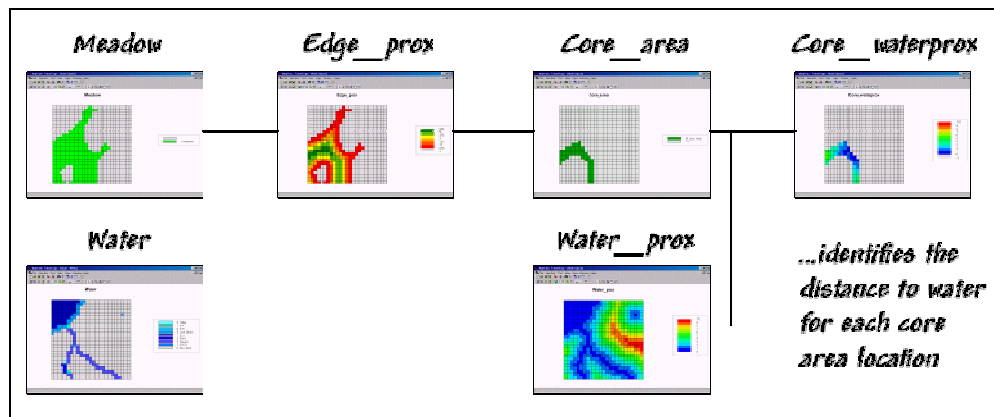


# Applying MapCalc Map Analysis Software

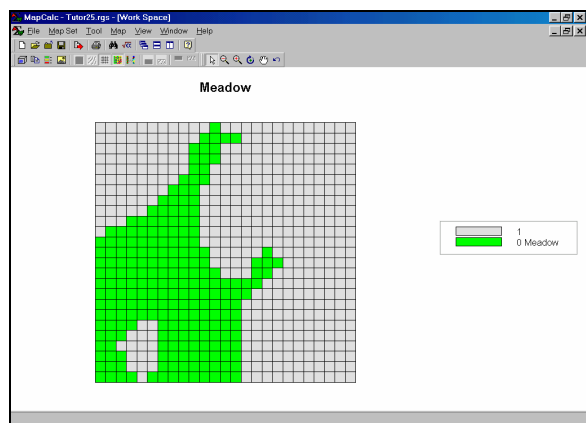
**Delineating and Summarizing Core Area:** *A wildlife biologist needs a map that identifies core area for meadow parcels in a research area and the distance to water for each location in the core area. This information will be analyzed with nesting information about various ground-nesting birds.*

<[click here](#)> for a printer friendly version (.pdf)

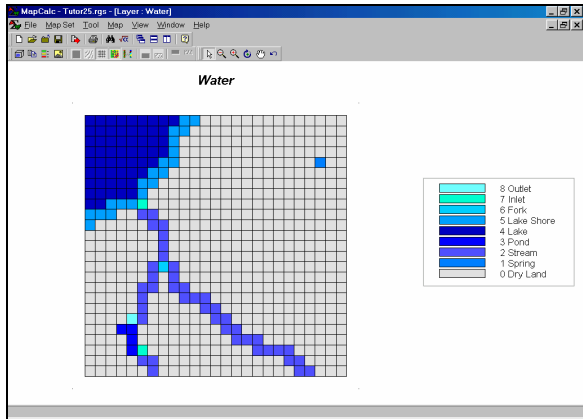
## **Processing Flow.**



**Base Maps.** The Base Maps needed include:

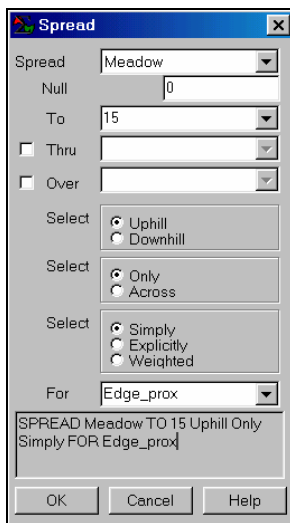


**Meadow Map.** This map was created by *Renumbering* the Covertypes map to isolate the meadow area. Notice that the value 0 was assigned to the meadow area while 1 was assigned to the non-meadow areas. This value assignment will be useful in a subsequent processing step (Spread).



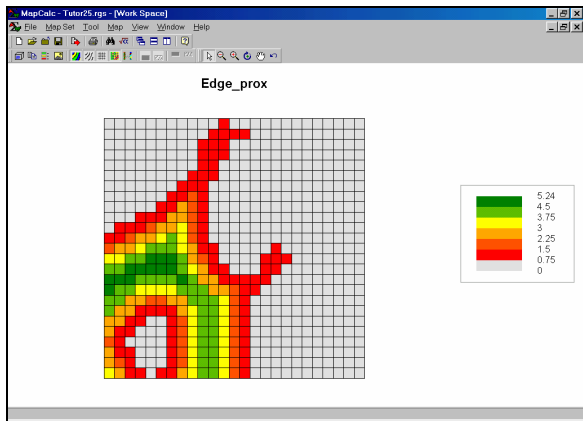
**Water Map.** Potable water is available within any of the locations shown in blue tones.

