

Spatial Analysis

GIS Assessments from the Greenhorn
Mountain Survey

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Arcmap Desktop 10 was used to make an analysis of the forest surveys that were completed during the 2010 summer internship.

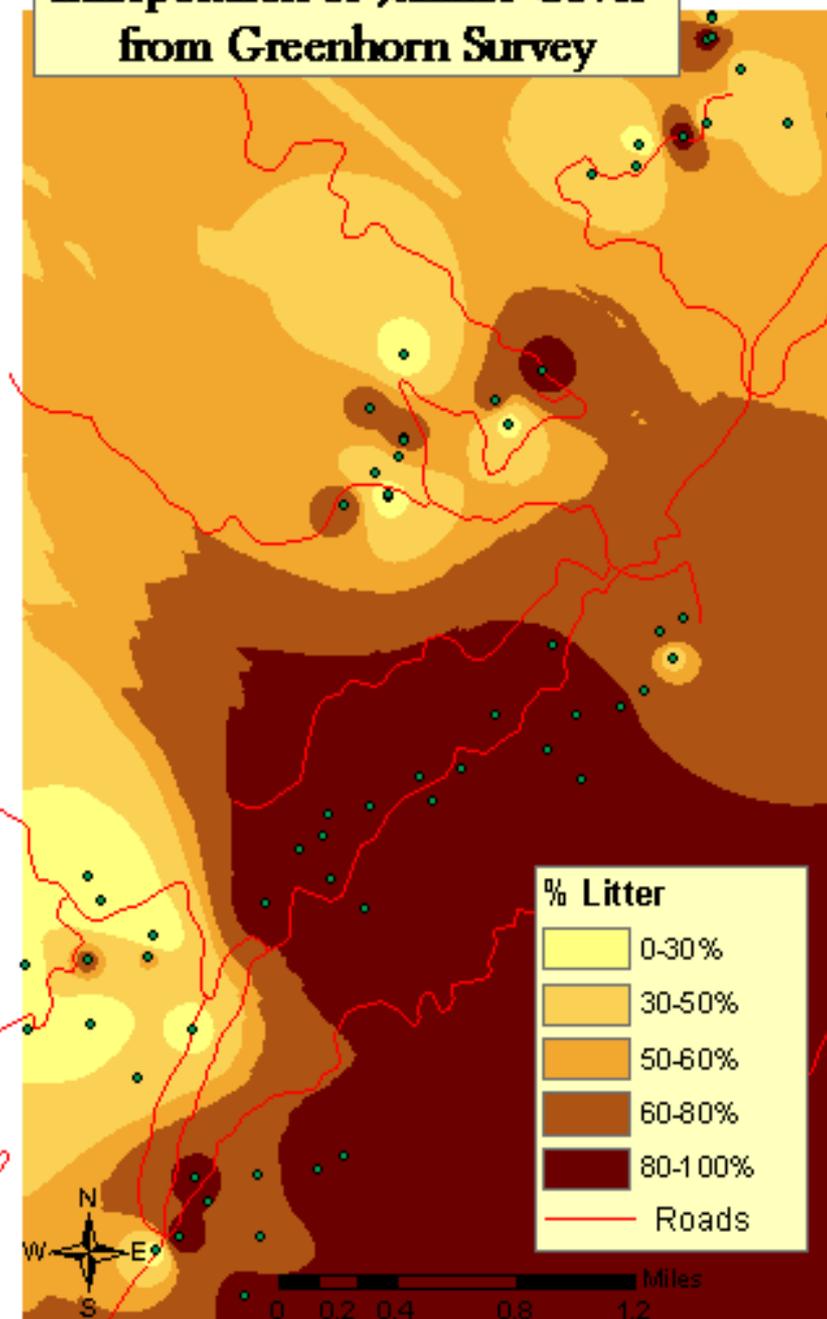
Two primary approaches were used.

- One was to show correlations in the forest characteristics.
- Another was to estimate potential Fisher range based on habitat criteria.

