 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Hexatoma* | | 2 | Y | 0.2 | | | | 0.2 | 0.09 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Diamesa* | 1 | 0 | Y | | | | | | | | | | | | | | 0.08 | | | | | | | | | | | | | | | | | | |
| *Heterotrissocladius* | 1 | 0 | Y | | | 0.13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Potthastia* | | 2 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Potthastia Gaeidii Group* | | 2 | Y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Potthastia Longimana Group* | | 2 | Y | | | | | | | | 0.07 | | | | | | | | | | | | | | | | | | | | | | | | |
| *Synorthocladius* | | 2 | Y | | | | | | | | | | | | 0.03 | | | | 0.11 | | 0.17 | 0.59 | 0.34 | | | | | | | | | | | 0.11 | |
| **Xenochironomus* | | 0 | Y | | | | | | | | | | | | | | 0.08 | | | | | | | | | | | | | | | | | | |
| % INTOLERANT TAXA | | | | 11.96 | 11.64 | 7.95 | 6.23 | 18.78 | 15.17 | 0.19 | 3.2 | 4.98 | 2.24 | 0 | 0.93 | 0.69 | 1.11 | 5.5 | 4.48 | 3.8 | 1.54 | 5.67 | 6.94 | 8.66 | 0 | 0.04 | 1.2 | 0 | 1.03 | 0 | 3.32 | 0 | 1.55 | 6.67 | 5.3 | 0 |
| INTOLERANT TAXA RICHNESS | | | | 13 | 16 | 11 | 17 | 24 | 20 | 1 | 10 | 10 | 4 | 0 | 3 | 3 | 5 | 6 | 5 | 5 | 7 | 8 | 7 | 2 | 0 | 1 | 5 | 0 | 5 | 0 | 6 | 0 | 6 | 1 | 6 | 0 |
| SENSITIVE EPT RICHNESS | | | | 12 | 15 | 9 | 16 | 23 | 19 | 0 | 7 | 7 | 3 | 0 | 2 | 3 | 2 | 5 | 3 | 4 | 6 | 6 | 5 | 2 | 0 | 1 | 4 | 0 | 5 | 0 | 6 | 0 | 5 | 1 | 6 | 0 |

Table 8A-7 (Sheet 1 of 3). Macroinvertebrate metrics by sampling reach during fall 2002 sampling in the Klamath River mainstem, Boyle full flow (or peaking) reach varial zone, and Fall Creek.

| Sample ID | Location | Total Invertebrate Abundance | Total Taxa Richness | EPT Taxa Richness | EPT Index (% of tot. abund.) | Sensitive EPT Index (tolerance values 0-3)(% of tot. abund.) | Shannon Diversity log e | Total Ephemeroptera Taxa |
|---|---|---|---|---|---|---|---|---|
| **Mainstem Klamath River** | | | | | | | | |
| LRF | Link River Full Flow Reach | 9193.3 | 21 | 6 | 37.07 | 0.00000 | 2.26 | 3 |
| LRB | Link River Bypass | 9961.7 | 24 | 6 | 52.35 | 0.00000 | 1.98 | 3 |
| LEKR | Klamath River below Keno Dam | 11849.9 | 38 | 9 | 58.01 | 0.00000 | 2.35 | 4 |
| KDB | Klamath River to Boyle Res | 21366.7 | 42 | 12 | 31.64 | 0.00000 | 2.54 | 6 |
| BB1 | Boyle bypass | 11719.5 | 43 | 8 | 15.98 | 0.00000 | 2.08 | 3 |
