

**EFFECTS OF WILDFIRE IN AN AQUATIC HABITAT OF THE WIGWAM
RIVER 70 YERS LATER—INSIGHTS INTO TEMPORAL DYNAMICS IN
WATERSHED PROCESSES, CHANNEL
CONDITION AND RIPARIAN FUNCTION ^{AFS}**

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The Wigwam River situated in Southeastern B.C.—Northwestern Montana is identified as a key bull trout (*Salvelinus confluentus*) spawning habitat in the Lake Koocanusa basin and has been the focus of international attention for the past decade following declining bull trout populations during the late 1900s. A reconnaissance level hydro-geomorphological assessment of the Wigwam River has provided a unique insight into the long-term changes in watershed processes following an extensive wildfire that removed over 70 percent of the forest in the 40000-ha drainage during the early 1930s. The most significant changes in watershed processes following the fire included large sustained increases in sediment delivery throughout the drainage and extensive deforestation of riparian areas along much of the main stem channel and many of the tributary channels. These impacts have resulted in long-term changes in the sediment budget, riparian function and channel condition that have been both beneficial and detrimental to aquatic habitat. The Wigwam River study provides insights into the long-term effects of a large wildfire event on aquatic habitat and the evolution of watershed processes and channel condition in the decades following a severe disturbance event. Recognizing these long-term changes has provided an understanding of natural disturbance regimes and temporal variability of watershed and channel processes. This information has assisted forest managers in identifying key management concerns to protect aquatic values in the Wigwam River.