

APPENDIX B: METHODOLOGY FOR DEVELOPING THE FOCUS AREAS

Focus Areas are concentrations of opportunities where we can maximize our conservation benefits. We look for areas that currently offer the best combined potential to meet our project's natural resource, recreation, and agricultural goals. We anticipate that at least 2/3 of the acres for which we seek permanent protection (8,000 acres) would be within these Focus Areas. The remaining acreage would be reserved to protect outlying properties of outstanding conservation value (e.g., high quality prairie remnants) within the larger project boundary.

Focusing Approach

We developed a set of three alternative Focus Areas from which our final Focus Areas were selected following public input.

These three alternative areas were developed by making a land cover map reflecting optimum areas of grassland cover, and then overlaying other key resources and features. The project's technical team used best information available at this time.

First Step - Preliminary land cover modeling

The first step in locating 'focus areas' is to identify general areas where current land use is compatible with the goals and objectives of this project. To do this, we used a Geographic Information Systems (GIS) modeling approach based on the state's WISCLAND land cover data. Land cover was put into four categories that are directly relevant to the success of this project:

1. **Grasslands** (e.g., pasture, grass hay, CRP, old field). Grasslands, prairies and savannas are priority natural communities in this landscape and the foundation of the project.
2. **Agricultural lands** (e.g., row crops, small grains, alfalfa). Agricultural lands maintain an open landscape, meet some needs of grassland species, are important buffers for prairies and grasslands, and represent opportunities for possible conversion to grassland in the future.
3. **Woods**. Forested areas are a natural and important part of this landscape. As such, the Department will avoid focusing grassland conservation efforts in heavily wooded areas, particularly if the woods extend beyond narrow valleys and draws into the uplands. (*Note: this does not include rare local Oak Woodland stands as described above.*)
4. **Developed areas**. To minimize conflict with local development and maximize the long-term conservation value of our efforts, we will avoid focusing efforts near areas that are developed or planned for development



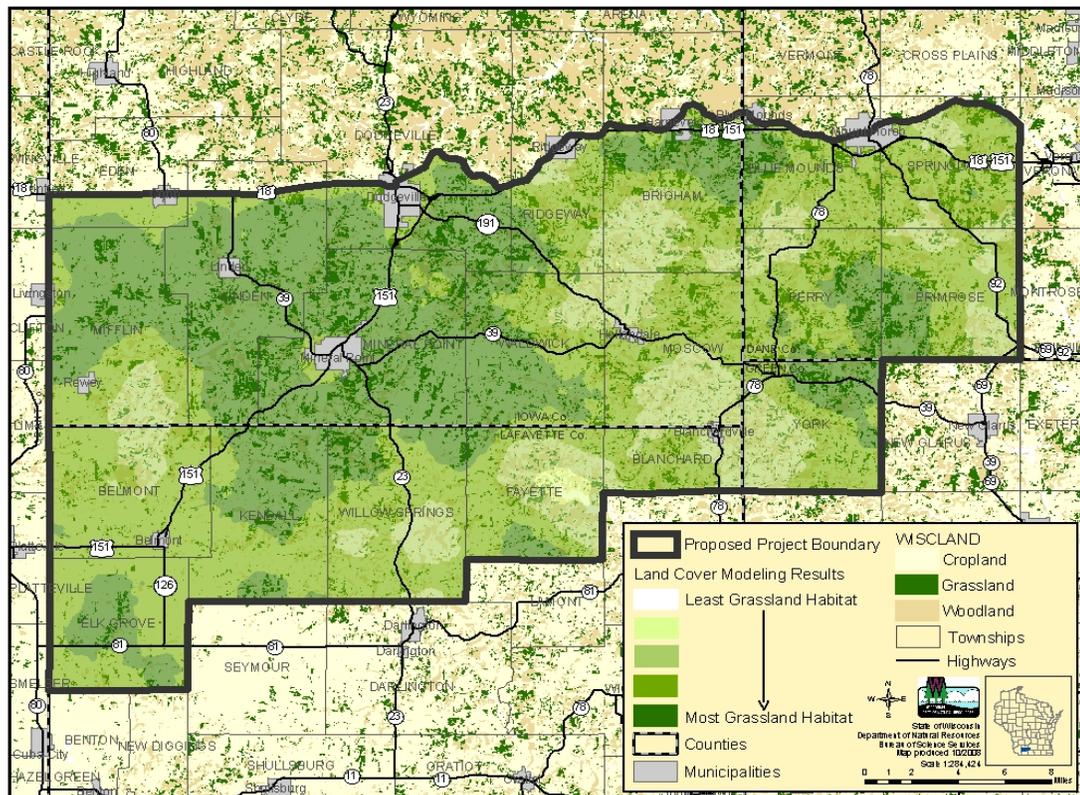
Next, we used standard tool used to analyze trends across a landscape, called a “*focal mean analysis*.” In essence, a focal mean analysis shows spatial trends across landscapes and where resources (in our case, the four land cover types above) occur in configurations that are most valuable for conservation. A focal mean analysis works as follows.