**Step 1.** The MapCalc operation...



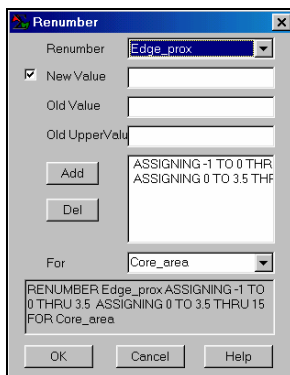
***SPREAD Meadow TO 15 FOR Edge\_prox***

...creates a map of the proximity to the edge for all of the meadow cells. The Spread operation calculates proximity for any area containing 0 on the Spread <mapName> map—the meadow area in this case.



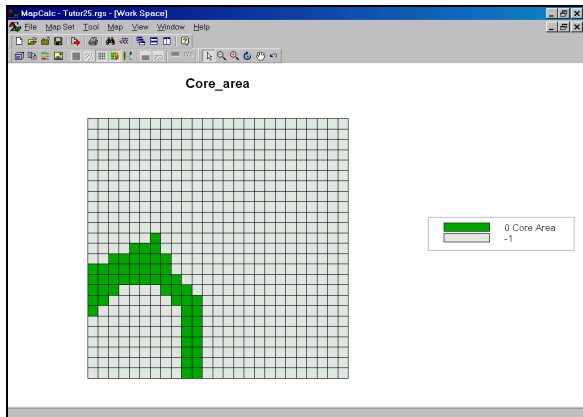
**Edge\_prox Map.** The **red** tones indicate locations near the edge of the meadow; **green** tones indicate locations farther away.

**Step 2.** The MapCalc operation...



**RENUMBER Edge\_prox ASSIGNING -1 TO 0 THRU 3.5  
ASSIGNING 0 TO 3.5 THRU 15 FOR Core\_area**

...creates a map that isolates the core area as locations more than 3.5 cells away from the meadow's edge (3.5 cells \* 100m/cell = 350 meters away).



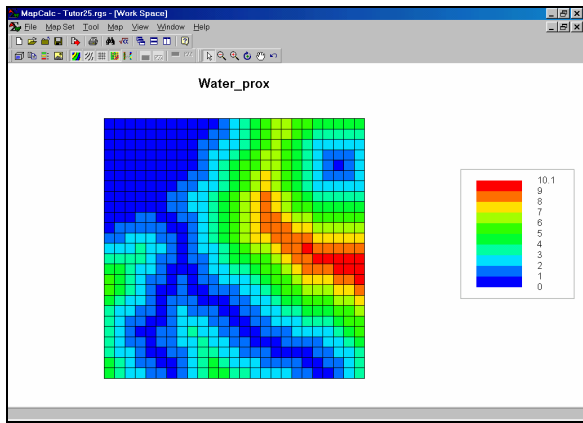
**Core\_area Map.** Notice that the value 0 was assigned to the core area while -1 was assigned to the non-core areas. This value assignment will be useful in a subsequent processing step (Cover).

**Step 3.** The MapCalc operation...

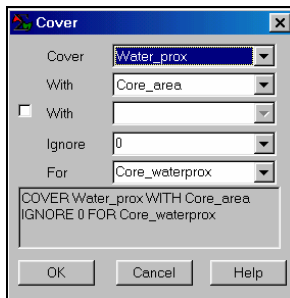


***SPREAD Water TO 15 FOR Water\_prox.***

...creates a map that identifies the distance from all locations to the nearest source of flowing water.

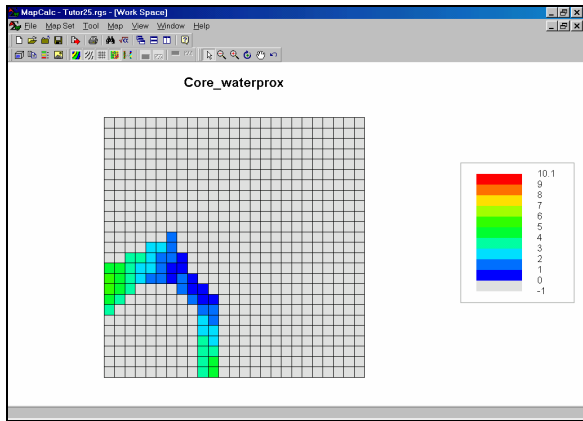


**Step 4.** The MapCalc operation...



***COVER Water\_prox WITH Core\_area IGNORE 0 FOR Core\_waterprox.***

...creates a map of the proximity to water for just the core area.



*Core\_waterprox Map.*

**Summary.** The *Spread* operation is used to calculate proximity. In this case proximity to meadow edge was calculated then that map was used to identify Core Areas (distant from edge). *Spread* was used again to identify proximity to water then this information was isolated for just the Core Area. The information will be used in research of ground-nesting birds' preferences.