| BB2 | Boyle bypass | 4928 | 52 | 16 | 31.18 | 0.13190 | 2.91 | 7 |
| BB3 | Boyle bypass | 8504 | 47 | 16 | 42.94 | 0.05644 | 2.94 | 7 |
| BF1 | Boyle fullflow | 6560.9 | 48 | 14 | 42.10 | 0.00000 | 3.03 | 6 |
| BF2 | Boyle fullflow | 5632 | 37 | 16 | 70.92 | 0.00000 | 2.31 | 6 |
| BF3 | Boyle fullflow | 6570.7 | 43 | 17 | 65.62 | 0.00000 | 2.44 | 9 |
| BF4 | Boyle fullflow | 3636.2 | 36 | 16 | 52.84 | 0.00000 | 2.77 | 9 |
| BF5 | Boyle fullflow | 4630.2 | 37 | 15 | 66.04 | 0.00000 | 2.65 | 8 |
| BF6 | Boyle fullflow | 4133.8 | 45 | 19 | 75.06 | 0.00000 | 2.46 | 9 |
| CB1 | Copco bypass | 2252.7 | 42 | 12 | 46.56 | 0.00000 | 2.72 | 4 |
| CB2 | Copco bypass | 7992.6 | 50 | 15 | 44.08 | 0.00000 | 2.63 | 6 |
| KR1 | Near hatchery | 8823.6 | 51 | 16 | 44.69 | 0.00000 | 2.66 | 8 |
| KR2 | Near construction site | 3702.9 | 47 | 14 | 28.70 | 0.00000 | 2.84 | 6 |
| KR3 | Klamath Country Estates campground | 4847.5 | 47 | 14 | 19.19 | 0.00000 | 2.44 | 7 |
| KR4 | Along I-5; north of I-5 bridge | 2699.7 | 59 | 20 | 36.54 | 0.00000 | 2.97 | 9 |
| KR5 | At rest stop | 4409.7 | 50 | 18 | 39.02 | 0.00000 | 2.72 | 8 |
| KR6 | By Rte 96 Bridge, south of rest stop | 5318.5 | 46 | 15 | 43.87 | 0.00000 | 2.65 | 7 |
| **Fall Creek** | | | | | | | | |
| FCA1 | Above diversion | 8192.8 | 38 | 19 | 18.97 | 2.18 | 2.04 | 9 |
| FCB1 | Fall Creek Bypass | 3397.4 | 50 | 21 | 25.78 | 2.67 | 2.59 | 7 |
| FCB2 | Small creek, below diversion dam | 6788.0 | 46 | 17 | 44.93 | 25.16 | 2.45 | 8 |
| FCB3 | Small creek, above bypass | 6588.2 | 42 | 21 | 28.20 | 0.58 | 2.18 | 9 |
| FCF1 | Full creek below hatchery | 4436.2 | 59 | 29 | 55.27 | 3.68 | 2.83 | 11 |
| FCF2 | Full creek below hatchery | 3391.0 | 40 | 22 | 41.08 | 3.55 | 2.51 | 7 |
| **Boyle Fullflow Reach, Varial Zones** | | | | | | | | |
| BF1-V | Boyle varial | 55.5 | 6 | 0 | 0.00 | 0.00 | 1.4 | 0 |
| BF2-V | Boyle varial | 175.4 | 10 | 0 | 0.00 | 0.00 | 0.89 | 0 |
| BF3-V | Boyle varial | 43 | 5 | 1 | 4.19 | 0.00 | 1.09 | 1 |
| BF4-V | Boyle varial | 721.2 | 12 | 0 | 0.00 | 0.00 | 0.74 | 0 |
| BF5-V | Boyle varial | 26.8 | 10 | 2 | 13.43 | 6.72 | 1.99 | 0 |
| BF6-V | Boyle varial | 68 | 5 | 0 | 0.00 | 0.00 | 0.93 | 0 |

Table 8A-7 (Sheet 2 of 3). Macroinvertebrate metrics by sampling reach during fall 2002 sampling in the Klamath River mainstem, Boyle full flow (or peaking) reach varial zone, and Fall Creek.

