# Applying MapCalc Map Analysis Software

Characterizing Narrowness: *A wildlife biologist needs a map that identifies the relatively narrow portions of each vegetation parcel in a project area. This information will be analyzed with radio-collar data to determine patterns of animal movement with respect to land cover narrowness.*

<*click here*> *for a printer friendly version (.pdf)*

Processing Flow.

…Identifies the combination of Covertype and Narrowness for each map location.
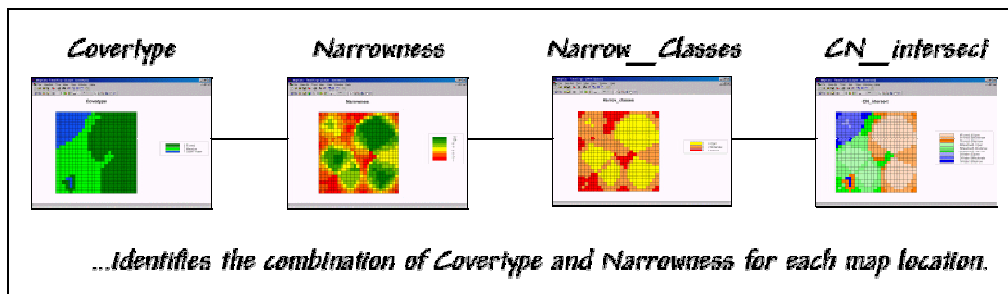
Base Maps. The *Base Maps* needed include:
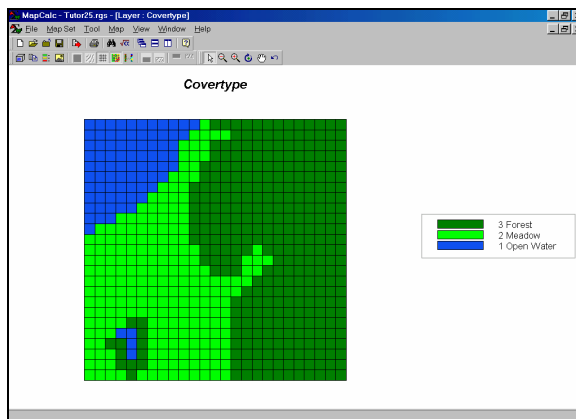
Covertype Map. Notice the narrow appendages of meadow and the small forest parcel around the pond.
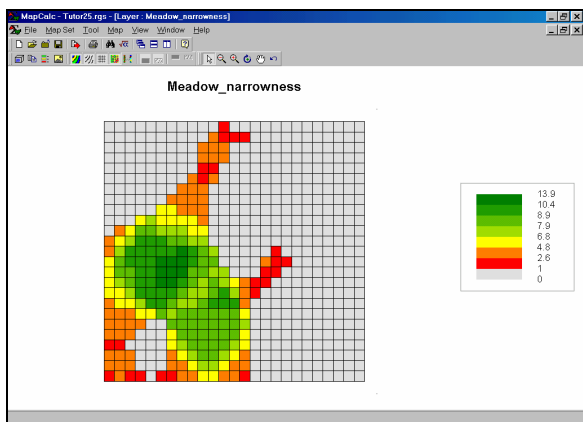
Step 1. The MapCalc operation…

 SPAN Covertype WITHIN 15 NULLVALUE 0 FOR
Narrowness

…creates a map of narrowness for all locations within the project area. Narrowness is defined as "the shortest cord connecting opposing edges." In this case the edges are defined as cover type transitions. The concept of *narrowness* shouldn't be confused with that of *core area*— narrowness identifies the distance between edges; core area identifies distance to the nearest edge.
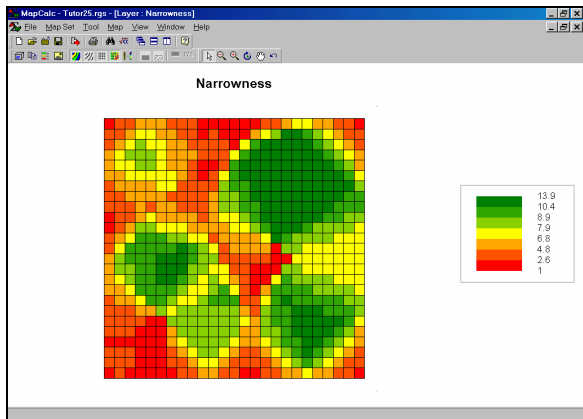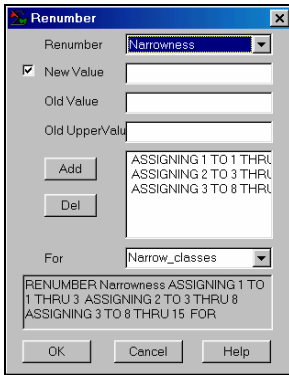
 Narrowness Map. The red areas are very narrow while the green areas are very open. Note the narrow artifact for the corners of the map due to the artificial border edge. All project areas should contain an extent larger than the actual area.