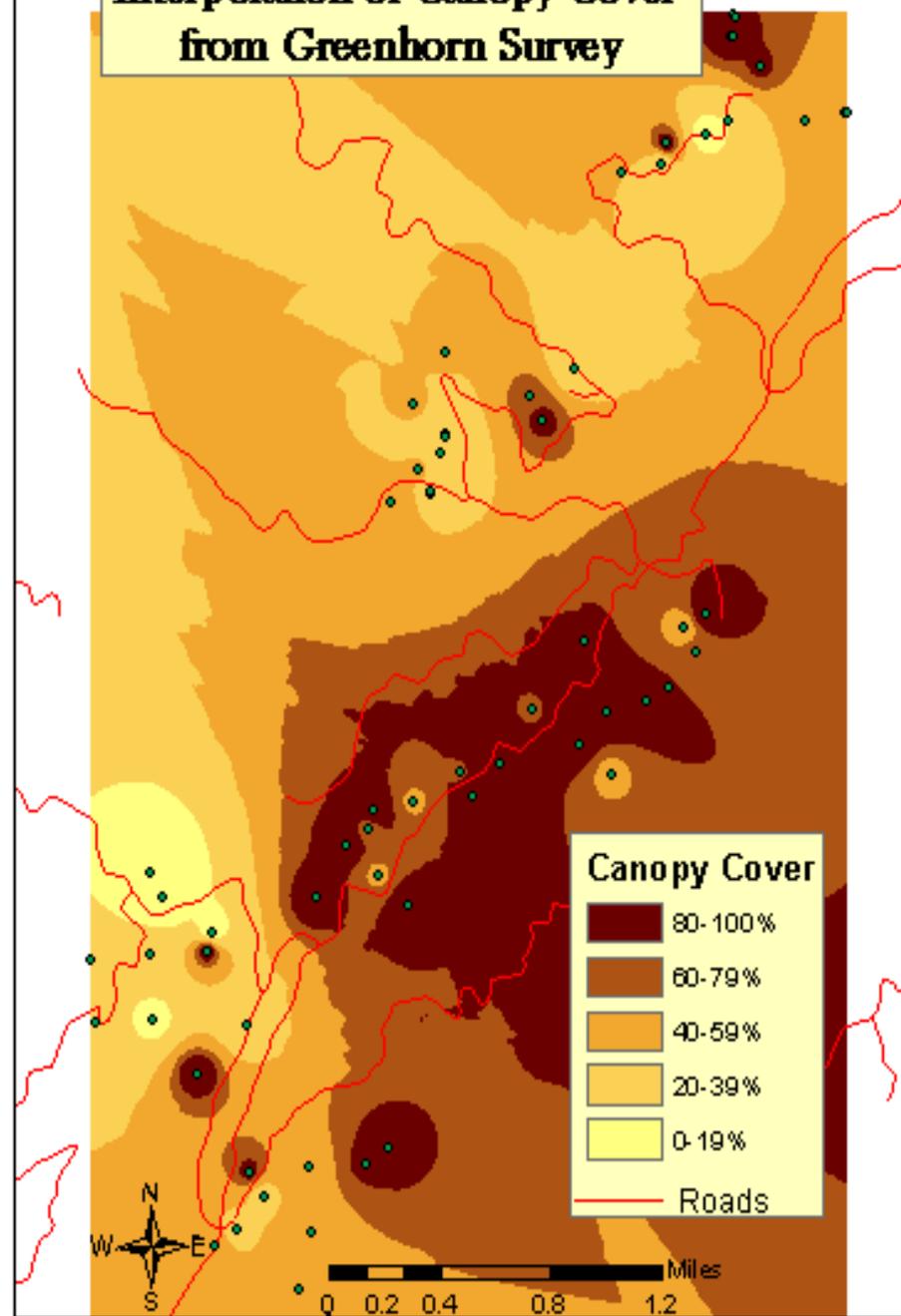
Feature Comparison

- Data from the forest surveys was joined with the GPS coordinates .
- An interpolation method was applied to extrapolate the data throughout the local area.
- Comparisons can now be made between the different features.

