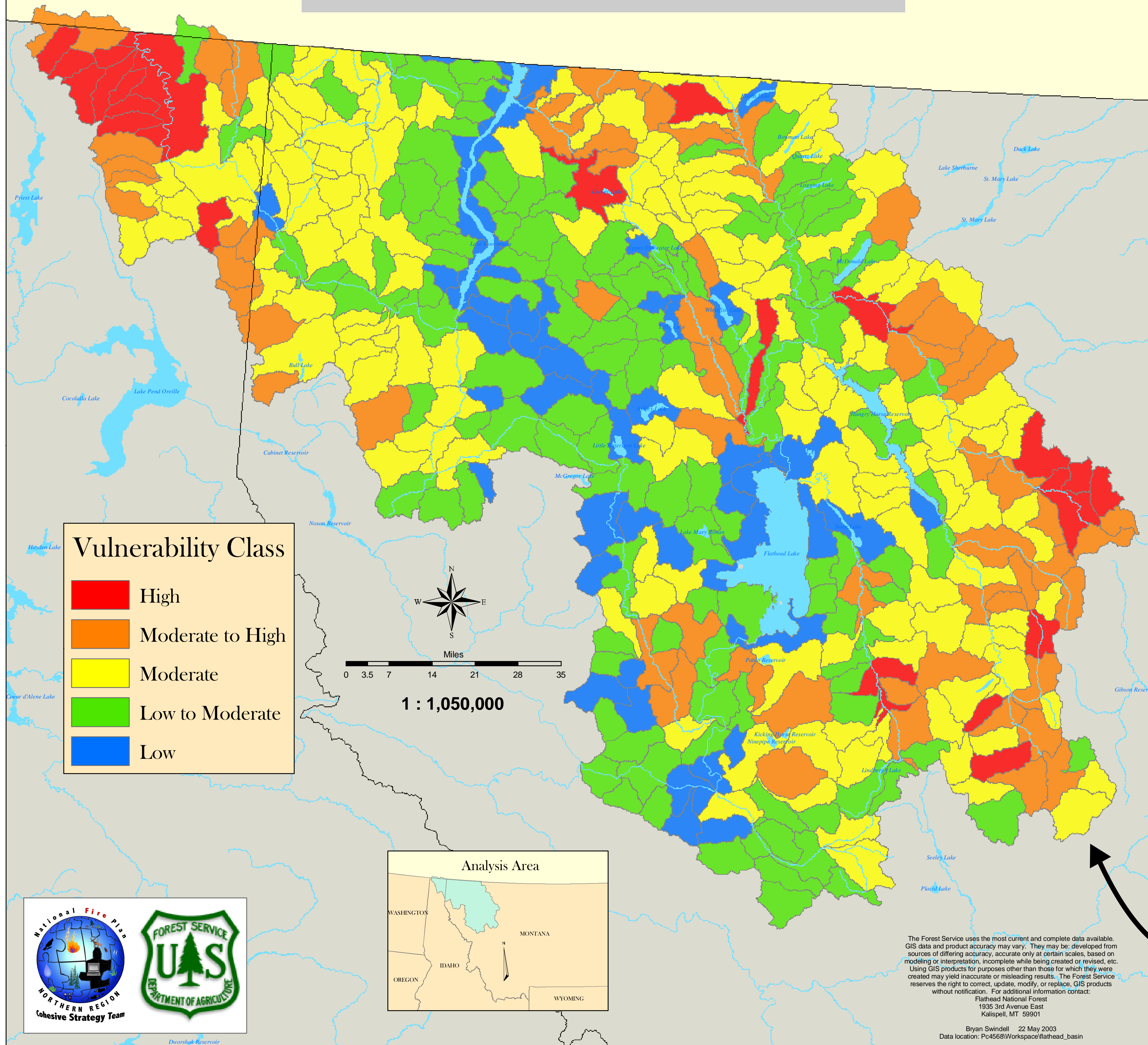


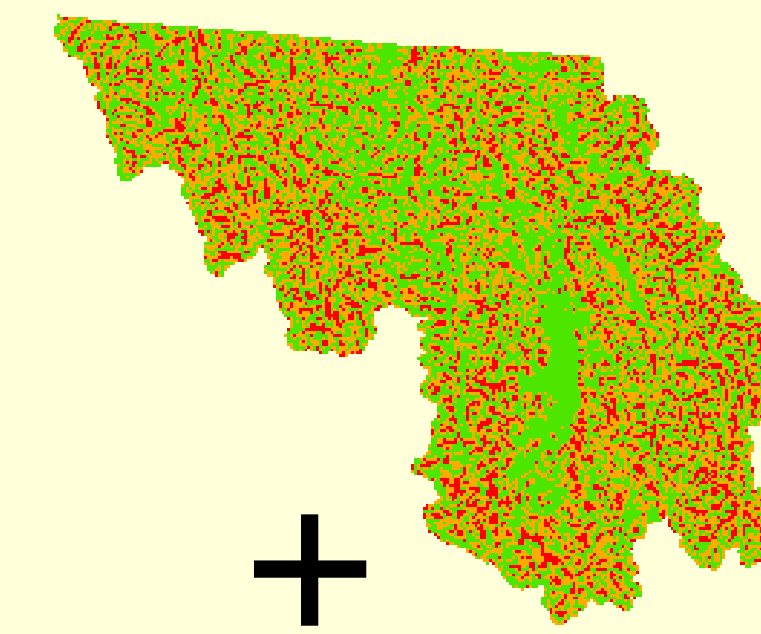
Appendix 44 USFS Region 1 Cohesive Strategy Team Vulnerability Analysis

Kootenai and Flathead River Basins Watershed Vulnerability by HUC6

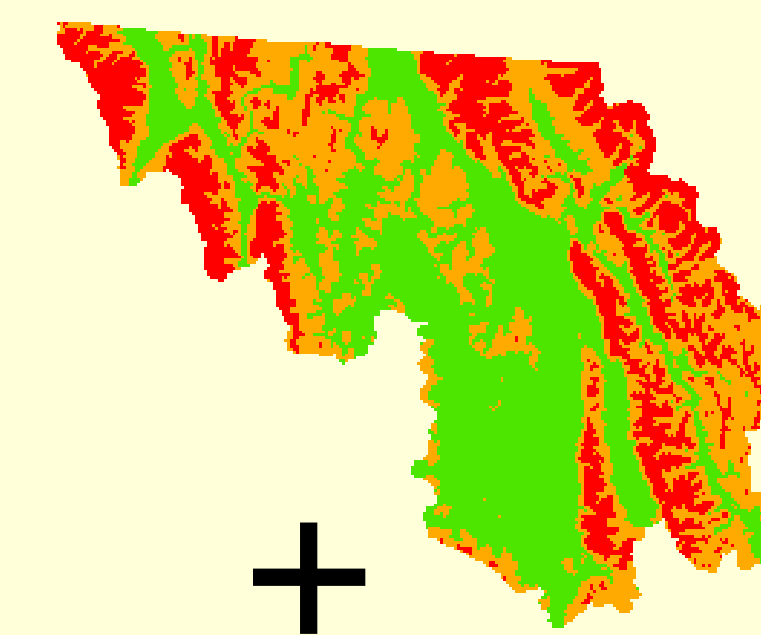


Watershed vulnerability is an index of the inherent capability of a watershed to tolerate disturbance. It takes into consideration