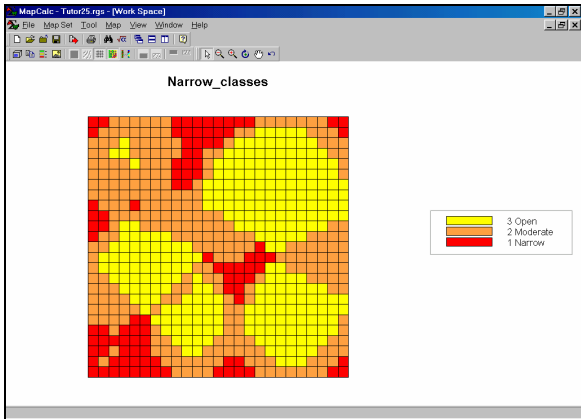 ***Meadow_narrowness Map.*** This map shows the narrowness values for just the meadow parcel.
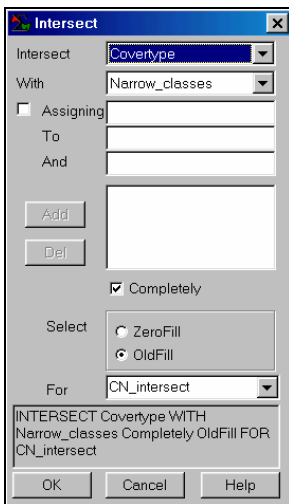
Step 2. The MapCalc operation…

 RENUMBER Narrowness ASSIGNING 1 TO 1 THRU 3 ASSIGNING 2 TO 3 THRU 8 ASSIGNING 3 TO 8 THRU 15 FOR Narrow_classes

…creates a three level classification of narrowness— Narrow (1= 1 to 3 cells), Moderate (2= 3 to 8 cells) and Open (3= 8 to 15).
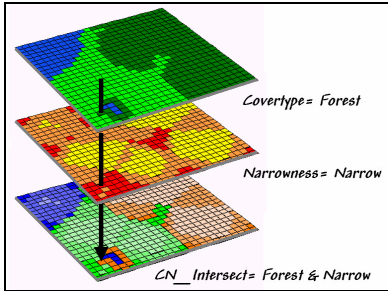
 Narrow_classes Map.
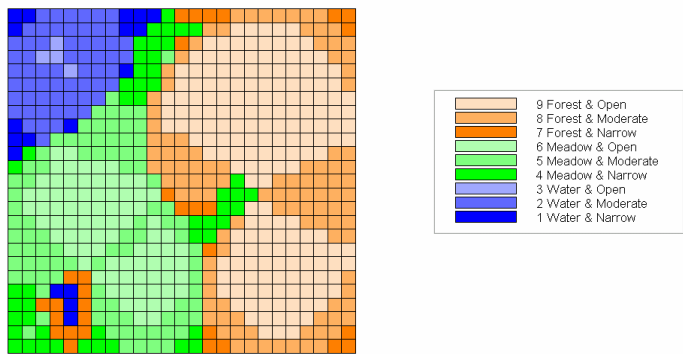
<u>Step 3</u>. The MapCalc operation…

 INTERSECT Covertype WITH Narrow_classes Completely OldFill FOR CN_intersect

 …creates a map that identifies the combination of Covertype and Narrowness for each map location.

CN_intersect Map. The blue tones identify the narrowness classes for Water progressing from dark blue for narrow areas through light blue for open areas; greens identify Meadow narrowness; and tans identify Forest narrowness.

Summary. By using the Span (narrowness) and Intersect (coincidence) operations in MapCalc a wildlife biologist can generate a map that identifies the cover type and relative narrowness for each grid cell in a project area. The radio-collar data will be superimposed on this map to determine the amount of time (by season and time of day) the animal spends in each of the cover/narrowness classes.