**Supplemental Table 1**

| **Species** | **Family** | **Habitat** | **Permanence** | **Salinitya**  **(mg L-1)** | **Chemistrya**  **(meq)** | **Paleo/Biogeographyb** |
| --- | --- | --- | --- | --- | --- | --- |
| *Valvata* sp. (O.F. Müller, 1774) | Valvatidae | Streams, lakes, ponds (lentic or lotic) | Permanent | 70–5,000 | 0.50–5.0  (Freshwater to Ca-rich) | Across North America |
| *Valvata humeralis* (Say, 1829) |  | Streams, lakes, ponds (lentic or lotic) | Permanent | 200–5,000 | 1.0–5.0  (Freshwater to Ca-rich) | Western North America: From British Columbia to Mexico |
| *Fossaria parva* (Lea, 1841) |  | Streams, lakes, ponds (lentic or lotic) | permanent or ephemeral | 200–4,000 | -2.0–1.0  (Freshwater to Ca-rich or HCO3-rich) | East of the Rocky Mountains from Canada to Mexico |
| *Stagnicola caperata* (Say, 1829) | Lymnaeidae | Wetlands, vernal pools, weedy ditches, shallow margins of rivers and lakes (lentic or lotic) | Permanent or ephemeral | ~2,000 | ~1.5  (Freshwater to Ca-rich) | Across North America from New York to California, north to Alberta, and south through Colorado (Clarke, 1981) |
| *Lymnaea stagnalis jugularis* (Say, 1817) |  | Streams, lakes, ponds (lentic or lotic) | Permanent or ephemeral | ~2,000 | ~1.5  (Freshwater to Ca-rich) | Across North America |
| *Physella virgata* (Say, 1817) | Physidae | Streams, lakes, ponds (lentic or lotic) | Permanent or ephemeral | 10-5,000 | ~1.5  (Freshwater to Ca-rich) | Across North America |
| *Gyraulus parvus* (Say, 1817) |  | Streams, lakes, ponds (lentic or lotic) | Permanent or ephemeral | 20-4,000 | -2.0-5.0  (Freshwater to Ca-rich or HCO3-rich) | Across North America |
| *Armiger crista* (Linnaeus, 1758) |  | Sluggish streams, ponds, clear, weedy conditions (lentic) | Permanent | NA | NA | Worldwide. Holarctic from Canada to northern North America. Present in Europe, Asia, and North Africa |
| *Promenetus exacuous exacuous* (Say, 1821) |  | Streams, lakes, ponds (lentic or lotic) | Permanent or ephemeral | NA | NA | East of the Rocky Mountains below the tree line. Also present in Alaska |
| *Helisoma (Planorbella) trivolvis* (Say, 1817) | Planorbidae | Weedy species in swamps, ponds, and lakes (lentic) | Permanent (eutrophic environments) | ~2,000 | ~1.5  (Freshwater to Ca-rich) | Across North America |
| *Planorbula campestris* (Dawson, 1875) |  | Weedy species in swamps, ponds, and lakes (lentic) | Permanent or ephemeral | NA | NA | Western North America along the Rocky Mountains and isolated patches in Vancouver Island and southwestern Yukon Territory (Clarke, 1981) |
| *Planorbella* sp. (Haldeman, 1843) |  | Streams, lakes, ponds (lentic or lotic) | Permanent or ephemeral | NA | NA | Across North America |
| *Ferrissia rivularis* (Say, 1817) | Ancylidae | Rocky and weedy substrates in streams, lakes, and ponds (lotic). Cool, well-oxygenated waters | Permanent | NA | NA | Across North America |
| *Anodonta oregonensis* Lea, 1838 | Unionidae | Streams, lakes, ponds (lentic). Associated with pine and spruce (cold-wet conditions) | Permanent | NA | NA | Western North America from Alaska to northern California; eastward to Utah |
| *Pisidium (Cyclocalyx)casertanum* (Poli, 1795) | Sphaeriidae | Streams, lakes, ponds (lentic or lotic) | Permanent | 1,000–3,000 mg L-1 | 0.5–5.0 meq  (Freshwater to Ca-rich or HCO3-rich) | Across North America |
| *Pisidium (Cyclocalyx) compressum* Prime, 1852 |  | Streams, lakes, ponds (lentic or lotic) | Permanent | 1,000–3,000 mg L-1 | 0.5–5.0 meq  (Freshwater to Ca-rich or HCO3-rich) | Across North America |
| *\*Oxyloma haydeni kanabensis* Pilsbry 1948 | Succineidae | Riparian, moist soils, springs, seeps, shallow standing water | Terrestrial | NA | NA | Western North America: Colorado Plateau (Colorado, Utah, Arizona). Current disjunct distribution due to post-Pleistocene habitat isolation. |
| NA = Not Available  aSharpe (2002)  bBequaert and Miller (1973); Clarke (1981); Dillon (2000); Prescott and Curteanu (2004)  \*Stevens and Protiva (1997); NatureServe Explorer (<http://explorer.natureserve.org/servlet/NatureServe?searchName=Oxyloma+kanabense>) | | | | | | |

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