Method:

1. Each of the four land cover types above is assigned a value, in terms of its value to this project: a high value (10) to grasslands; middle values to forage crops (5), small grains (5), and other agriculture lands (4); and a low value (0) to urban areas and forests.
2. A computer “looks” at each individual point (pixel) on a map, calculating the average of the values within a neighborhood around that point (in this case we used a circle with a radius of 2700 meters, or 1.7 miles), and we assign that average value to the point.
3. The process steps from pixel to pixel, repeating the steps listed in #2, until the entire map is completed.

The result for this project is shown here:

Figure B-1: Areas within the project boundary where preliminary modeling indicates existing land cover is most likely to be compatible with the goals of the Southwest Wisconsin Grassland and Stream Conservation Area. Values shown are a continuum from highest value (dark) to lowest value (white).



Level 2 Focusing Approach:

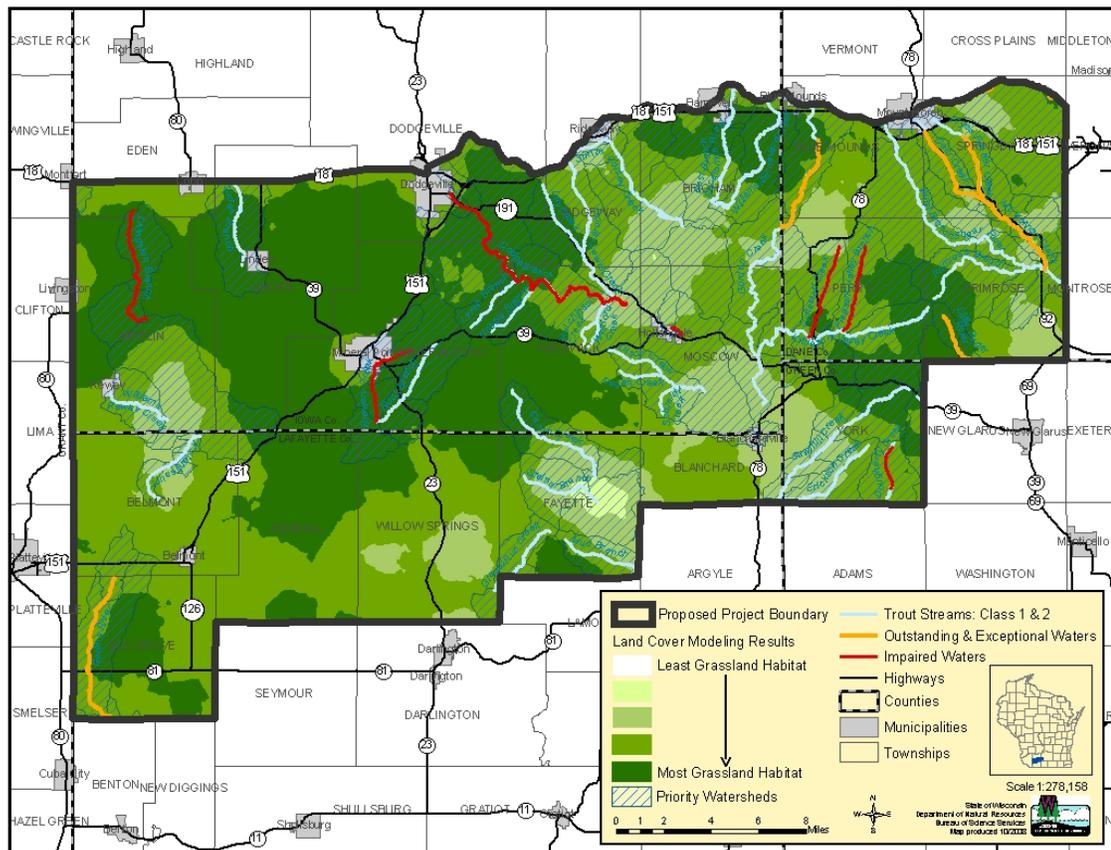
Next Step – Overlay key resources

