

The Crossing at Great Cacapon L1 Wildfire Assessment

Firewise West Virginia Program Briefing

August, 2010



At the request of the West Virginia Division of Forestry, GIS 4 Schools assisted Hedgesville H.S. science students analyze the risk of wildfire in The Crossing at Great Cacapon in West Virginia.

Level 1 GIS Assessment with AtlasGDS

Students used the new PC/Internet based GIS system to assess defensible space around homes. During this process they used 2003 SAMB aerial photography and 2007 air photos delivered from the Map West Virginia web server. Although the 2007 photos were newer the leaf-on images



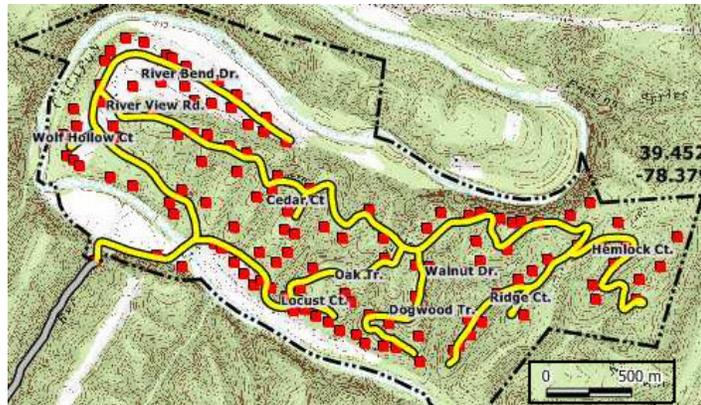
Query Dbf Label	
UTMX	638470
UTMY	4324431
L1	5



obscured homes buried in the woods. The 2003 SAMB photos provided a clear view of all homes in the woods. Each house was tagged with a location and rated for defensibility on a 1-5 scale where 1 is not forested and 5 is overtopped by trees on 2 or more sides. This rating is called a Level 1 Wildfire Risk Assessment and students at Hedgesville High School rated almost 100 homes in The Crossing at Cacapon. The average rating was 4, high risk. The map below shows the locations of the rated homes.

Risk Assessment with GIS

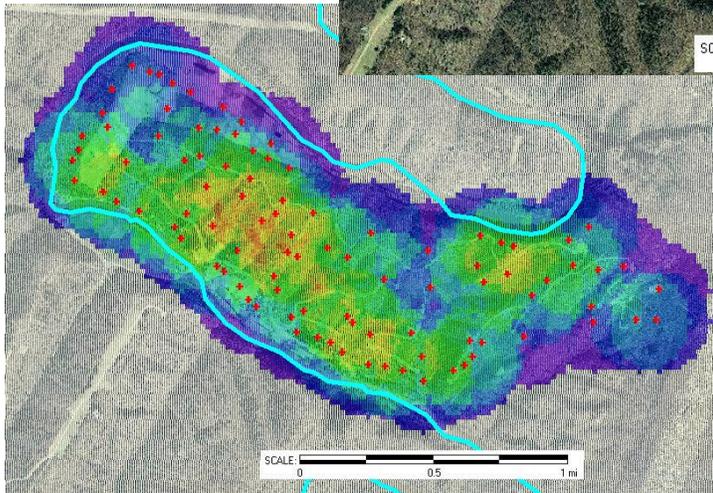
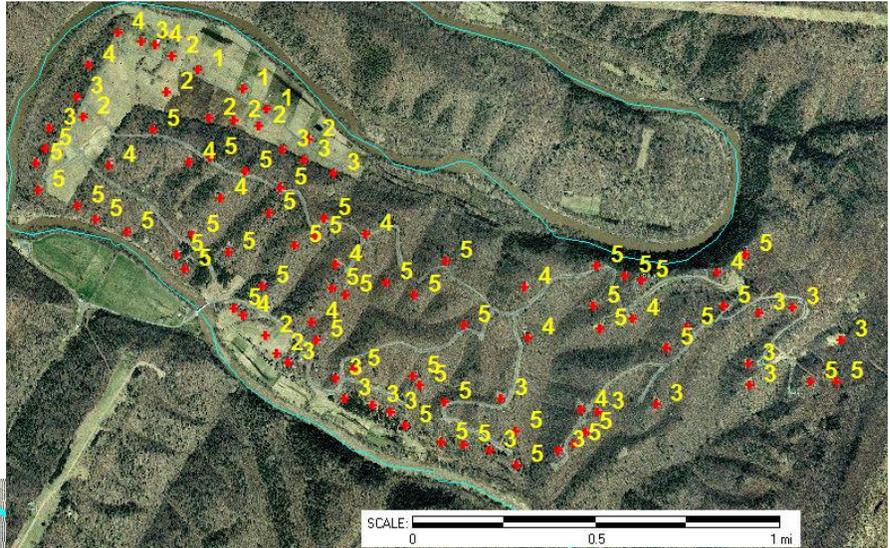
The Level 1 wildfire risk assessment is a valuable tool to tabulate the magnitude of risk of wildfire in a community but it does not show what part of the community is at a greater risk of wildfire. To assist in this effort a GIS modeling technique called Density Surface Model is applied. The DSM uses the L1



data and runs a 1000 foot proximity search around each home. The 2-5 ratings are assigned risk ratings of 5, 10, 25 and 50. All scores within 1000 foot of a home are summed and added to the center cell of the search area. This process is repeated for the entire project area. The model shows the concentration of risk.

GIS Analysis of Level 1 Ratings:

GIS 4 Schools assisted in creating DSM map. The map on the right shows the L1 risk ratings. The map below shows the DSM image on an air photo. The yellow and red areas identify the highest risk areas “Hot Spots”. These areas could then be visited and assessed in greater detail.



Final Reporting

GIS 4 Schools entered the data collected by the students into AtlasGDS geo-database and delivered the Level 1 assessments and Density Surface Model images to West Virginia Division of Forestry for further analysis.

The Firewise West Virginia Project modified the Minnesota Firewise in the Classroom curriculum to fit standards and GIS data available in West Virginia. The process can be applied to other WV communities. In support of the National Fire Plan, the US Forest Service (S&PF NE Area) allocated funding for this project. The lessons were completed in 2007 and have been taught for the last three years to Hedgesville H.S. students. During the last three years, students at Hedgesville H.S. have conducted Firewise Projects in five communities, completed over 2,000 L1 assessments and have completed over 400 detailed L2 assessments in the Woods Resort.

Under this program, schools received GIS software and considerable data both about environmental management, forest health, and resource protection. All data generated by this project was shared on request with cooperators.



West Virginia Division of Forestry
Eagle Promise Charitable Fund
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