FIRE MANAGEMENT

Whitebark Pine

Whitebark pine is declining over much of its range, especially in southern British Columbia and Alberta, and the northern United States. The existence of whitebark pine is threatened by the combined affects of blister rust, fire suppression and mountain pine beetle epidemics.

Whitebark pine is found in the high mountains of western North America. It occurs in seven of Canada's national parks: Mount Revelstoke, Glacier, Jasper, Banff, Kootenay, Yoho and Waterton Lakes.

Whitebark pine typically grows on rocky and wind-swept areas, and also occurs in mixed forests. Slow growing, a whitebark pine may not produce cones until it reaches 50 – 80 years old. The whitebark pine plays a vital role in subalpine ecosystems as it stabilizes steep slopes, influence rates of snow melt, and provides food, cover and shelter for wildlife. Whitebark pine is a keystone species and its loss would radically change the Rocky Mountain sub-alpine ecosystem, as we know it today.

Importance to Wildlife

Whitebark pine seeds are large (about the size of a pea) and high in protein. Several wildlife species rely on the seeds as favoured food, notably the Clark's nutcracker, but also the red squirrel, grizzly and black bear.

Whitebark pine and the Clark's nutcracker have evolved together, depending on the other for survival in the harsh climate of the sub-alpine.

Whitebark pine cones do not open on their own for seed dispersal. Instead, Clark's nutcrackers use their long, pointed beaks to break apart the large cones and remove the seeds. The birds then cache the seeds to ensure a reliable source of food through the winter.

While squirrels cache whole cones in middens, Clark's nutcrackers select areas likely to remain snow free. Coincidentally, these open, sunny areas favour whitebark pine germination and growth.

A single bird is capable of caching one thousand seeds each year. Caching pine seeds just below the soil's surface, Clark's nutcrackers use adjacent rock and wood debris to create memory maps that assist them in relocating the seeds when needed. Roughly half the seeds are overlooked and many of these germinate and grow into pine seedlings.