The second step in identifying prospective Focus Areas was to overlay natural and cultural resources and land protection data on this base land cover map. These data illustrate areas on the landscape where we can best meet multiple objectives, e.g., improving water quality in priority streams while also protecting remnant prairies within a larger rural grassland landscape. We used the best and most current information available, which included recent prairie remnant and endangered resources surveys in the area.

Priority streams and their watersheds are among our major protection and management goals. Using the land cover modeling as a base map, we then overlaid the priority streams and their watersheds, as shown here:

1. Watersheds of priority streams: warm-water and cold-water streams that have been designated as 1) outstanding or exceptional resource waters, 2) class 1 & 2 trout streams, and 3) impaired waters (i.e., designated 303(d) streams).

Figure B-2: Land cover modeling results overlain with watersheds of priority streams within the Southwest Grassland and Stream Conservation Area.

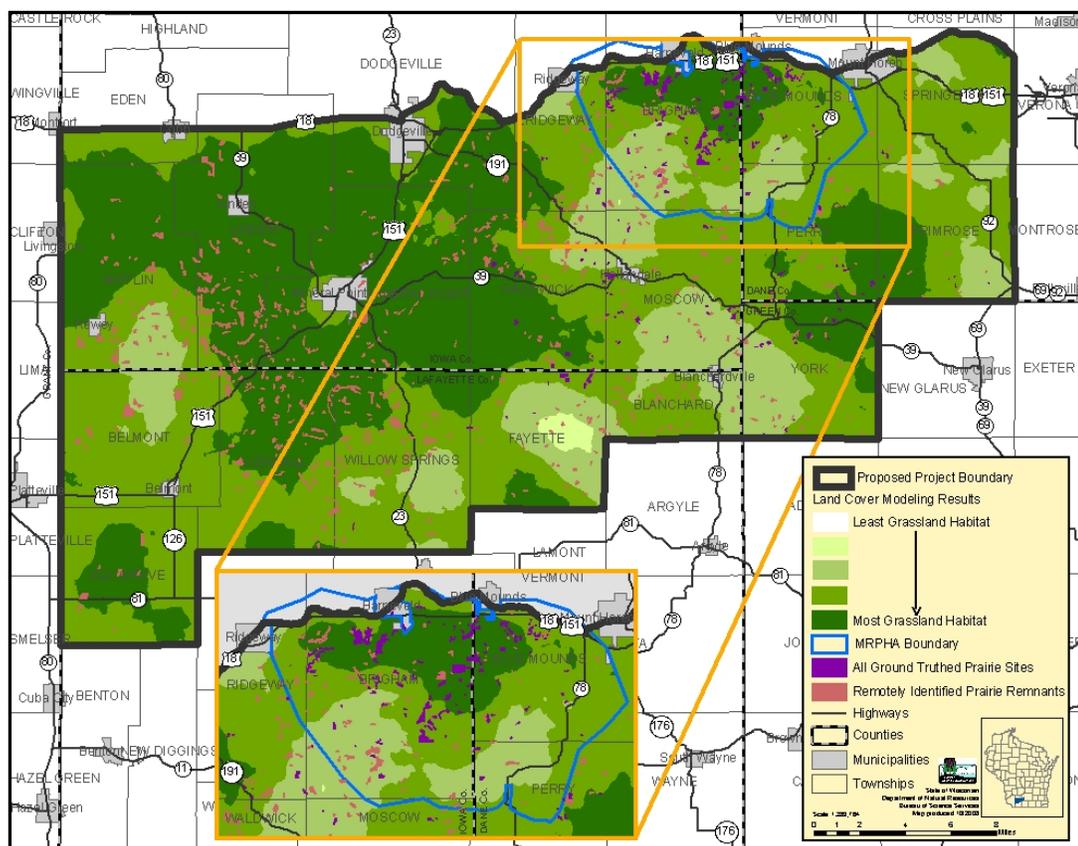


2. Prairie remnants: known (ground-truthed) or potential (remotely identified) locations of remnant prairies and oak savannas:

Remnant prairies of varying quality are scattered across the project area. With funding from a State Wildlife Grant, researchers from UW-Madison (led by John Harrington, Department of Landscape Architecture) identified likely locations of prairie using aerial photography interpretation. Biologists with The Prairie Enthusiasts then contacted landowners and where given permission, visited the properties to ground-truth, or verify, whether or not prairie sod indeed was present at these sites. In more than half the cases, prairie sod was present at the remotely – identified sites. Funding so far has permitted only the eastern half of the project area has been ground-truthed by field staff. Further ground-truthing across the western portions of the project is needed.

Results are shown below. Note the high number of prairie remnants ground-truthed within the Military Ridge Prairie Heritage Area, which was a top priority for field surveys in the study.

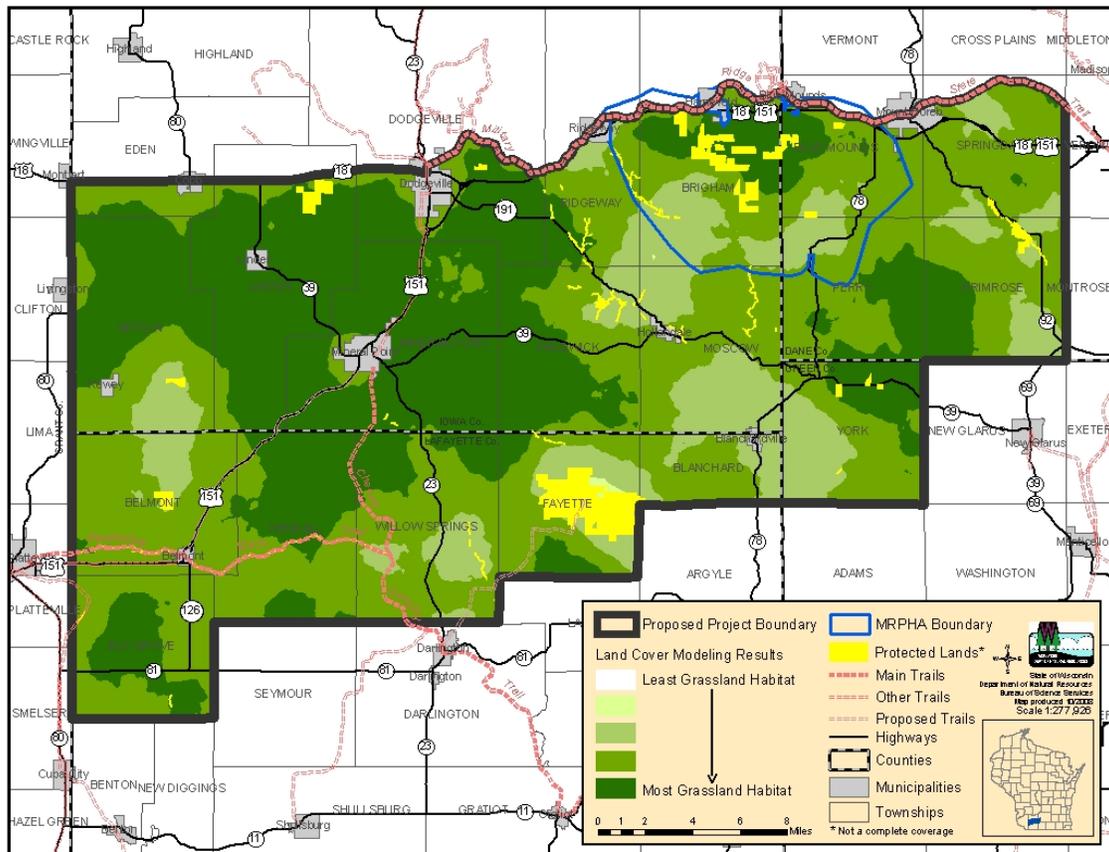
Figure B-3: Land cover modeling results overlain with locations of remnant prairies, savannas and oak woodland, both remotely identified and ground-truthed



3. Areas where there are protected lands, including both public lands and other conservation properties. These protected lands, as shown below, include 1) DNR lands (including easements), 2) other public lands (local, county, state, federal), 3) private conservation lands (e.g., lands in fee purchase or easement by private groups like The Nature Conservancy or The Prairie Enthusiasts) and 3) public trails

Other conservation properties considered but not displayed on the map below are: 1) properties identified for conservation or open space in existing land use plans, 2) properties enrolled in USDA set aside programs (e.g., CREP, CRP), USFWS programs, or the state's Managed Forest Law. CREP lands are shown in the next map, Figure B-5.