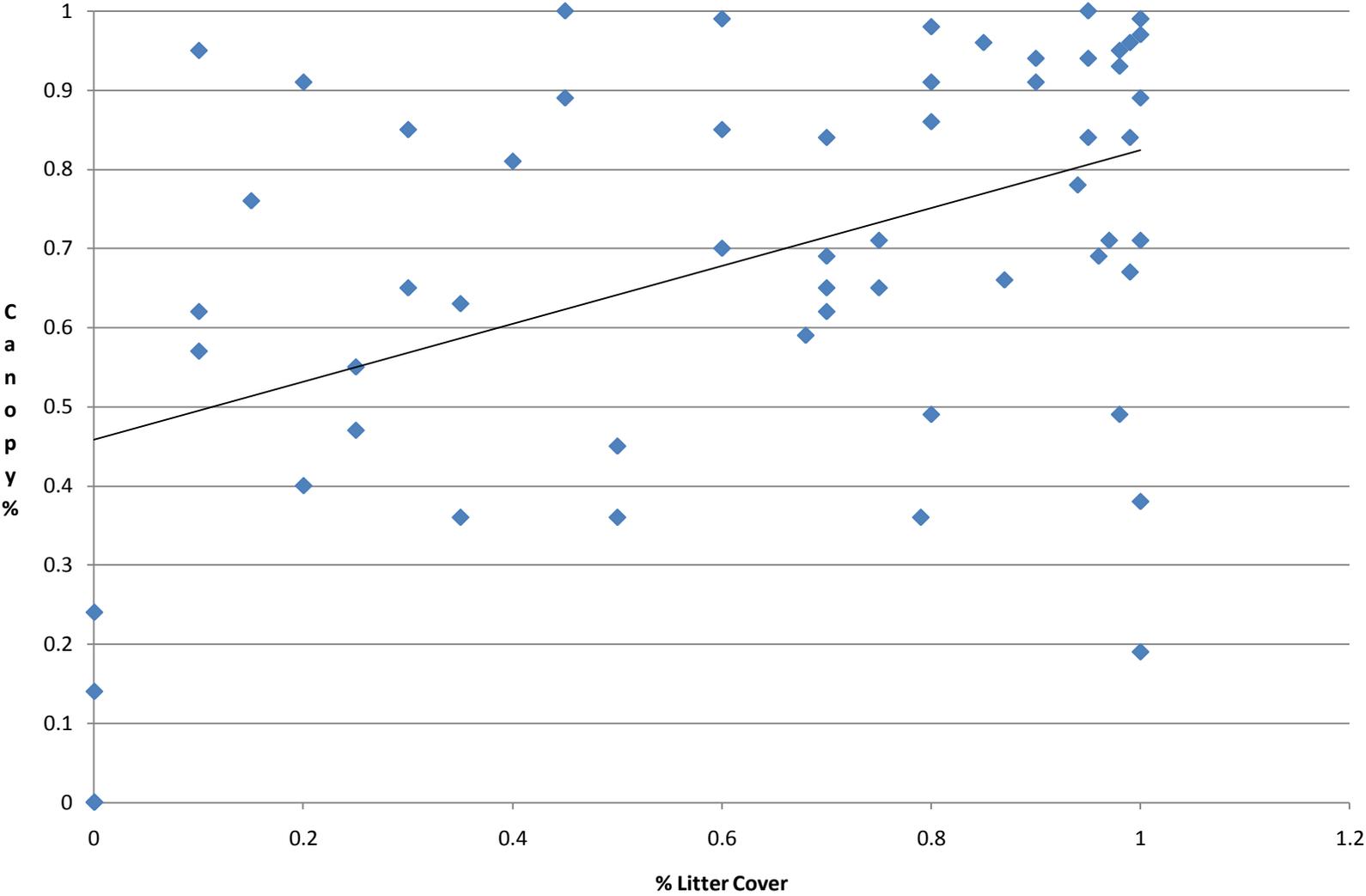
**Interpolation of %Litter Cover
from Greenhorn Survey**



