USE OF A STANDARD DEVIATION BASED
TEXTURE CHANNEL FOR LANDSAT
CLASSIFICATION OF FOREST STRATA

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A classification procedure for identifying volume homogeneous timber strata
from Landsat imagery is under examination
in the rugged forest lands of northern
California's Klamath National Forest. A
unique feature of this procedure is the
addition of a texture channel created
from Landsat Band 5 by calculating the
standard deviation of density values
within a 3-by-3 pixel moving window. Once
calculated, the standard deviation is
scaled, associated with the center location
of the 3-by-3 window, and output in spati-
ally registered image format. This syn-
thesized texture channel exhibits low
values in areas of continuous canopy cover
and higher values in areas of discontinuous
canopy. Highest values occur at abrupt
vegetation boundaries.

When combined with the conventional
four Landsat bands in an unsupervised
classification, the texture channel pro-
motes discrimination of numerous site-
specific classes. These classes are
merged as necessary to produce a strata
map appropriate for locating the random
samples necessary for volume inventory.
Use of this Landsat-based procedure should
be very effective in reducing the high cost
of compiling strata maps from conventional
manual procedures involving airphoto inter-
pretation.

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