Figure B-4: Example of land cover modeling results overlain with public properties, existing or proposed trails, and other protected conservation properties in the Southwest Grassland and Stream Conservation Area (not all privately owned conservation lands shown here, e.g. CRP, Managed Forest Lands not shown).



We also overlaid the following information:

4. Endangered Resources: areas with known rare plant and animal populations, or high quality natural communities (e.g., prairies, grasslands, savannas, pine relicts).



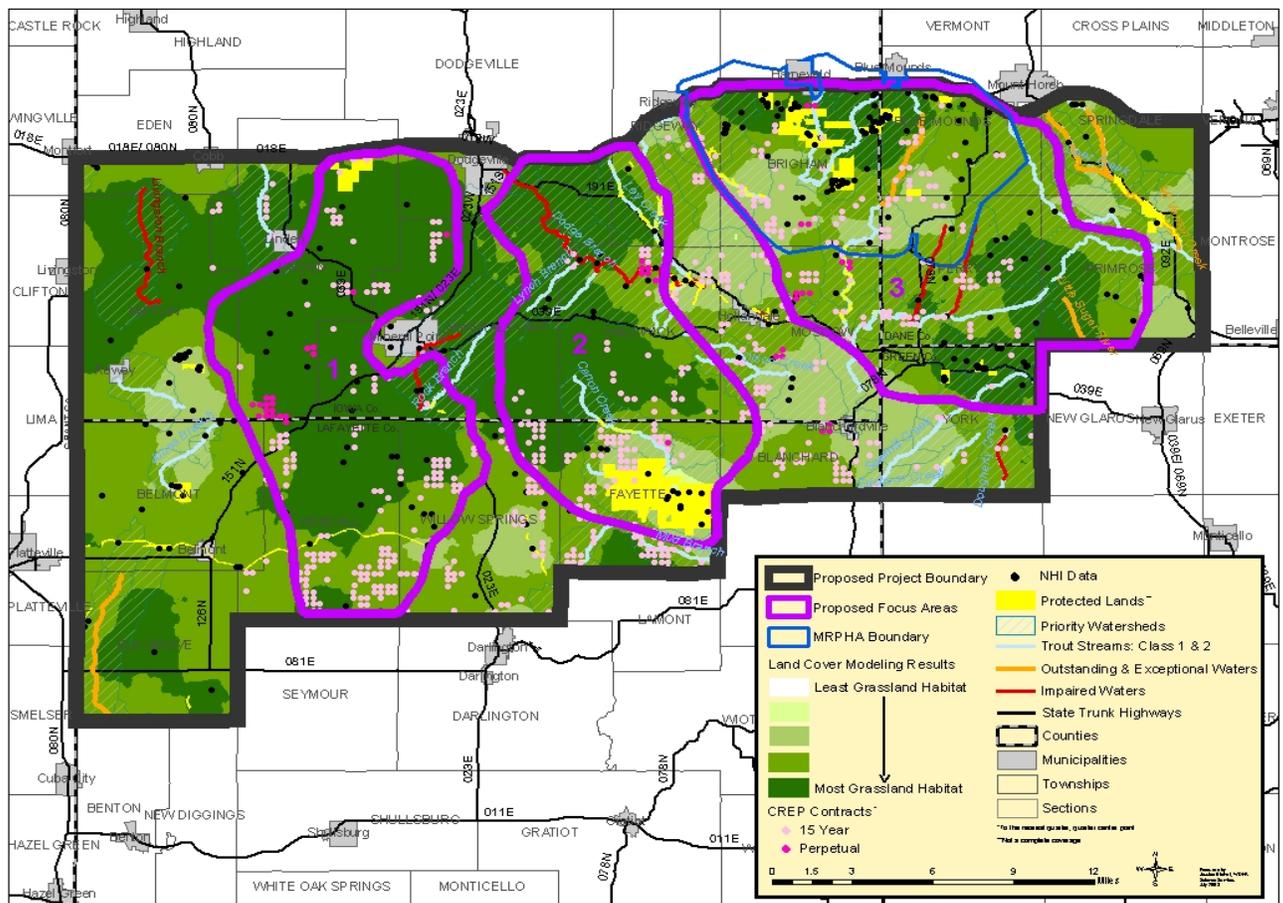
5. Historical and Archaeological Resources: most current spatial information available from the State Historical Society on locations of archaeological features (e.g., native burial mounds, ancient rock art) and historical features (e.g., historic European-American cemeteries or buildings).