| Sample ID | Location | Total Plecoptera Taxa | Total Tricoptera Taxa | Tolerant Taxa richness | Long-lived taxa (%) | Long-lived taxa richness | % Tolerant Taxa (tolerant taxa/total taxa) | % Intolerant Taxa (interlerant taxa/tot. taxa) | % Hydropsychidae | % Baetidae | % Dominant Taxa |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Mainstem Klamath River** | | | | | | | | | | | |
| LRF | Link River Full Flow Reach | 0 | 3 | 4 | 9.2 | 5 | 11.1 | 0.0 | 16.13 | 15.57 | 20.25 |
| LRB | Link River Bypass | 0 | 3 | 3 | 4.3 | 4 | 20.6 | 0.0 | 41.15 | 0.00 | 41.15 |
| LEKR | Klamath River below Keno Dam | 0 | 5 | 6 | 5.1 | 7 | 16.6 | 0.0 | 32.38 | 15.26 | 32.38 |
| KDB | Klamath River to Boyle Res | 0 | 6 | 4 | 5.7 | 6 | 4.0 | 0.2 | 17.29 | 7.51 | 24.43 |
| BB1 | Boyle bypass | 0 | 5 | 8 | 4.3 | 7 | 4.3 | 0.0 | 6.60 | 0.96 | 49.42 |
| BB2 | Boyle bypass | 3 | 6 | 4 | 18.3 | 10 | 9.4 | 2.6 | 0.88 | 8.34 | 13.70 |
| BB3 | Boyle bypass | 2 | 7 | 4 | 17.1 | 10 | 2.9 | 0.6 | 1.90 | 10.86 | 15.00 |
| BF1 | Boyle fullflow | 2 | 6 | 6 | 9.2 | 9 | 11.6 | 0.0 | 19.37 | 10.34 | 19.37 |
| BF2 | Boyle fullflow | 2 | 8 | 2 | 10.8 | 7 | 1.5 | 0.0 | 37.62 | 9.03 | 37.62 |
| BF3 | Boyle fullflow | 1 | 7 | 4 | 16.6 | 5 | 1.1 | 0.0 | 32.13 | 4.49 | 32.13 |
| BF4 | Boyle fullflow | 2 | 5 | 4 | 26.8 | 6 | 1.8 | 0.0 | 13.67 | 12.64 | 13.67 |
| BF5 | Boyle fullflow | 1 | 6 | 3 | 15.9 | 7 | 46.0 | 0.0 | 24.51 | 10.03 | 24.51 |
| BF6 | Boyle fullflow | 2 | 8 | 7 | 10.3 | 8 | 3.8 | 0.0 | 39.97 | 9.22 | 39.97 |
| CB1 | Copco bypass | 2 | 6 | 7 | 3.8 | 8 | 9.8 | 0.0 | 31.47 | 4.64 | 31.47 |
| CB2 | Copco bypass | 2 | 7 | 8 | 7.9 | 11 | 33.1 | 0.0 | 21.24 | 2.99 | 21.24 |
| KR1 | Near hatchery | 2 | 6 | 6 | 11.7 | 10 | 23.0 | 0.5 | 27.37 | 2.08 | 27.37 |
| KR2 | Near construction site | 2 | 6 | 8 | 18.5 | 7 | 22.3 | 1.5 | 17.56 | 0.96 | 17.56 |
| KR3 | Klamath Country Estates campground | 2 | 5 | 5 | 17 | 11 | 0.5 | 1.6 | 4.30 | 1.55 | 33.52 |
| KR4 | Along I-5; north of I-5 bridge | 2 | 9 | 8 | 30.1 | 12 | 7.8 | 0.1 | 6.64 | 0.25 | 21.92 |
| KR5 | At rest stop | 2 | 8 | 5 | 38.1 | 9 | 1.4 | 2.2 | 15.60 | 0.51 | 29.55 |