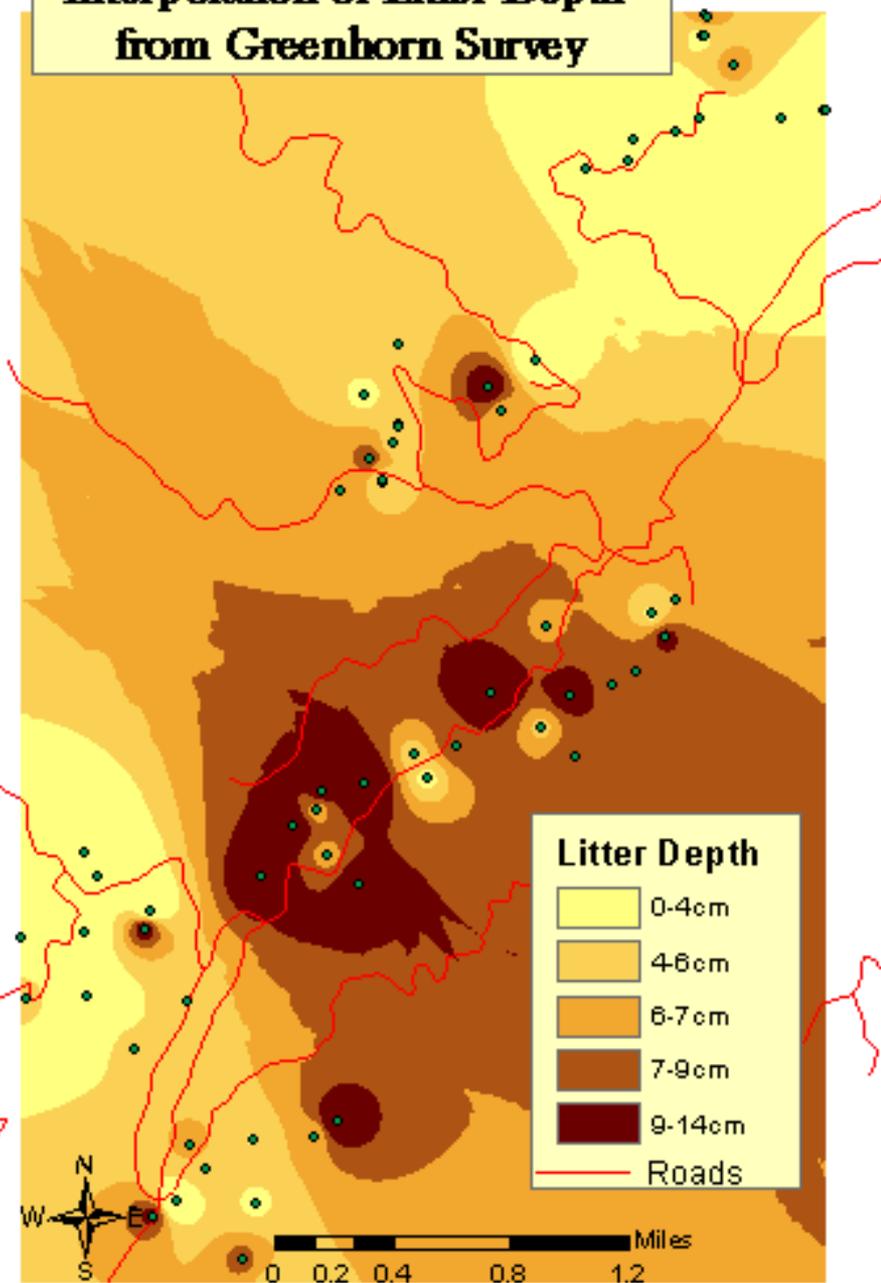
**Interpolation of Canopy Cover
from Greenhorn Survey**



