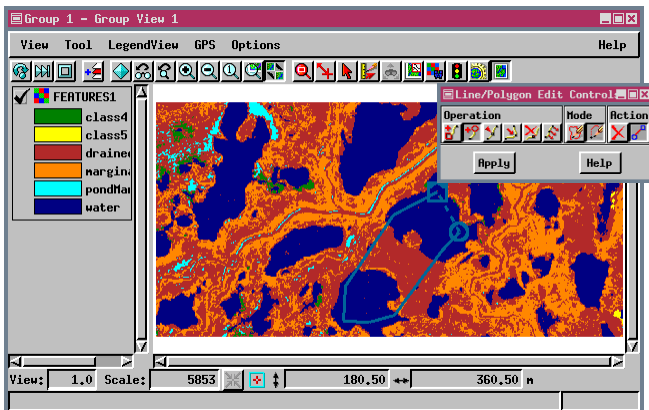


Sample SML Tool Script

Running FRAGSTATS with TNTmips



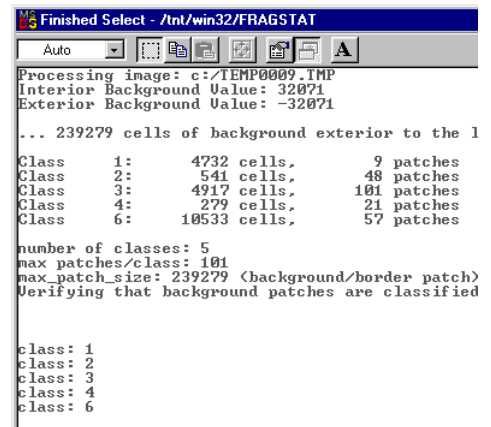
The patch, which is the basic unit of landscape ecology, is a piece of the landscape that is considered homogeneous at the scale of a particular study. A landscape, or area of interest, is a mosaic of patches of different types. Patch type is equivalent to a class in TNTmips terminology (patches of a single type in the landscape belong to the same class).

In order to study landscape function and change, you need to be able to quantify landscape structure. The FRAGSTATS program was developed for this purpose by Kevin McGarigal and Barbara Marks. FRAGSTATS calculates a number of statistics for each patch, for all the patches of a single class, and for the

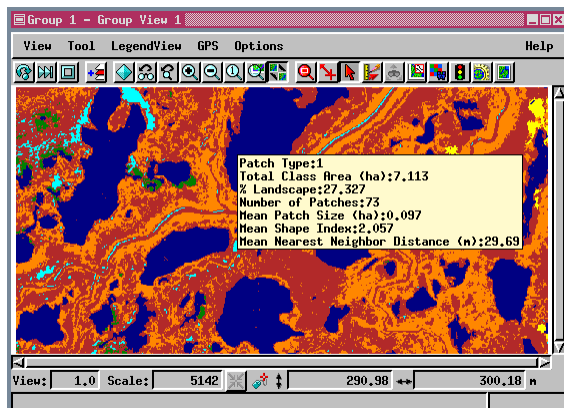
landscape as a whole. FRAGSTATS is concerned with both landscape composition and landscape configuration. Landscape composition addresses the variety and abundance of patches within the landscape, while landscape configuration is concerned with physical distribution and spatial character of patches.

FRAGSTATS runs under DOS and outputs four files, each with the name you provide and a different extension (*.cla, *.ful, *.lnd, *.pat). Because it runs under DOS, output file names are restricted to eight characters. Three of these files are designed for direct database import from text while the fourth file (*.ful) combines information on individual patches, patch classes, and the landscape as a whole into a single, more humanly readable report.

Two separate scripts for running FRAGSTATS are available with this release of the TNT products. One is a tool script that lets you draw a region to define the area of the underlying raster to use for calculation of statistics. The other script is run through the SML process and requires the landscape raster and a mask raster to define your area of interest within the landscape. The FRAGSTATS tool script demonstrates that a tool script can run an external program using objects from TNTmips Project Files and that FRAGSTATS can be used with an interactively designed mask (a region).



Once you have drawn and applied your region (or selected both the landscape and mask raster), you are asked to supply an edge distance in meters. The edge distance is the setback distance (in meters) within each patch for the purpose of calculating core area metrics. Next, a DOS shell opens and reports progress while FRAGSTATS is running. When FRAGSTATS is done, the DOS shell will say *finished* in the title bar. You need to close the DOS shell in order to continue working in TNTmips' Spatial Data Display process. The amount of time it takes FRAGSTATS to run is determined by the number of cells selected for processing and the number of patches within the selected area.



Summary statistics for each patch type were imported to a database related to the landscape raster by cell value. A multiline DataTip that incorporates specific statistics of interest (from the 40 in the *.cla file) was then constructed using a string expression field.

The information shown in the multiline DataTip (left) was selected from the table that resulted from import of the .cla file produced by FRAGSTATS. The imported table can be related to the internal table using cell value (Internal.Value), which corresponds to the patch type in the FRAGSTATS output.