| KR6 | By Rte 96 Bridge, south of rest stop | 2 | 6 | 2 | 36.9 | 9 | 0.4 | 2.9 | 14.95 | 0.31 | 29.22 |
| **Fall Creek** | | | | | | | | | | | |
| FCA1 | Above diversion | 4 | 6 | 4 | 80.2 | 13 | 49.5 | 67.4 | 0.49 | 2.40 | 48.60 |
| FCB1 | Fall Creek Bypass | 6 | 8 | 2 | 59.6 | 15 | 35.7 | 54.4 | 0.48 | 2.43 | 33.07 |
| FCB2 | Small creek, below diversion dam | 3 | 6 | 3 | 41.3 | 9 | 35.0 | 36.2 | 5.53 | 1.40 | 31.42 |
| FCB3 | Small creek, above bypass | 5 | 7 | 3 | 66.4 | 16 | 42.5 | 62.7 | 9.68 | 4.37 | 40.13 |
| FCF1 | Full creek below hatchery | 10 | 8 | 4 | 33.9 | 16 | 16.7 | 30.4 | 4.07 | 27.72 | 27.72 |
| FCF2 | Full creek below hatchery | 8 | 7 | 4 | 50.8 | 11 | 28.6 | 45.0 | 2.96 | 19.47 | 27.30 |
| **Boyle Fullflow Reach, Varial Zones** | | | | | | | | | | | |
| BF1-V | Boyle varial | 0 | 0 | 0 | 3.2 | 1 | 0.0 | 0.0 | 0.00 | 0.00 | 41.94 |
| BF2-V | Boyle varial | 0 | 0 | 1 | 11.2 | 2 | 1.0 | 0.0 | 0.00 | 0.00 | 79.59 |
| BF3-V | Boyle varial | 0 | 0 | 0 | 20.8 | 1 | 0.0 | 0.0 | 0.00 | 4.17 | 62.50 |
| BF4-V | Boyle varial | 0 | 0 | 3 | 4.3 | 3 | 2.5 | 0.6 | 0.00 | 0.00 | 85.71 |
| BF5-V | Boyle varial | 1 | 1 | 1 | 0 | 0 | 6.7 | 0.0 | 0.00 | 0.00 | 40.00 |
| BF6-V | Boyle varial | 0 | 0 | 0 | 81.6 | 3 | 0.0 | 0.0 | 0.00 | 0.00 | 71.05 |


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Table 8A-8 (Sheet 1 of 2). Invertebrate taxa encountered as drift during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project. Drift samples taken September 12, 2002. Data not adjusted to standard time interval or flow.

| | Station 1 | | | | | | Station 2 | | | | | | | Station 3 | | Total for taxa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time in** | 9:00 | 12:15 | 1:30 | 2:55 | 4:15 | 7:05 | 8:45 | 10:15 | 11:30 | 1:10 | 2:30 | 3:55 | 6:55 | 6:50 | 8:30 | |
| **Time out** | 10:25 | 12:25 | 1:40 | 3:10 | 4:40 | 8:50 | 10:00 | 11:15 | 11:45 | 1:25 | 2:45 | 4:10 | 8:30 | 8:10 | 9:30 | |
| | | | | | | | | | | | | | | | | |
| **Non insects** | | | | | | | | | | | | | | | | |
| Turbellaria | | | 1 | | | | | | 1 | | 1 | | | | | 3 |
| Oligochaeta | 2 | 2 | 2 | 1 | | | 4 | 1 | 5 | 2 | 3 | 6 | 3 | | 1 | 32 |
