FIRE REGIMES IN THE INTERIOR COLUMBIA RIVER BASIN: PAST AND PRESENT

Penelope Morgan, Stephen C. Bunting, Anne E. Black, and Troy Merrill
College of Forestry, Wildlife and Range Sciences, University of Idaho, Moscow, ID 83844-1133

Steven Barrett
Systems for Environmental Management, Kalispell, MT 59901

R. Gerald Wright
National Biological Survey, Moscow, ID 83843

ABSTRACT

We mapped and compared historical (circa 1900) and current (circa 1990) fire regimes for the Interior Columbia River Basin. Fire regime classes are based upon fire frequency (the mean number of years between successive fires) and severity (the fires' effects on the dominant overstory species). Fire regimes were assigned to all forest, woodland, shrubland, and grassland vegetation types within the Interior Columbia River Basin. Fire regime classes were assigned to dominant vegetation types for each of four different biophysical settings: cold and dry, cold and wet, warm and dry, and warm and wet. One set of decision rules was developed for historical vegetation. A separate set of decision rules was developed for current fire regimes to reflect the influence of fire suppression. Decision rules were developed based upon published literature, a fire history data base, and expert opinion. The coarse-scale maps were produced in ARC/INFO format. The maps were judged reasonably accurate when compared to fire history data and when they were evaluated by local experts, but accuracy varied geographically.

Current fires occur less frequently and are more severe than historical fires. Stand-replacing fires dominate the landscape, both historically (49% of all pixels) and currently (61% of all pixels). Mixed fire regimes were historically (14% of all pixels) and are currently (20% of all pixels) extensive. Nonlethal fires are currently much less common than they were historically (31% versus 13% of all pixels). For all severity classes combined, very frequent fires (those occurring every 0–25 years) were more common historically than currently (23% and 13% of all pixels, respectively). Frequent fires (those occurring every 26–75 years) are also less common now than historically (34% and 11% of all pixels, respectively). Fire frequency has not changed where fires occurred very frequently or rarely, but this occurs on less than 10% of the pixels in the entire Interior Columbia River Basin.

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