

Light, Nutrients and Macroinvertebrates

How Bugs Told the Story of Harvest on the Trask

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Our 10-year study of stream invertebrates before and after harvest in the Trask River headwaters documented tight linkages between headwater biota and adjacent riparian zones. We compared harvested sites individually to reference sites in order to understand trends and year-to-year and site variations. Stream invertebrates at non-buffered sites were significantly more abundant and consisted of different organisms than at sites with riparian buffers. The proportions of midges (chironomids) increased, and representation of mayflies, stoneflies and caddisflies (EPT's) that are often sensitive to disturbances, changed noticeably at non-buffered sites. Also, adult insects (flies and EPT's) emerged earlier and in greater abundance after harvest at non-buffered sites in the first two years after harvest, possibly related to higher temperatures. At a non-buffered site where leave-trees remained near the stream, a dramatic increase in shredding aquatic insects was observed. With the multi-site, repeated sampling design of our study, aquatic invertebrates demonstrated they can be sensitive indicators to a range of riparian buffers associated with the clear-cut harvesting.