| Hirudinea | | 1 | | | | | | | 1 | | | | | | | 2 |
| *Manayunkia speciosa* | | | | | 1 | 3 | | | | | | | | | | 4 |
| *Ferrissia* | 1 | | | | | | | | | | | | | | | 1 |
| *Fluminicola* | | | | | | | | | | | | | 1 | | | 1 |
| Lymnaeidae | | | | | | | | | 1 | | 1 | | | | | 2 |
| *Lanx* | | | | | | | | | | 1 | | | | | | 1 |
| *Physella/Physa* | 2 | | | 2 | | | | | | | | | | | | 4 |
| *Vorticifex* | 1 | 1 | 1 | 1 | 1 | 1 | | | 3 | 1 | | | 1 | | 1 | 12 |
| *Pisidium* | | | | | | | | 1 | | | | | | | | 1 |
| *Crangonyx* | | | | | | | | | | 1 | | 1 | | | | 2 |
| *Caecidotea* | | 5 | 2 | | | | | | 1 | 1 | 1 | | | | 1 | 11 |
| Acarina | 5 | 10 | 2 | | | | | 9 | 3 | 1 | | | 2 | | 4 | 36 |
| **Ephemeroptera** | | | | | | | | | | | | | | | | |
| *Acentrella-larvae* | 1 | | 2 | | | | 3 | 1 | 4 | 4 | | | | 2 | 7 | 24 |
| *Baetis tricaudatus-larvae* | | 1 | 3 | 1 | | | | 3 | 6 | 1 | 1 | | | | 3 | 19 |
| *Ephemerella inermis-larvae* | | | | | | 1 | | | | | | | | | | 1 |
| *Heptagenia/Nixe-larvae* | | | 2 | | | | | | | | | | | 2 | 1 | 5 |
| *Rhithrogena-larvae* | | | | | | | | | | | | | 1 | | | 1 |
| *Tricorythodes minutus-larvae* | 2 | | | | | | | 1 | | | | | | | | 3 |
| **Trichoptera** | | | | | | | | | | | | | | | | |
| *Amiocentrus aspilus-larvae* | 1 | 2 | 1 | | | | 1 | | 2 | | 1 | | 1 | | 1 | 10 |
| *Cheumatopsyche-larvae* | 7 | 3 | 1 | 1 | | 2 | 1 | 4 | 8 | 3 | 3 | 1 | | | 5 | 39 |
| *Hydropsyche-larvae* | 5 | 3 | 3 | | | 1 | 5 | 8 | 11 | 7 | 4 | 1 | 1 | 4 | 9 | 62 |
| *Hydroptila-larvae* | 4 | 2 | 2 | 1 | | | 2 | 1 | 1 | | 1 | | | | 3 | 17 |
| *Hydroptila-pupae* | 16 | 2 | 4 | 1 | | 1 | 1 | 8 | 9 | 6 | 5 | | 1 | | | 54 |
| *Leucotrichia-larvae* | | | | | | | | | | 1 | 1 | | | | 2 | 4 |
| *Leucotrichia-pupae* | | | | | | | 1 | | 1 | | | | | | | 2 |
| *Ceraclea-larvae* | | | | | | | | 1 | | | | | | | | 1 |
| *Polycentropus-larvae* | | | | | | | | | 1 | | | | | | | 1 |

Table 8A-8 (Sheet 2 of 2). Invertebrate taxa encountered as drift during fall 2002 sampling in the Klamath River, California, PacifiCorp Hydroelectric Project. Drift samples taken September 12, 2002. Data not adjusted to standard time interval or flow.

