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Predominance of *Stenopsyche marmorata* Navas larvae immediately downstream of Iwaonai Dam in the Teshio River, Hokkaido, Japan

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Abstract

We examined the density of aquatic invertebrates downstream from Iwaonai Dam in the upper reach of the Teshio River, Hokkaido. Our aim was to investigate the effects of frequent flow fluctuations caused by hydroelectric power generation, where intermittent water releases have resulted in droughts downstream. Although the densities of insects belonging to Ephemeroptera and Plecoptera were low just downstream of the dam compared to those upstream, they gradually increased as we descended the river. In contrast, *Stenopsyche marmorata* Navas (Trichoptera) showed both the highest density and highest percentage of total aquatic invertebrates just below the dam, though both levels decreased downstream. While high densities of first- and second-instar larvae were observed upstream of the dam and also far downstream, fifth-instar larvae dominated by over ninety percent just below the dam. A similar deviation in age structures was observed in the downstream reaches of two other dams in Hokkaido. *S. marmorata* may have developed a relatively high resistance to dryness compared to other aquatic invertebrates, and that resistance seems to be higher in fifth-instar larvae. Decreases in the density of *S. marmorata* in the downstream reaches may be attributed to changes in the amount of pore space per unit area of the riverbed.

Key Words: [aquatic invertebrates](#), [dam](#), [reservoir](#), [Stenopsyche marmorata Navas](#), [age structure](#)

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