topographical, hydrological and climatic factors. Some areas are more naturally prone to erosion, landslides, etc. than are other areas. Determining vulnerability is an important first step in quantifying and assessing impacts and ultimately prioritizing watersheds for restoration.

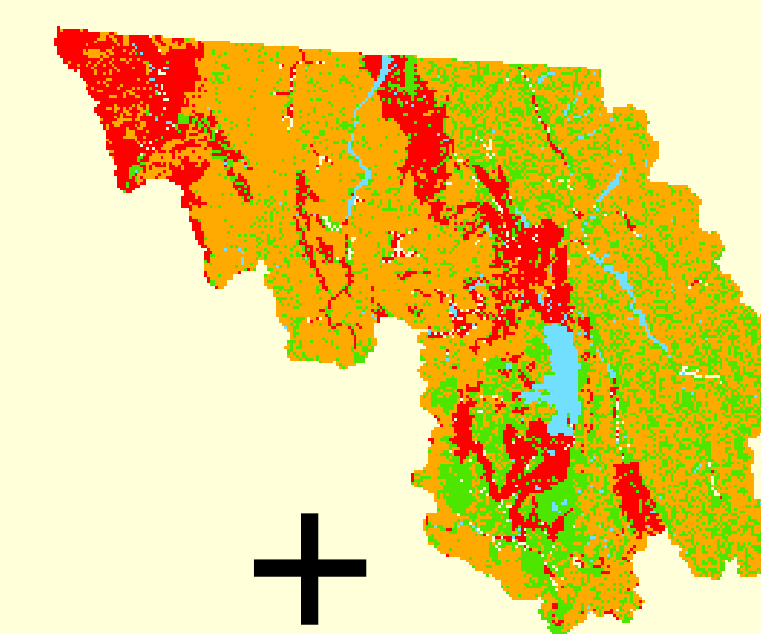
Watershed vulnerability was derived by integrating the following spatial datasets:



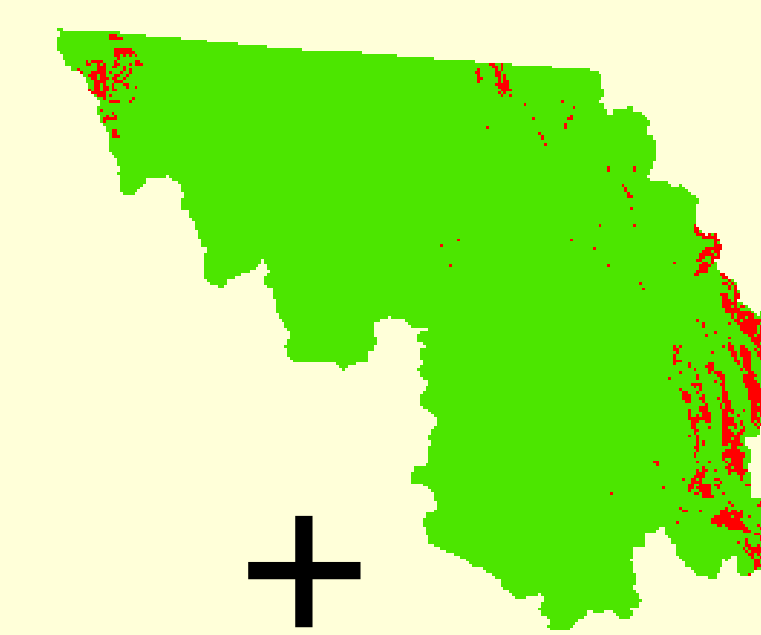
Drainage Density- The miles of stream/square mile is an indicator of the ability of a watershed to deliver wood, water, and sediment to and through the system. The general concept is that the higher the drainage density the more likely sediment will be routed to streams. Drainage density was derived by dividing the number of miles of stream by the square miles of each HUC6.



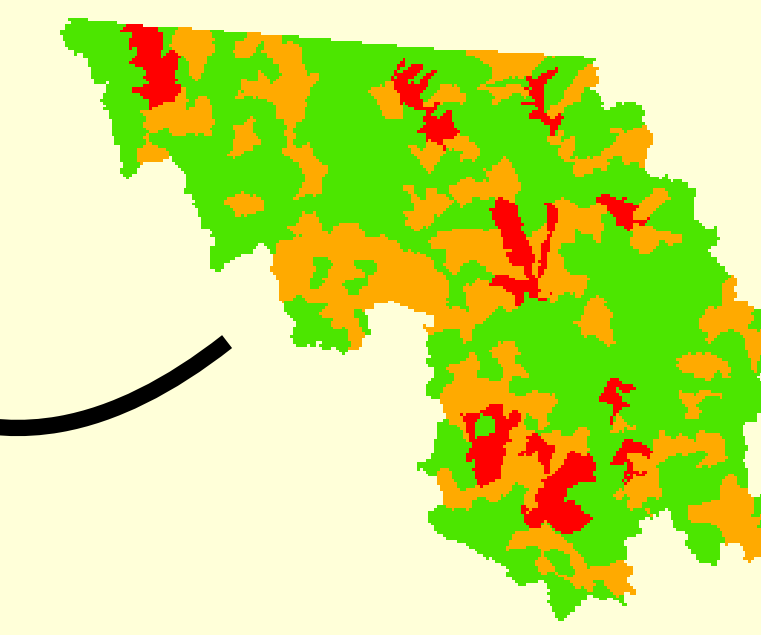
Precipitation- In the absence of vegetation, areas with higher precipitation generally have more surface and mass erosion due to the presence of increased moisture. The mean annual precipitation for each HUC6 was derived from DAYMET data.



Erosive Soils- The soil taxonomic classes from STATSGO were rated according to their inherent erosion potential. The erosion potential was grouped into 3 classes and each HUC6 was classified by the area-weighted average of those classes.



High landslide potential- Certain Land Type Associations (LTAs) have a relatively high potential for landslides and debris flows. These LTAs have a higher sensitivity to disturbance than other landforms. Each HUC6 was classified by the percentage of high landslide LTAs in each watershed.



Low Gradient Streams- Low gradient streams (<2%) are known as “response” reaches and are more vulnerable to impacts than “transport” reaches. The number of miles of low gradient stream by HUC6 were classified into 3 classes.