

Locating and estimating the areal extent of wildfires in Alaskan boreal forests using multiple-season AVHRR NDVI composite data.

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Locating and estimating the areal extent of wildfires in alaskan boreal forests using multiple-season AVHRR NDVI composite data

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Abstract

Techniques to locate and estimate the areas of fires in the boreal forests of Alaska using satellite imagery from the Advanced Very High Resolution Radiometer (AVHRR) are described. The basis for these techniques is the normalized difference vegetation index (NDVI) derived from the AVHRR data, which is reduced by the damage to the plant canopy during fires. AVHRR data collected during three years (1990, 1991, and 1992) were analyzed in order to determine the locations and estimate the areal extent of fires that occurred in 1990 and 1991 (when 2 million ha of land in Alaska were affected by fire). Fires in Alaska tend to take place in large events, with > 96% of the total area burned occurring in fires greater than 20,000 ha in size. The analysis techniques developed in this paper resulted in detection of > 83% of all fires > 20,000 ha in size over the two years.

paper resulted in detection of > 99% of all fires > 20,000 ha in size over the two years, and detected > 78% of the area burned in the state during this time period.



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