| | Station 1 | | | | | | Station 2 | | | | | | | Station 3 | | Total for taxa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time in** | 9:00 | 12:15 | 1:30 | 2:55 | 4:15 | 7:05 | 8:45 | 10:15 | 11:30 | 1:10 | 2:30 | 3:55 | 6:55 | 6:50 | 8:30 | |
| **Time out** | 10:25 | 12:25 | 1:40 | 3:10 | 4:40 | 8:50 | 10:00 | 11:15 | 11:45 | 1:25 | 2:45 | 4:10 | 8:30 | 8:10 | 9:30 | |
| | | | | | | | | | | | | | | | | |
| **Lepidoptera** | | | | | | | | | | | | | | | | |
| *Petrophila-larvae* | 26 | 1 | 3 | 1 | 1 | 4 | 6 | 10 | 11 | 3 | 3 | 1 | 2 | 2 | 11 | 85 |
| **Coleoptera** | | | | | | | | | | | | | | | | |
| *Optioservus-larvae* | 9 | 3 | 1 | 2 | | | 1 | 4 | 3 | 1 | 1 | | | | 4 | 29 |
| *Zaitzevia-larvae* | 1 | | | | | | | | | 1 | | | | | | 2 |
| **Diptera** | | | | | | | | | | | | | | | | |
| *Wiedemannia-larvae* | | | 1 | | | | | | | | | | | | | 1 |
| *Simulium-larvae* | | 2 | | | | | 1 | | | 1 | | | | 1 | | 5 |
| *Simulium-pupae* | | | | | | | 1 | | | | | | | | | 1 |
| *Antocha-larvae* | 2 | 4 | 2 | | | | 1 | 5 | 7 | 1 | 2 | | | 1 | 3 | 28 |
| *Antocha-pupae* | 1 | 1 | 3 | | | | | 2 | | 3 | | | | | | 10 |
| *Erioptera-larvae* | | | | | | | | | | 1 | | | | | | 1 |
| Chironomidae-larvae | 66 | 55 | 44 | 8 | 1 | 6 | 28 | 58 | 62 | 31 | 26 | 3 | 7 | 18 | 80 | 493 |
| Chironomidae-pupae | 45 | 16 | 9 | 4 | 1 | 3 | 22 | 27 | 24 | 14 | 11 | | | 4 | 38 | 218 |
| **Total aquatic invertebrates** | **197** | **114** | **89** | **23** | **5** | **22** | **78** | **144** | **165** | **85** | **65** | **13** | **20** | **34** | **174** | **1228** |
| | | | | | | | | | | | | | | | | |
| **Terrestrial invertebrates & spent aquatic adults** | | | | | | | | | | | | | | | | |
| Pseudoscorpion | 1 | | | | | | | | | | | | | | | 1 |
| Arachnidea (spiders) | | | | | | | | | | 1 | | | | | | 1 |
| Collembola (springtails) | | | | | | | | | | 1 | | | | | | 1 |
| Baetidae-adults (mayfly) | 11 | 2 | 2 | 1 | | 1 | 4 | 1 | 3 | | | | | 2 | 13 | 40 |
| Heptageniidae-adults (mayfly) | | | | | | | | | | | | | | | 2 | 2 |
| Tricorythodes minutus-adults (mayfly) | 1 | | | | | | | 1 | | | | | | | | 2 |
| Aphidae-adults (aphids) | 1 | | 2 | | | | | | | | | | | | | 3 |
| Staphylinidae-adults (beetles) | | | 1 | | | | | | | | | | | | | 1 |
| Formicidae-adults (ants) | 8 | | 2 | | | | 2 | 8 | 5 | 6 | | | | | 3 | 34 |
| Hymenoptera-adults (parasitic wasps) | | | 1 | | | | | 2 | 1 | 1 | | | | | | 5 |
| Brachycera-adults (true flies) | | | | | | | | | 2 | | | | | | 3 | 5 |
| Tipulidae-adults (crane flies) | 3 | | | | | | | | 2 | 1 | | | 1 | 1 | 3 | 11 |
| **Total terrestrial and spent aquatics** | **25** | **2** | **8** | **1** | **0** | **1** | **6** | **12** | **13** | **10** | **0** | **0** | **1** | **3** | **24** | **106** |
| | | | | | | | | | | | | | | | | |
| **Grand Total** | **222** | **116** | **97** | **24** | **5** | **23** | **84** | **156** | **178** | **95** | **65** | **13** | **21** | **37** | **198** | **1334** |
| | | | | | | | | | | | | | | | | |
| **Settled volume of detritus and sloughed alogae in sample (ml)** | 175 | 125 | 150 | 25 | 5 | 5 | 100 | 250 | 150 | 150 | 100 | 5 | 5 | 50 | 125 | |



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Table 8A-9 (Sheet 1 of 1). Benthic freshwater invertebrate taxa percent contribution in Klamath River reservoirs during fall 2002 sampling, PacifiCorp Hydroelectric Project.