Level 2 Focusing Approach:

Final Step – Putting the pieces together: Focus Area Alternatives

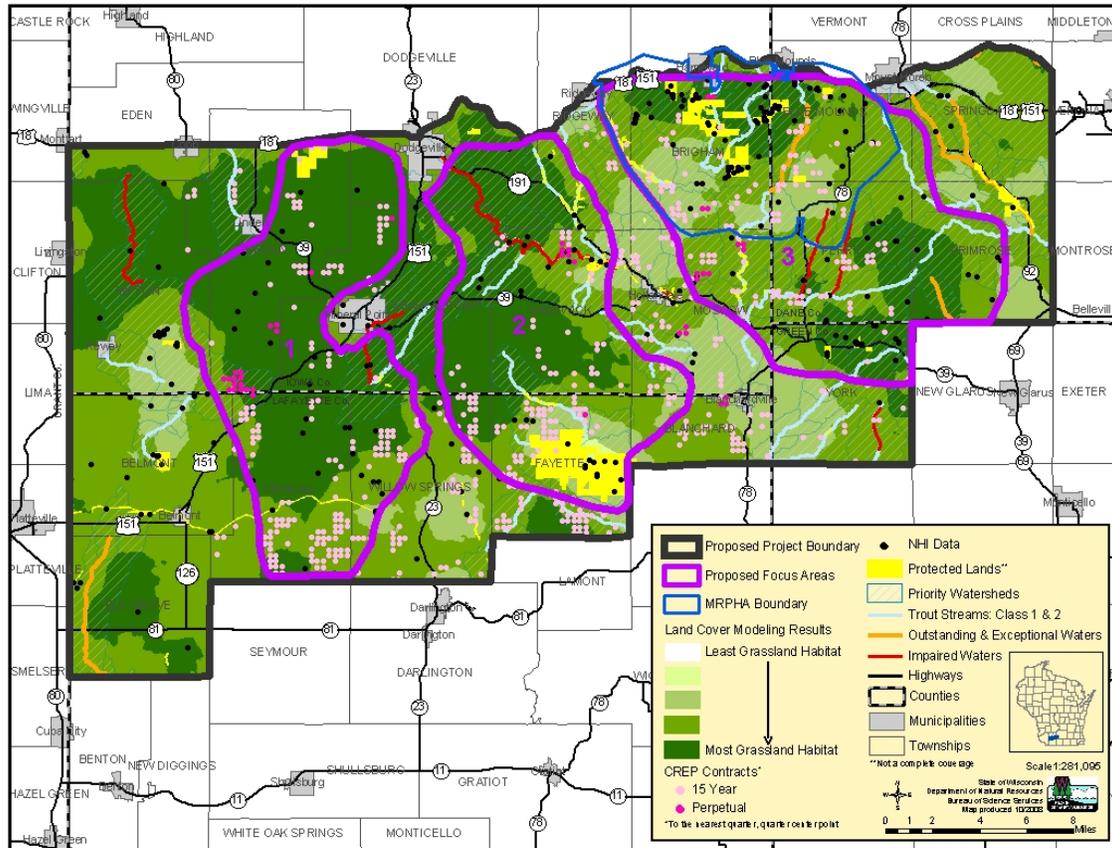
The following three possible Focus Areas, as shown, then were drawn using all of the information described above:

Figure B-5: Composite showing 3 Proposed Alternative Focus Areas over multiple data layers



These three proposed Focus Areas were taken to the partners and to the public for input in August 2008. Based upon public input and suggestions, Focus Area 2 was slightly modified, and all three were retained as the final proposed areas of focus for the project, as shown in the next Figure below.

Figure B-6: Final three Focus Areas selected following public input 2008



These boundaries are approximate only, and are subject to revision as land use changes occur, and as we work more intensively with landowners and partners on the ground to find the best conservation opportunities.