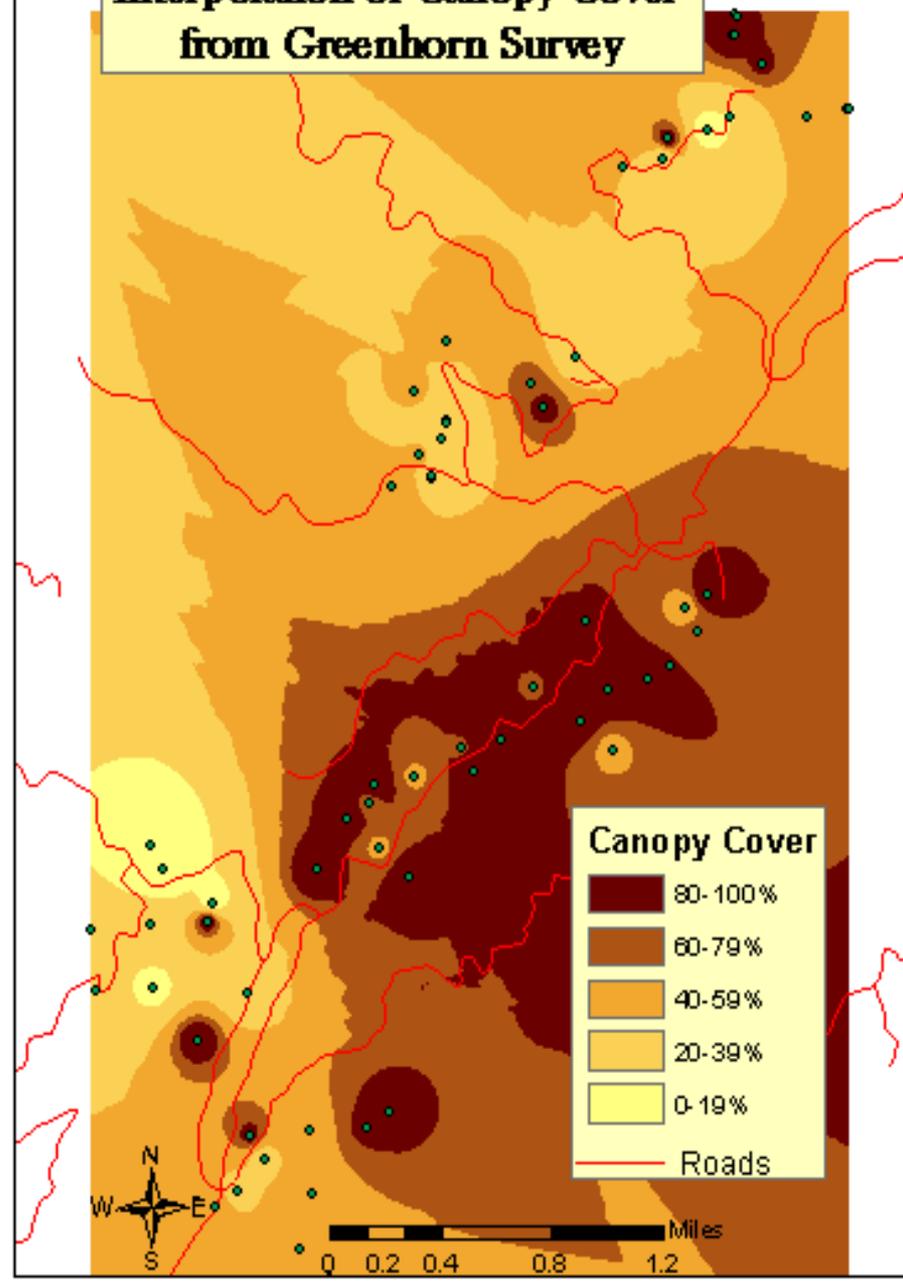
Canopy Cover versus % Litter Cover



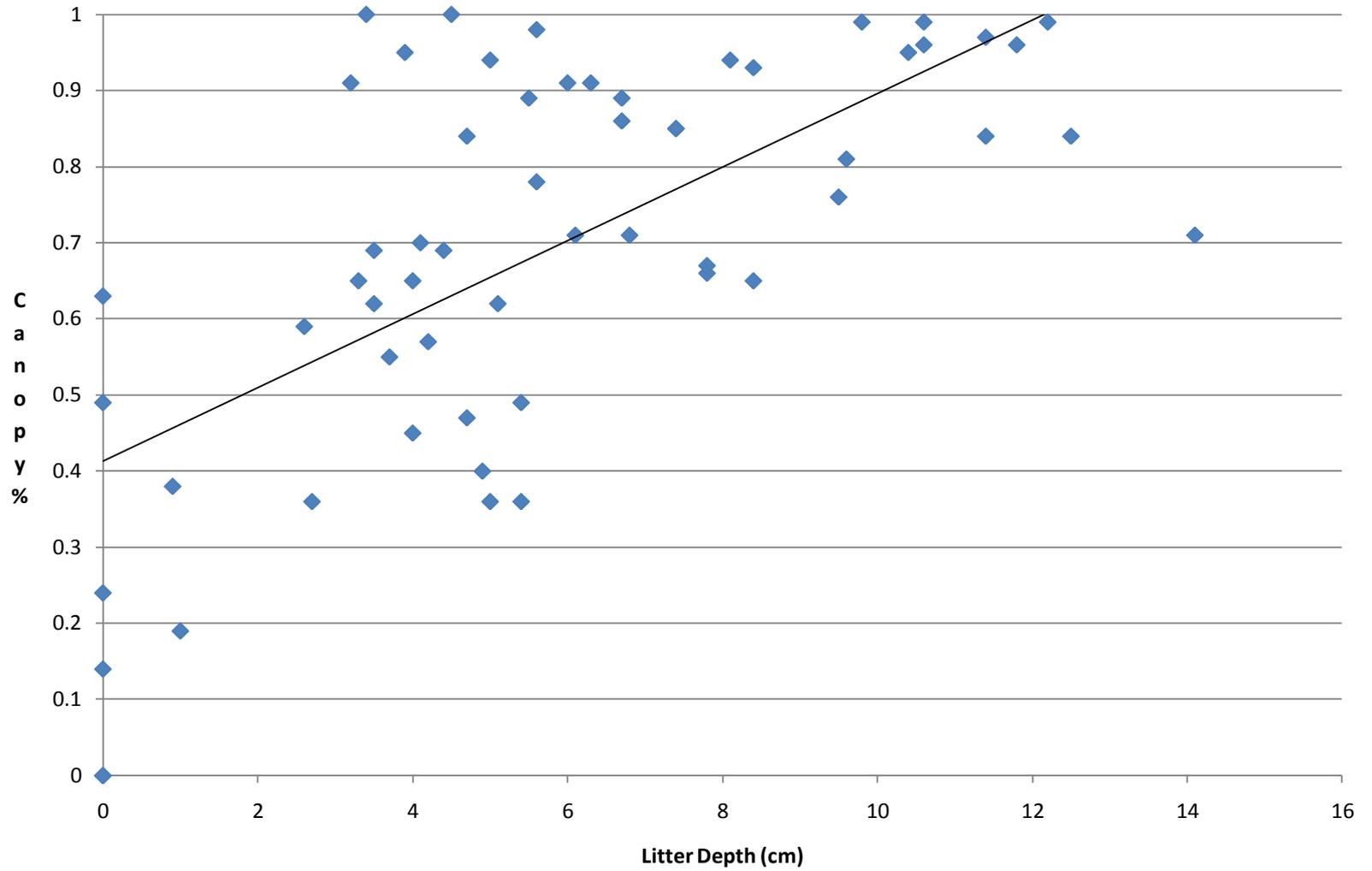
Interpolation of Litter Depth from Greenhorn Survey



Interpolation of Canopy Cover from Greenhorn Survey



Canopy Cover versus Litter Depth



Fisher Habitat

Fishers have several preferences for their habitats, these include:

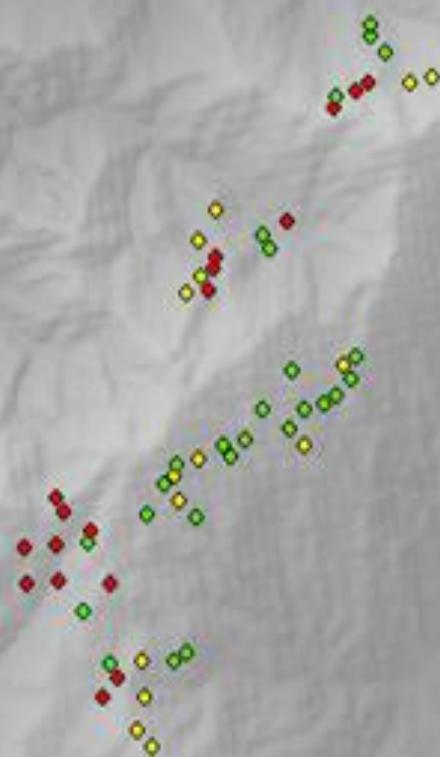
- Canopy cover higher than 60%, preferably higher than 80%
- Trees that are larger than .9 feet in diameter.
- An elevation between 4000 and 7000 feet
- A steep slope, an average of 49 degrees.

For our survey plots we wanted to determine which ones could be considered potential habitat based on meeting those criteria.

Plots with the correct canopy cover and with trees of the right diameter were categorized as being potential fisher habitat.

Greenhorn Survey Plots with Suitable Canopy Cover for Fisher Habitat

Fishers prefer areas with a closed canopy. The canopy most likely to support Fishers is between 80 and 100% closed. A moderate habitat can be found between 60 and 80% closed. Less than 60% cover is not beneficial to the Fisher habitat.

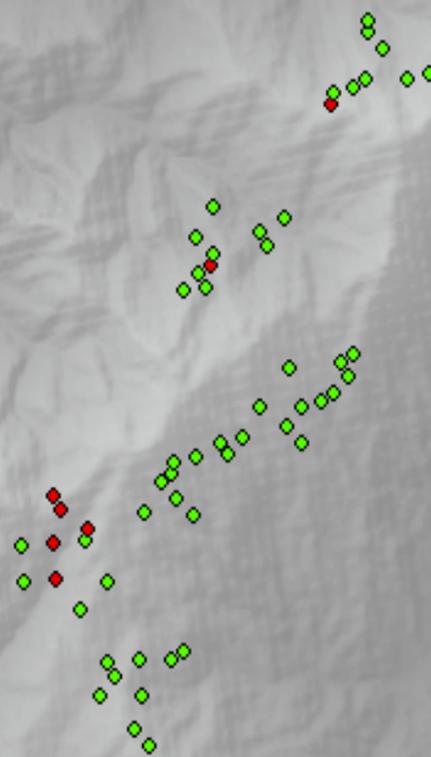


Canopy Cover

- ◆ 80-100%
- ◆ 60-80%
- ◆ 0-60%

Greenhorn Survey Plots with Trees Suitable for Fisher Habitat

Fishers prefer trees that are large enough to act as resting structures. Plots with trees that are larger than .9 feet in diameter at breast height are more likely to support Fishers.



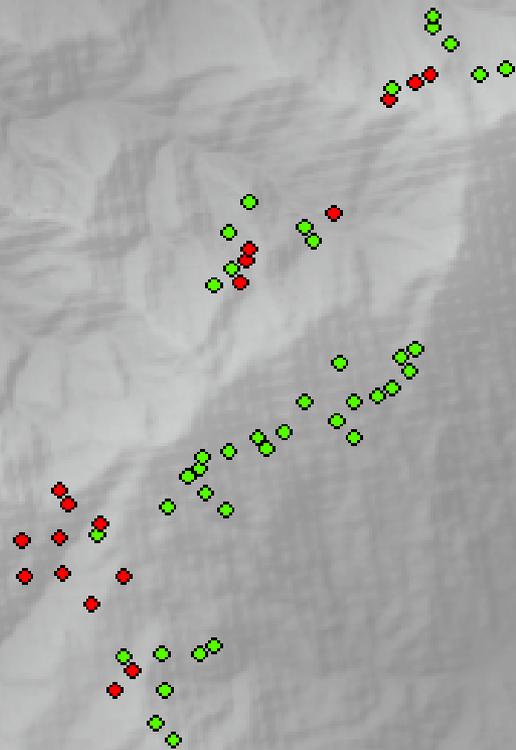
Tree Diameters

- ◆ >.9ft
- ◆ <.9ft

Greenhorn Survey Plots with Trees & Canopy Suitable for Fisher Habitat

Fishers have certain preferences for their habitat. This includes dense canopy cover and the presence of large trees. These survey plots are locations that have both.

42 of our 60 survey plots, or 70%, had both the canopy cover and tree diameter criteria.



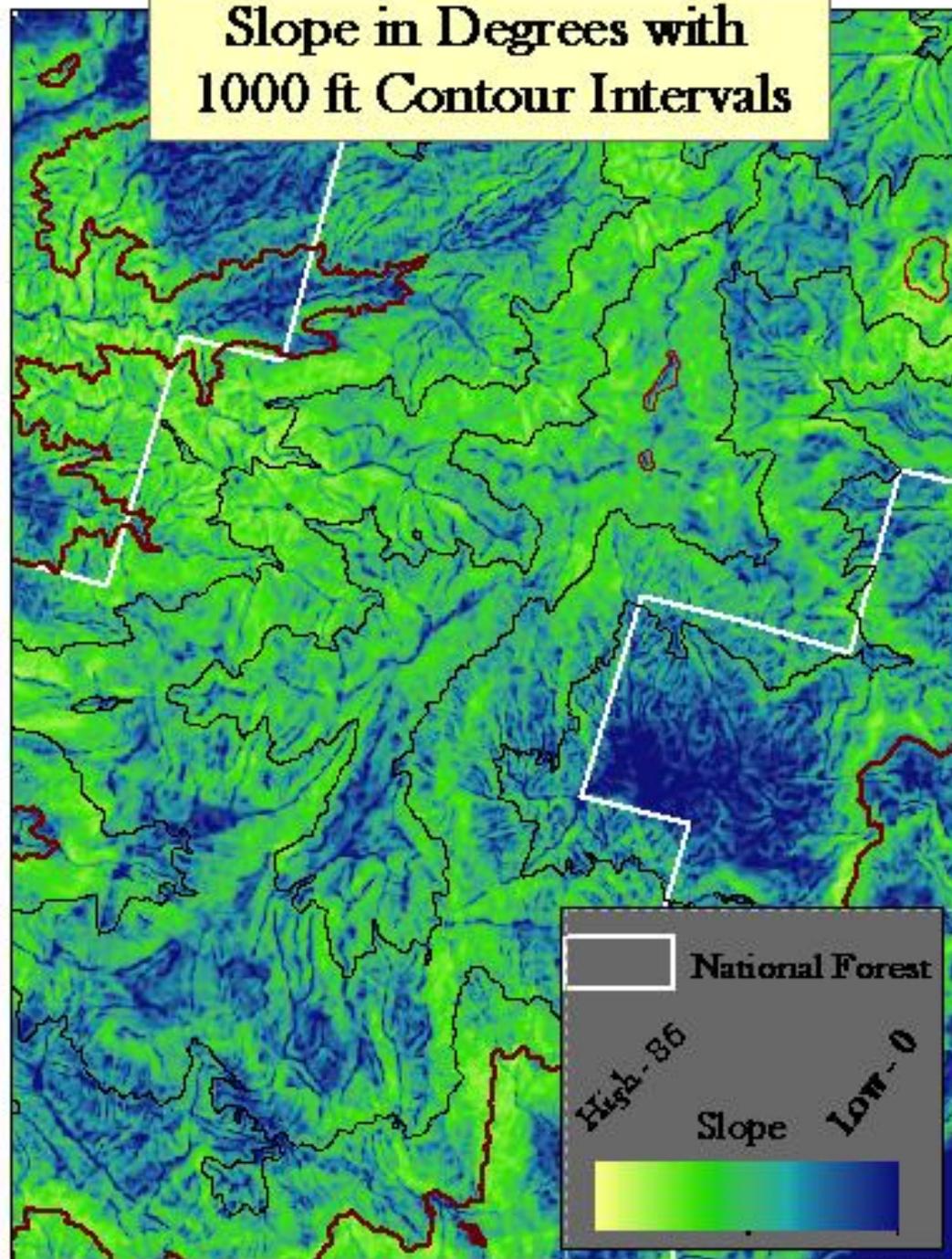
Fisher Habitat

- -
- +

The other two attributes pertaining to fisher habitat are elevation and slope.

- A slope map was generated from the digital elevation map to show where the steep slopes can be found.
- The 4000 and 7000 foot contours were highlighted to display the predicted range.

**Slope in Degrees with
1000 ft Contour Intervals**



The End