| Metric | Lake Ewauna EW001 dredge in shallow littoral | Lake Ewauna EW002 dredge in deep littoral | Keno Reservoir KN004 dredge | Keno Reservoir KN003 dip-net | J.C. Boyle Reservoir JCB005 dredge | J.C. Boyle Reservoir JCB006 dip-net | Copco Reservoir CR008 dredge | Copco Reservoir CR007 dip-net | Irongate Reservoir IG009 dredge | Irongate Reservoir IG010 dip-net |
|---|---|---|---|---|---|---|---|---|---|---|
| **Date (2002)** | 9-30 | 9-30 | 10-1 | 10-1 | 10-1 | 10-1 | 10-2 | 10-2 | 10-2 | 10-2 |
| **Area sampled (square meters)** | 0.12 | 0.12 | 0.12 | 7.44 | 0.12 | 7.71 | 0.12 | 8.09 | 0.12 | 7.06 |
| **Community measures** | | | | | | | | | | |
| Total abundance (m2) | 21320 | 7791 | 722 | 648 | 1170 | 900 | 783 | 298 | 396 | 461 |
| Total taxa richness | 8 | 8 | 11 | 21 | 17 | 17 | 19 | 28 | 9 | 26 |
| Community tolerance index (0-10) | 5.8 | 5.3 | 6.1 | 5.9 | 7.1 | 7.8 | 7.4 | 7.4 | 6.9 | 7.0 |
| **Tolerant taxa** | | | | | | | | | | |
| % Tolerant taxa | 22.5 | 7.6 | 27.4 | 26.5 | 53.0 | 89.3 | 67.1 | 76.3 | 52.2 | 60.5 |
| % Hydropsychidae | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| % Baetidae | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.6 |
| % Chironomidae | 8.7 | 1.3 | 2.4 | 8.4 | 3.7 | 3.0 | 4.4 | 3.0 | 4.4 | 15.8 |
| **Intolerant taxa** | | | | | | | | | | |
| % Intolerant taxa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EPT taxa richness | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 4 |
| Ephemeroptera taxa richness | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 1 |
| Plecoptera taxa richness | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Trichoptera taxa richness | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 |
| % EPT taxa | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 0.3 | 0.0 | 2.5 | 0.0 | 2.4 |
| Sensitive EPT taxa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Community dominance measures** | | | | | | | | | | |
| % Dominant taxa | 76.8 | 90.7 | 48.8 | 61.1 | 39.0 | 69.0 | 23.1 | 48.6 | 21.7 | 39.5 |
| Shannon diversity (loge) | 0.84 | 0.46 | 1.60 | 1.58 | 1.91 | 1.29 | 2.45 | 1.88 | 2.04 | 2.20 |
| **Feeding groups** | | | | | | | | | | |
| % Collector-gatherers | 98.3 | 95.4 | 72.6 | 89.1 | 19.9 | 17.3 | 24.2 | 68.0 | 43.5 | 72.3 |
| % Collector-filterers | 0.0 | 0.0 | 0.0 | 0.6 | 0.7 | 1.3 | 2.2 | 2.0 | 0.0 | 2.4 |
| % Scrapers | 0.0 | 0.3 | 1.2 | 4.4 | 31.6 | 74.0 | 45.1 | 22.4 | 30.4 | 17.3 |
| % Predators | 1.0 | 0.7 | 4.8 | 4.7 | 43.4 | 6.7 | 19.8 | 1.3 | 8.7 | 0.6 |
| % Parasite | 0.7 | 3.6 | 21.4 | 0.9 | 4.4 | 0.3 | 8.8 | 5.5 | 17.4 | 3.7 |
| % Shredders | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |