

Figure 1. Land use areas and administrative units used by wild horses and as used in the simulation model. The thick line indicates lands officially available to wild horses inclusive of the designated PMWHR, and the Lost Water and Mystic allotments. The designated PMWHR includes those lands within the thick line, less the allotments. USFS lands used outside the PMWHR in the north have been unofficially used by the horses due to fence disrepair.

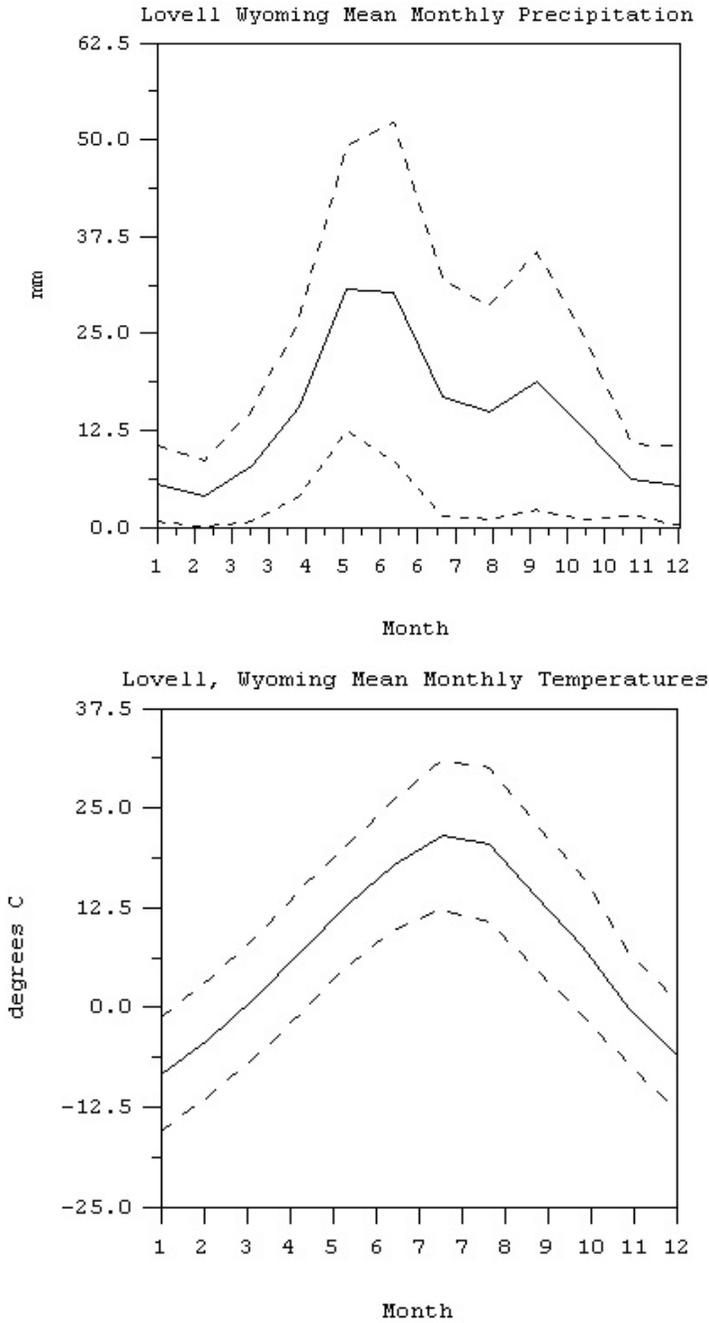


Figure 2. Mean monthly precipitation and standard deviation, and mean monthly average, minimum and maximum temperatures for Lovell, Wyoming, 1948-96.

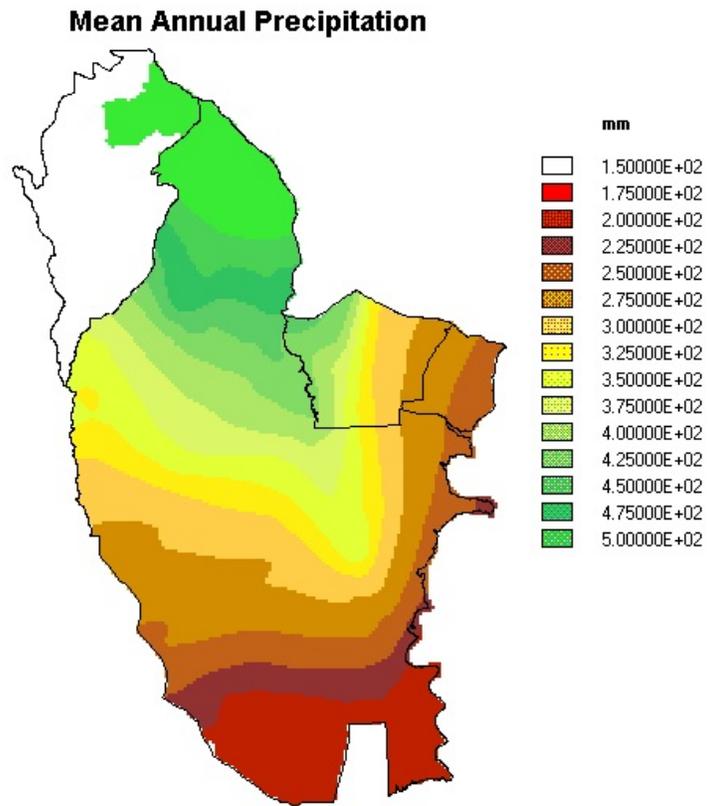


Figure 3. Mean annual precipitation for the Pryor Mountain Wild Horse Range as estimated by a hydrologist (from map of precipitation isohyets for southern Montana, P. Farnes, unpublished).

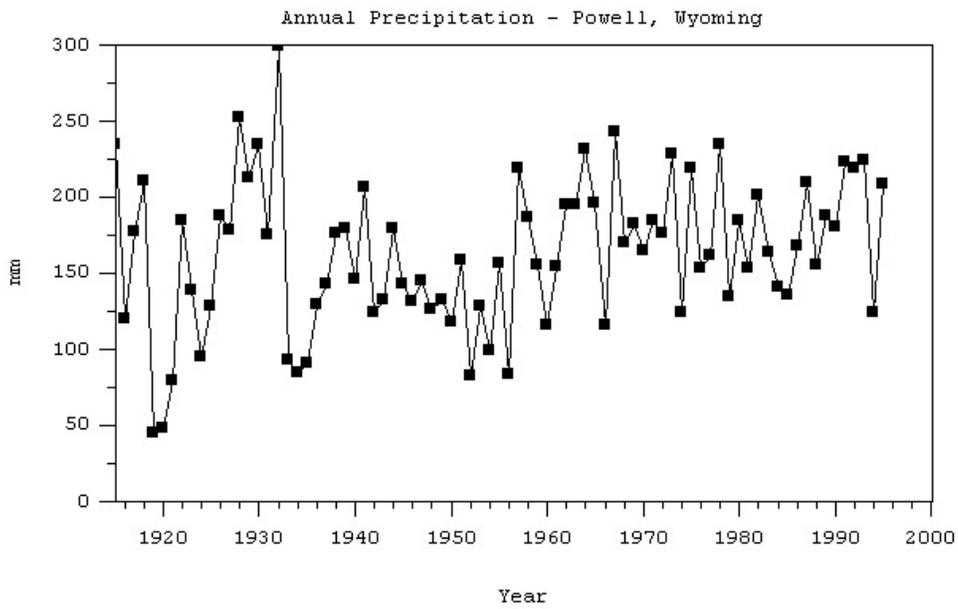
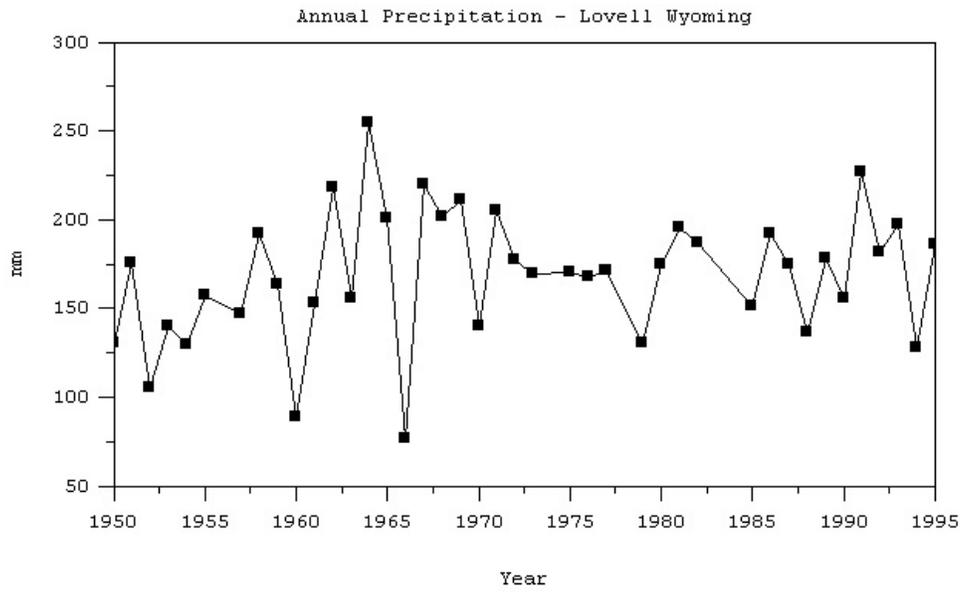


Figure 4. Annual precipitation in Lovell and Powell, Wyoming.

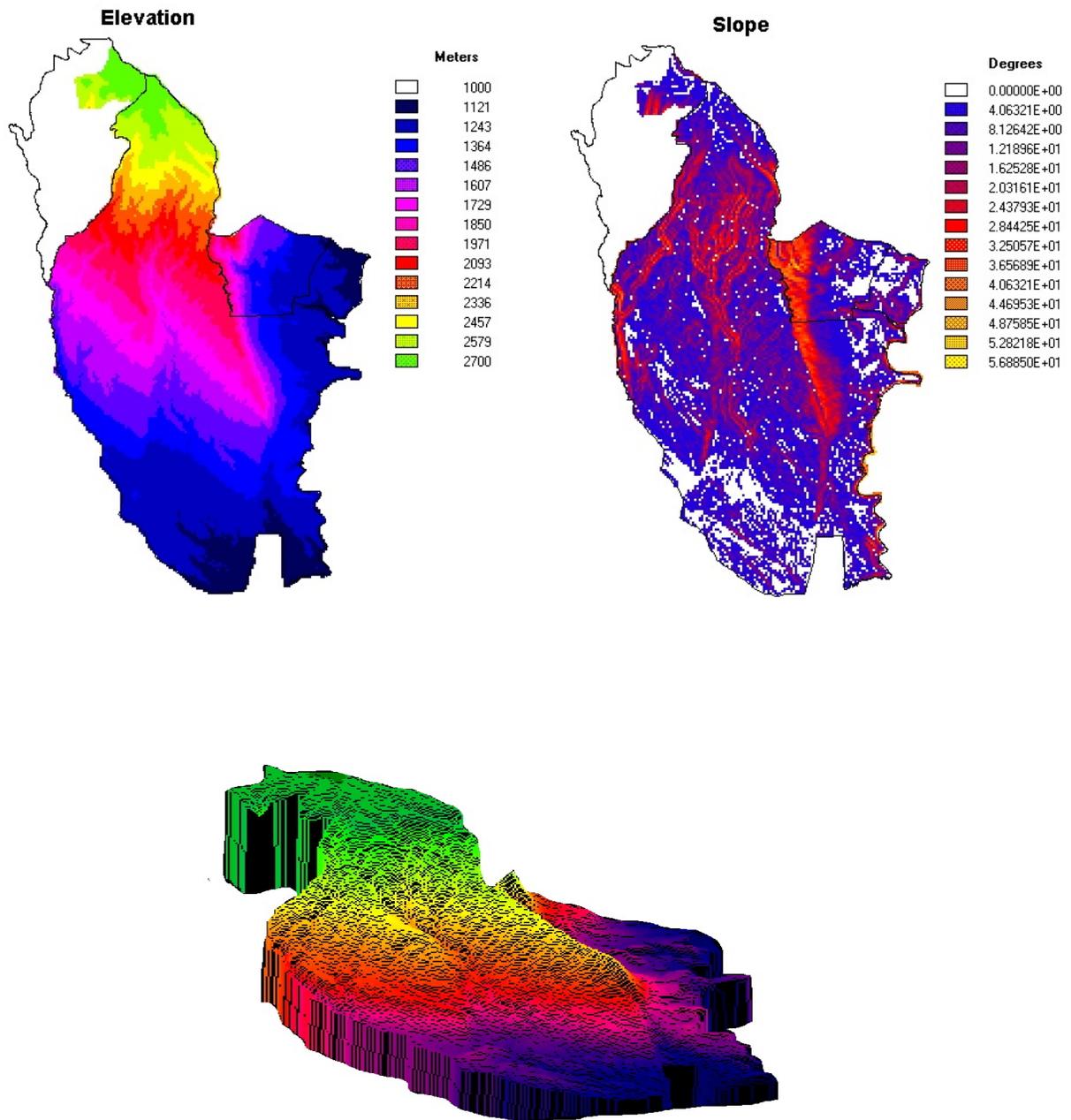


Figure 5. Elevation and slope of the PMWHR and an orthographic view from the southwest. The notation in this and subsequent figure legends is scientific notation, where for example, 1.5E+02 means 150.0.

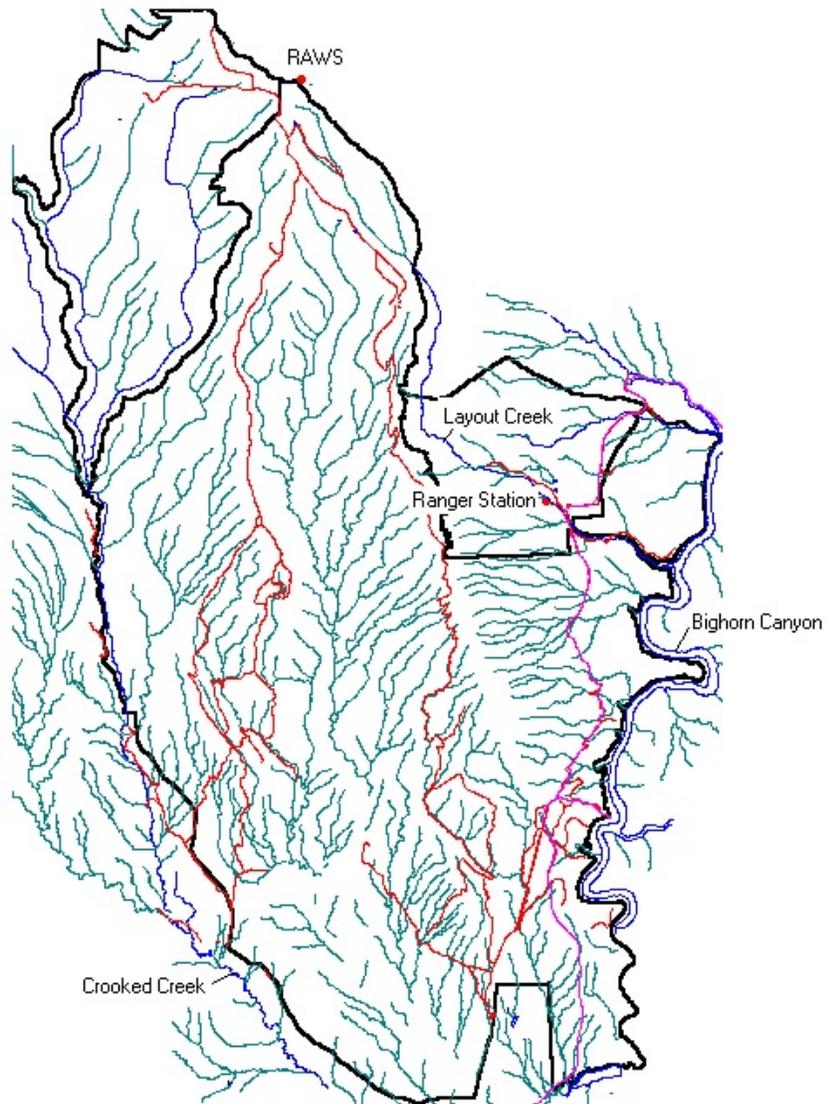


Figure 6. Perennial streams (blue), intermittent streams (blue-green), primary road (violet), secondary roads (red). The locations of the main weather station at the ranger station and the RAWS station at the top of the mountain are also shown.

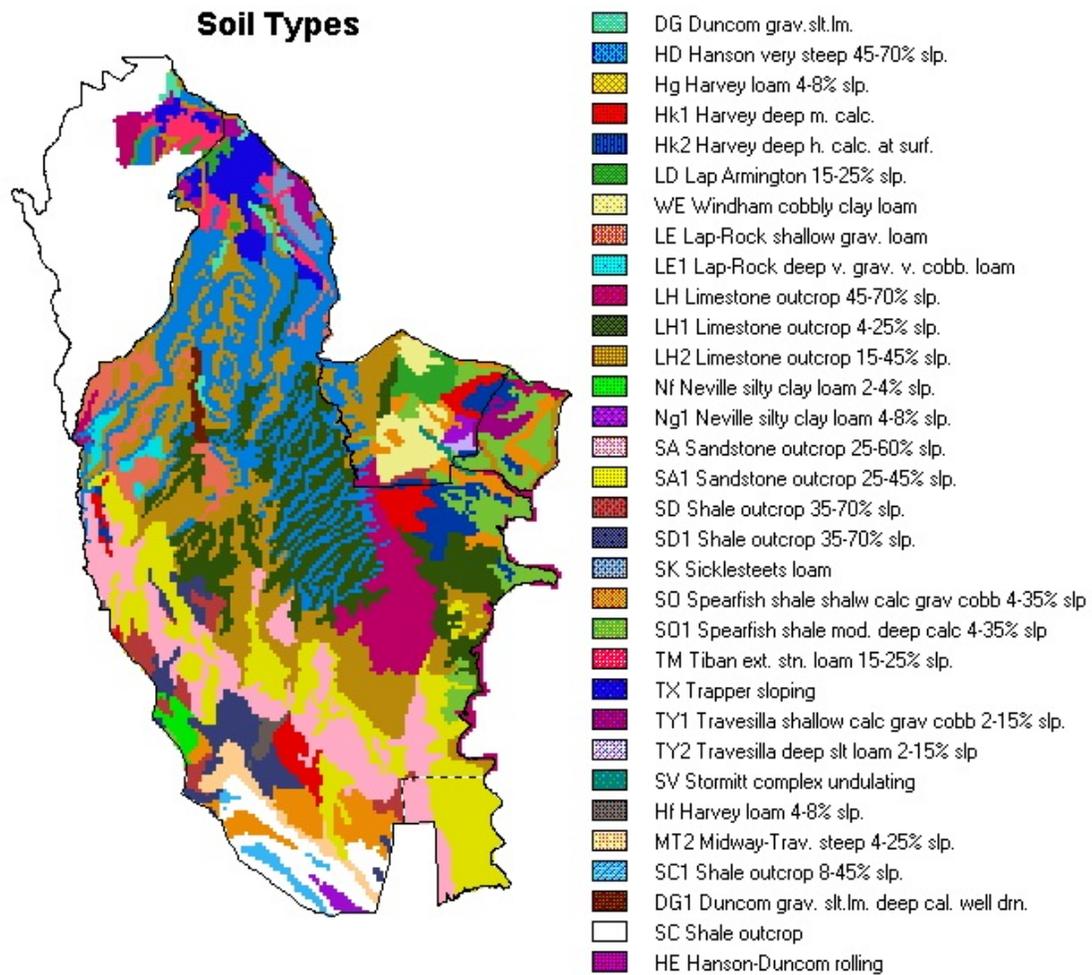


Figure 7. Soil types of the Pryor Mountain Wild Horse Range, and adjoining Sorenson Extension and USFS lands used by horses (based on Parker et al. [1975], with further subclassification by R. Mitchell, US BLM). Area southeast of dashed line is estimated.

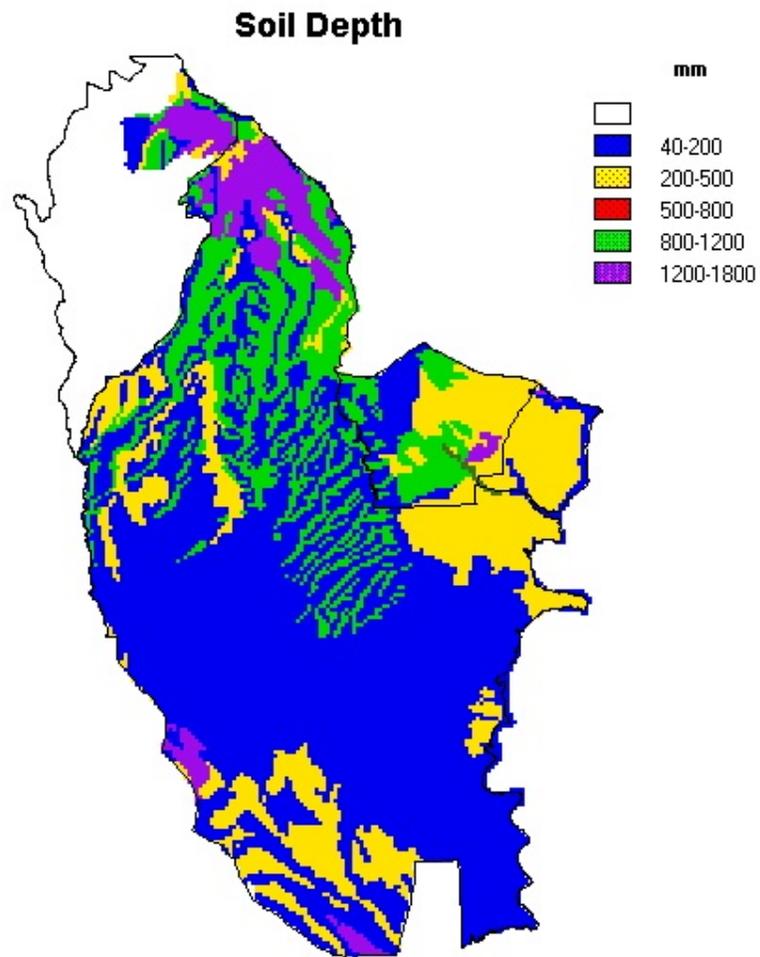


Figure 8. Depth of soil, in soil surveys, also used as the maximum herbaceous rooting depth in the model.

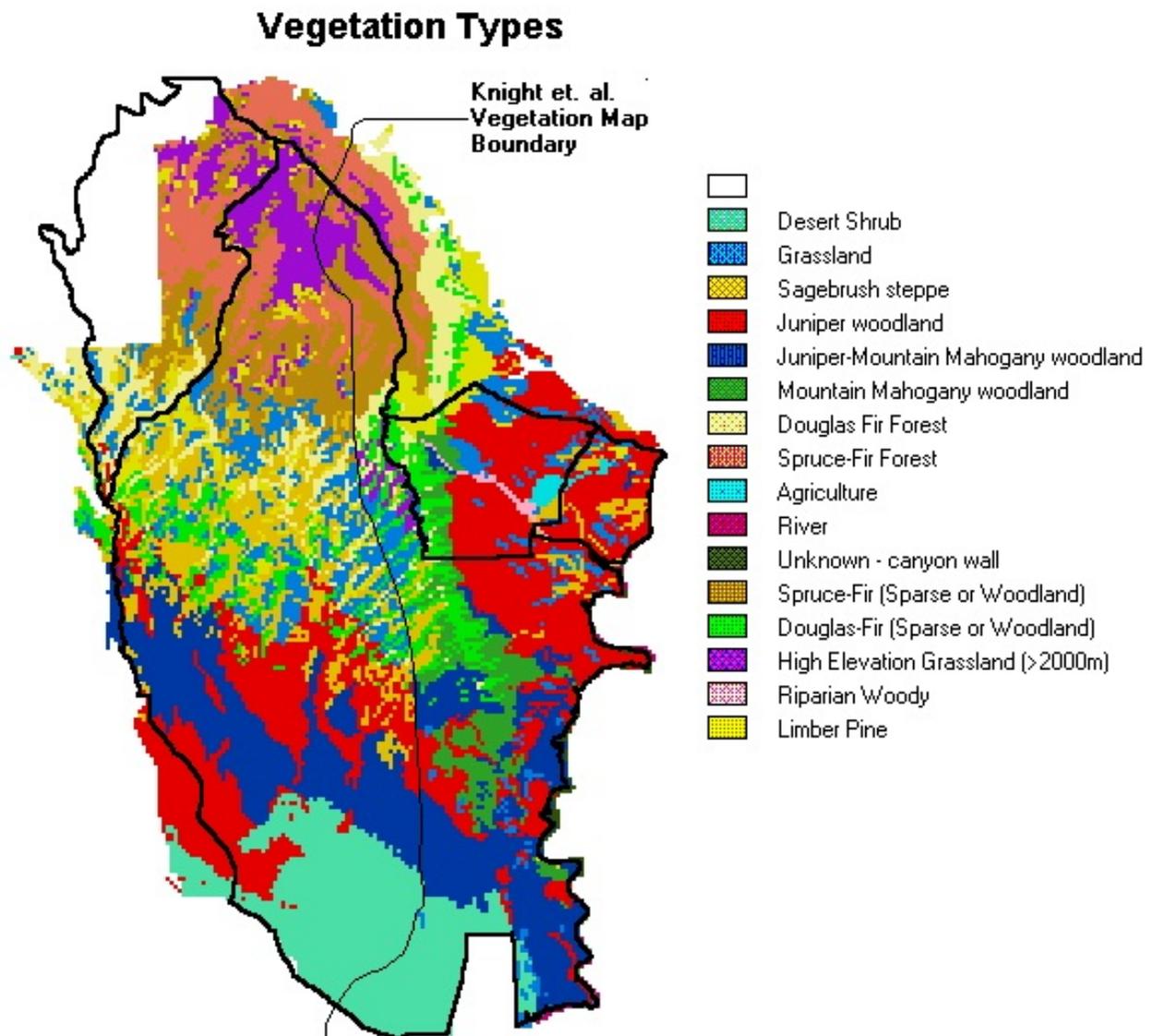


Figure 9. Vegetation types of the PMWHR study area. Areas to the east of the thin line were mapped by Knight et al. (1987). Areas to the west of the line are estimated from soil type and elevation (see text), with grassland vs. forested and woodland types derived from USGS quad sheets.

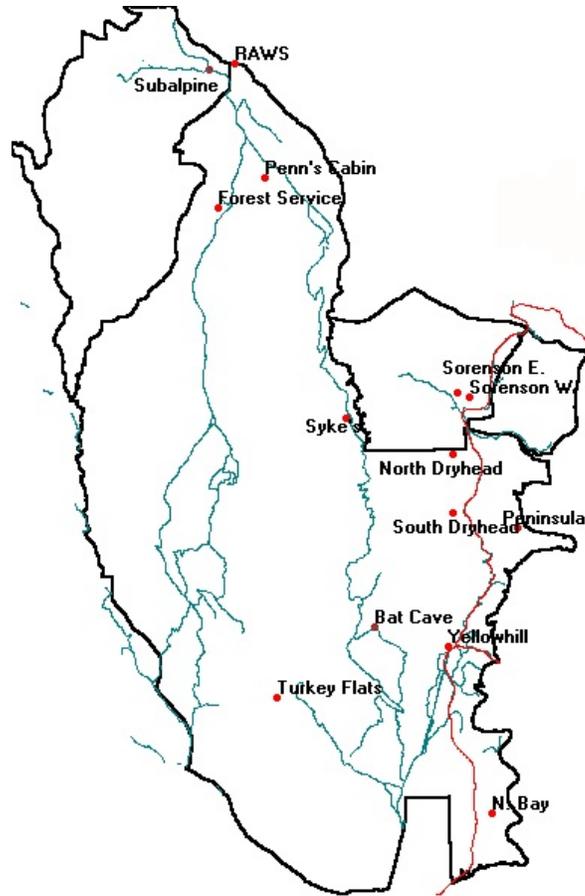


Figure 10. Locations of plant biomass sampling sites (points), primary roads (red line), and secondary roads (blue lines).

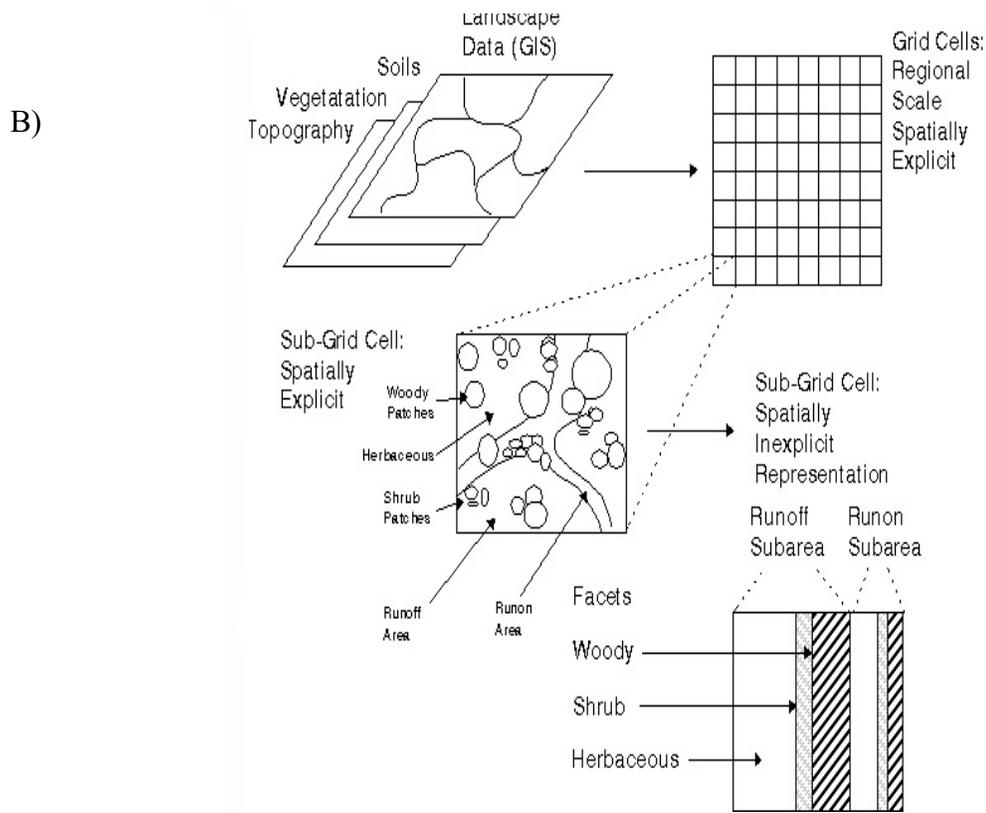
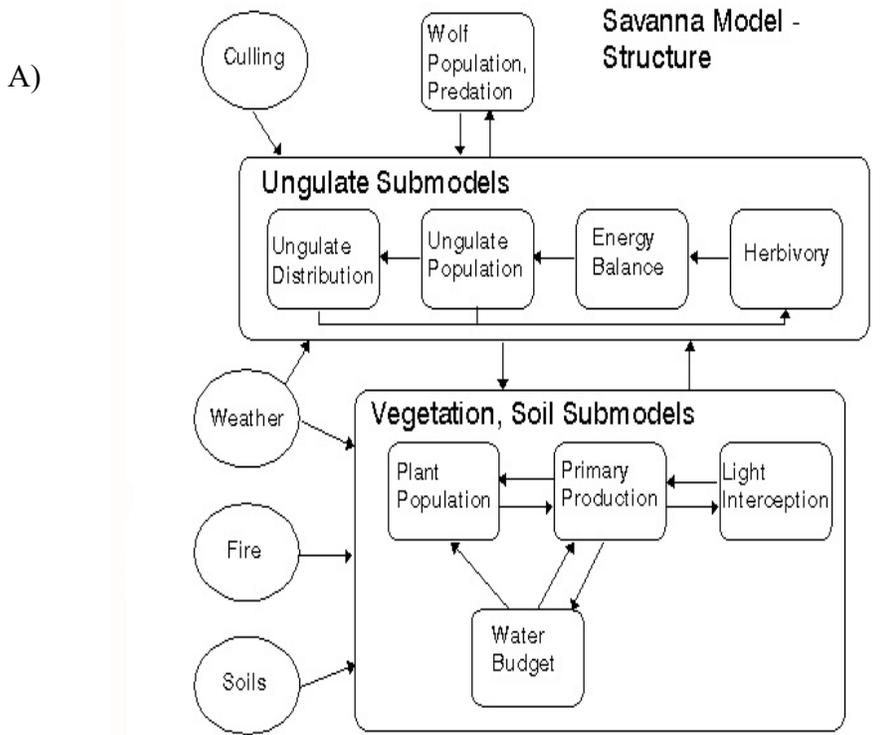


Figure 11. (A) Primary components of the Savanna model; (B) spatial structure of the Savanna model.

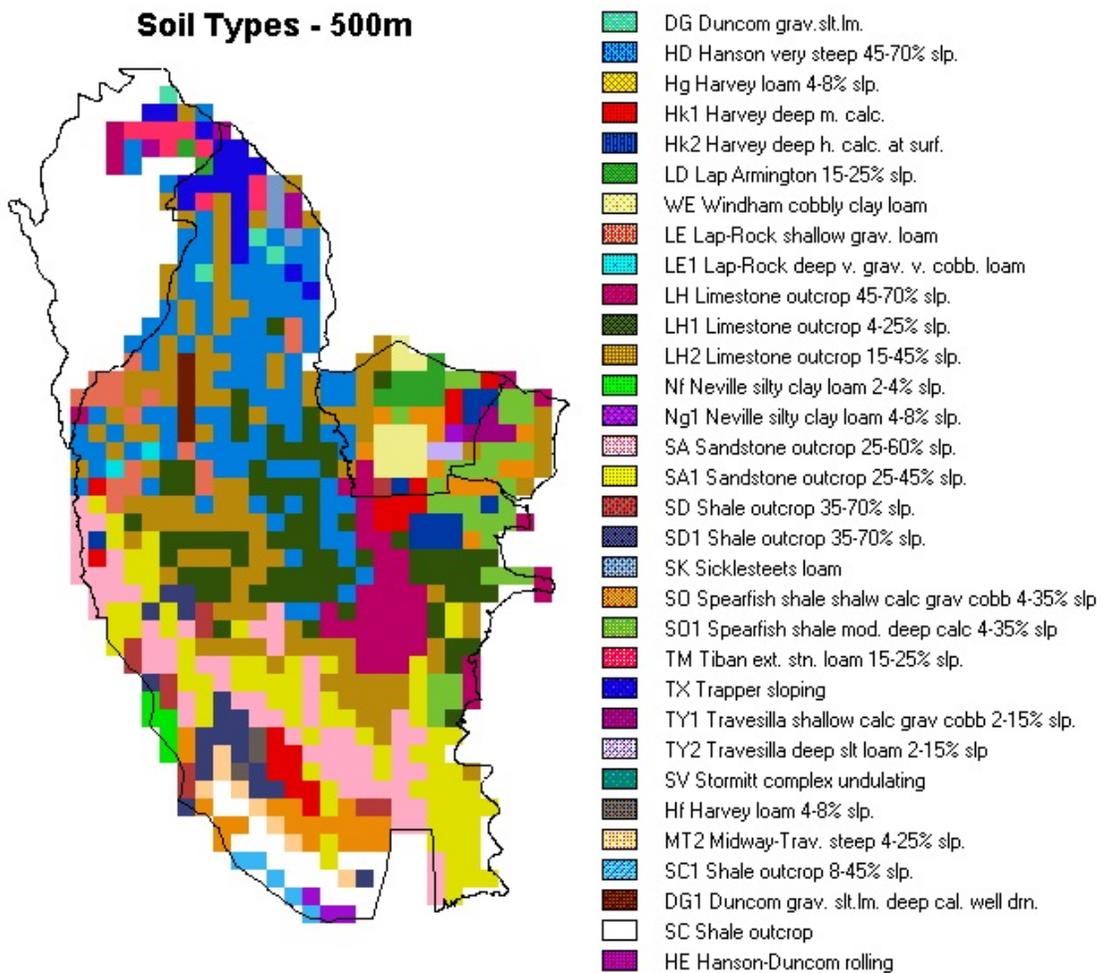


Figure 12. Soil types shown at the 500 m resolution used in model runs.

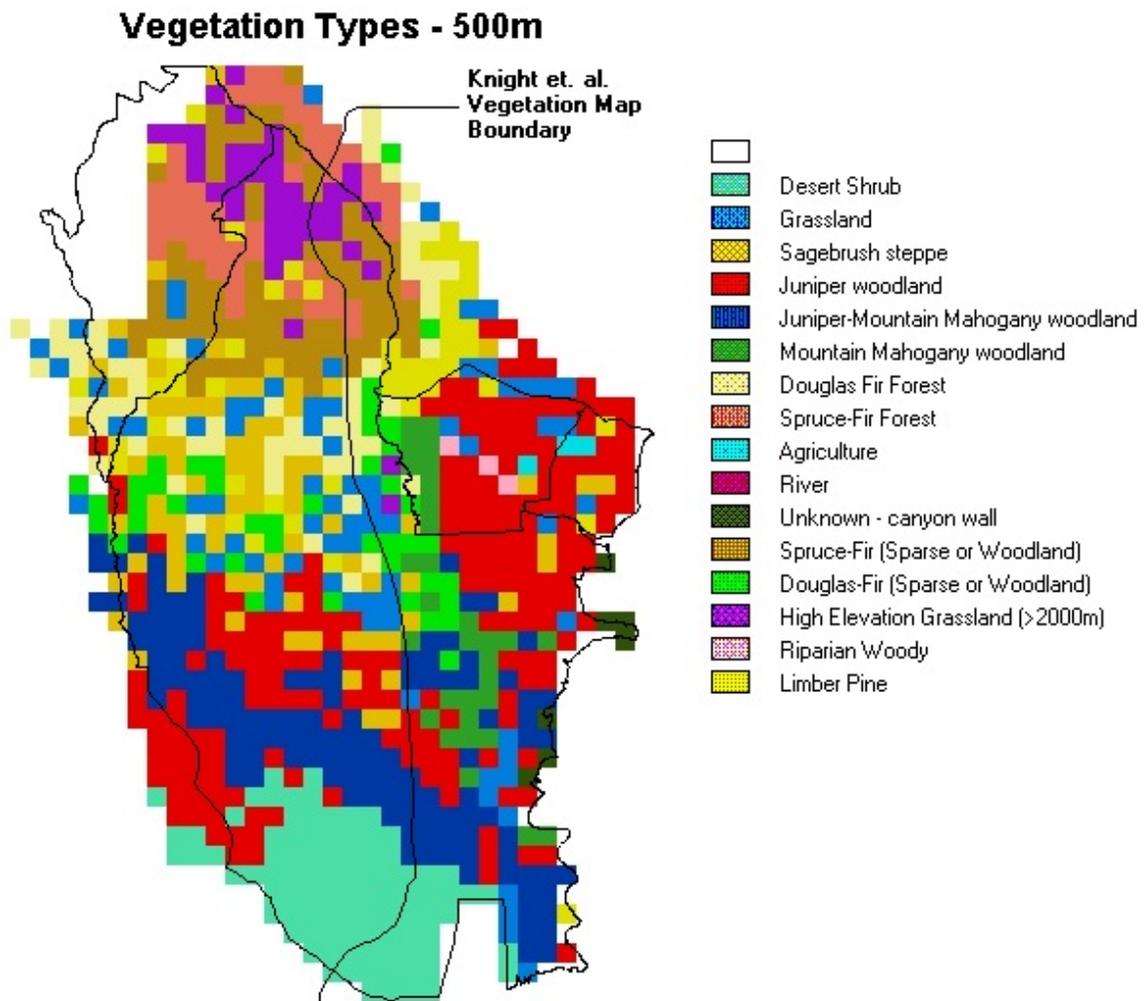


Figure 13. Vegetation types at the 500 m resolution used in model runs.

Ground-based Horse Distributions 1996-1998

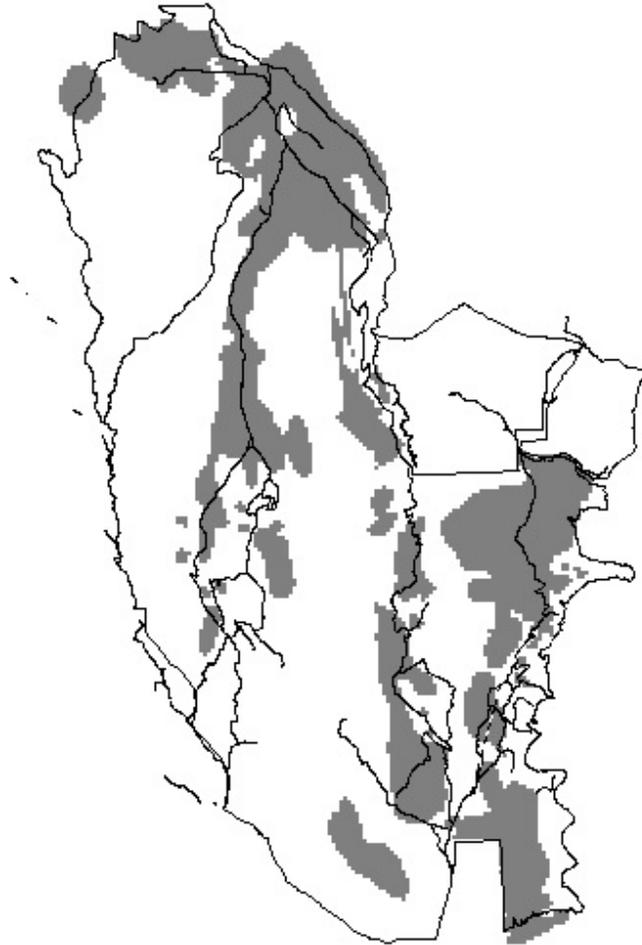


Figure 14. Horse distributions during non-winter months 1996-1998, as observed from the ground (L. Coates-Markel, BLM, personal communication). Roads are shown. Map is a composite of monthly observations during the period.

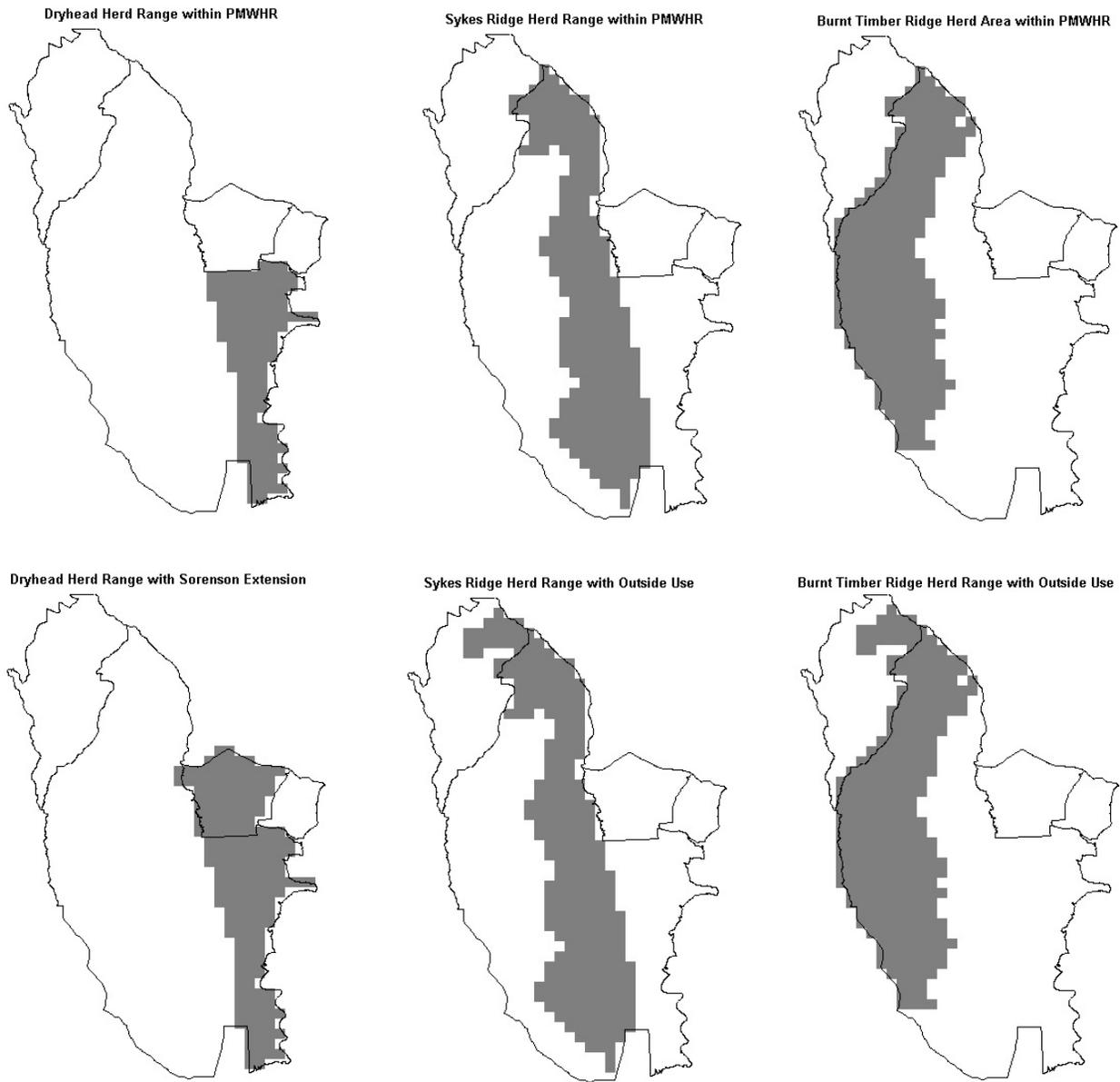


Figure 15. Horse herd ranges used in the model. Top row indicates ranges confined to the designated PMWHR. Bottom row includes USFS lands outside the PMWHR. The Sorenson extension was used during winters only from 1977-1979, and yearlong from 1980-1992. USFS land at the top of the mountain was used from 1991-1997.

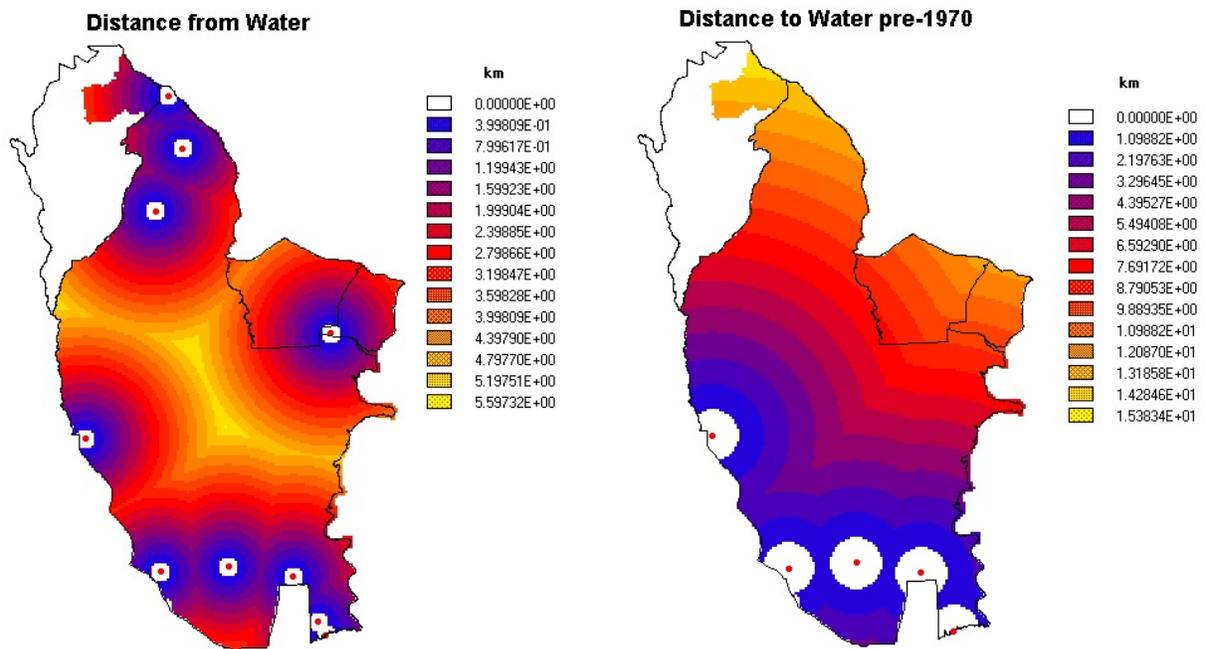


Figure 16. Distance to water after and before the 1970's. Includes only water sources available to horses inside the PMWHR.

Assumed Pre-PMWHR Horse Range



Figure 17. Assumed horse range for simulation experiments 1950-1969.

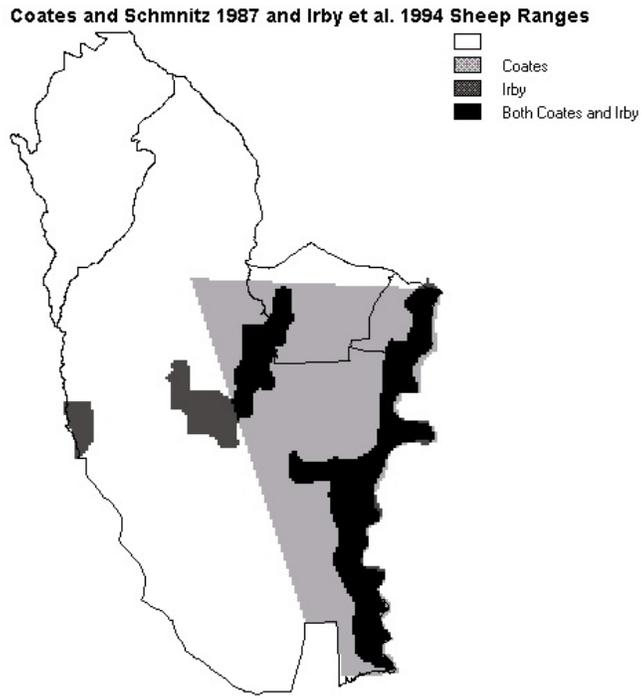


Figure 18. Sheep range extent observed by Coates and Schemnitz in 1987 in relation to that observed by Irby et al. 1994.

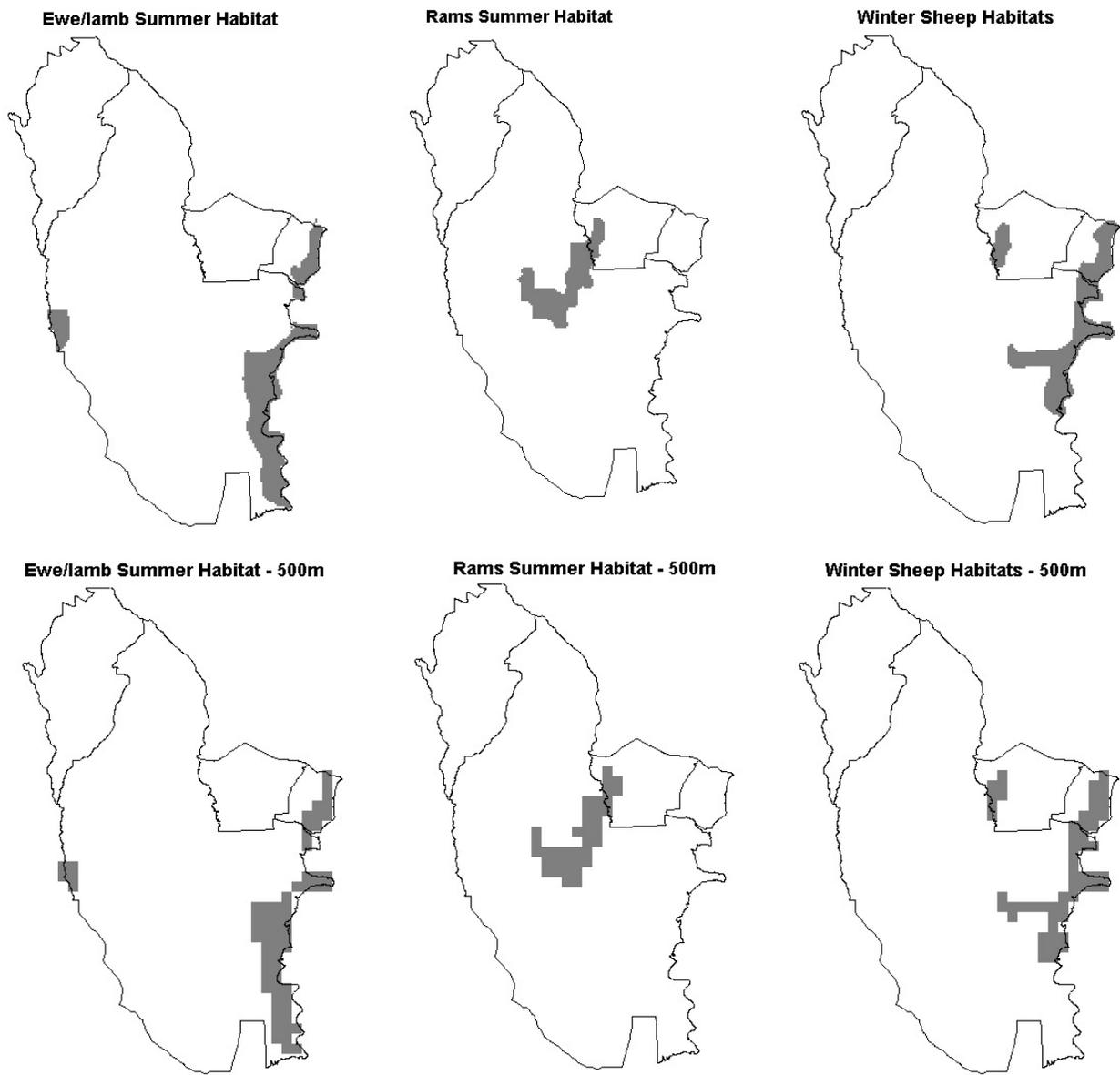


Figure 19. Sheep habitats or ranges observed by Kissel (1997) and the 500 m approximations used in model runs.

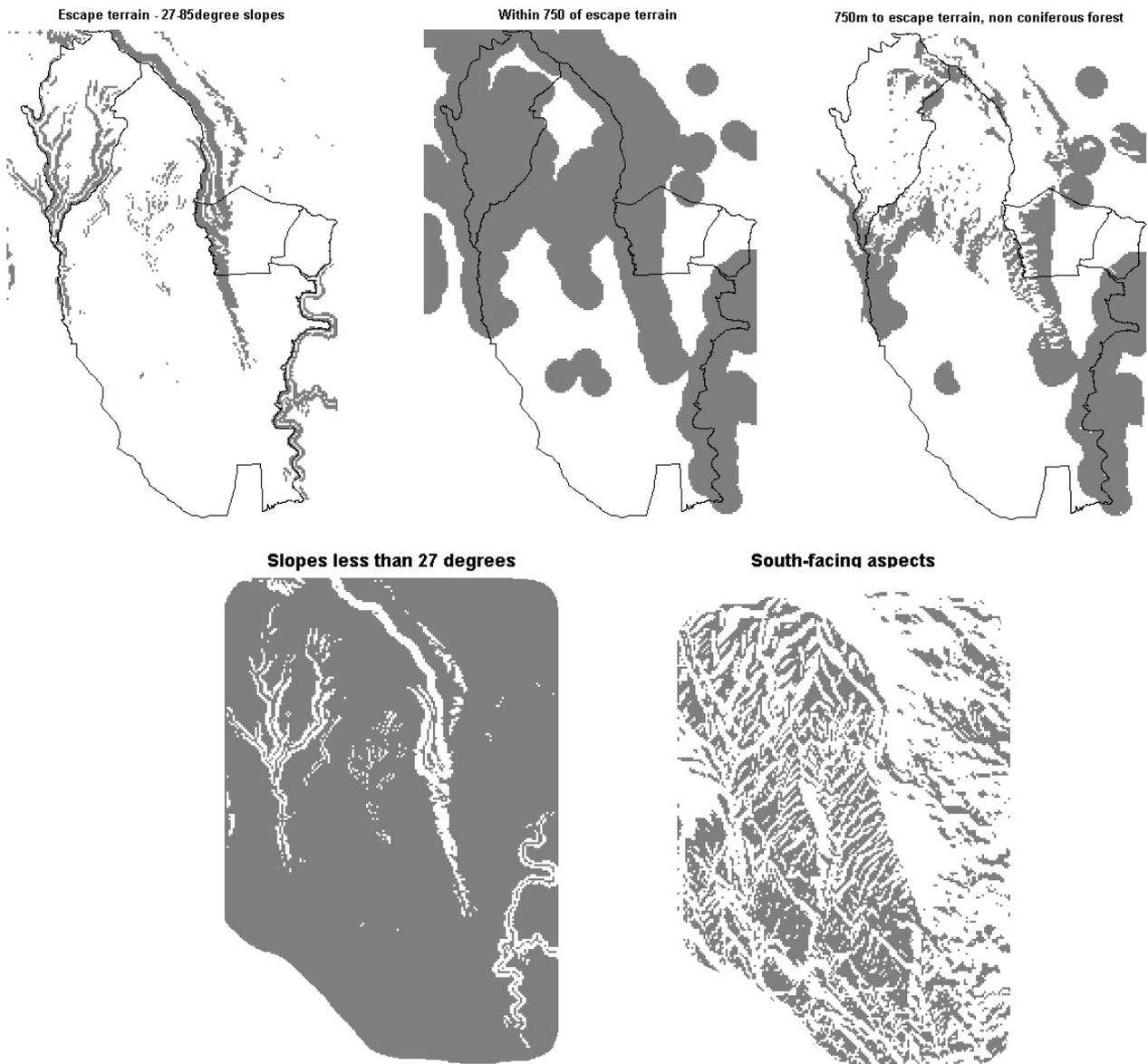


Figure 20. GIS layers used in modeling sheep habitats.

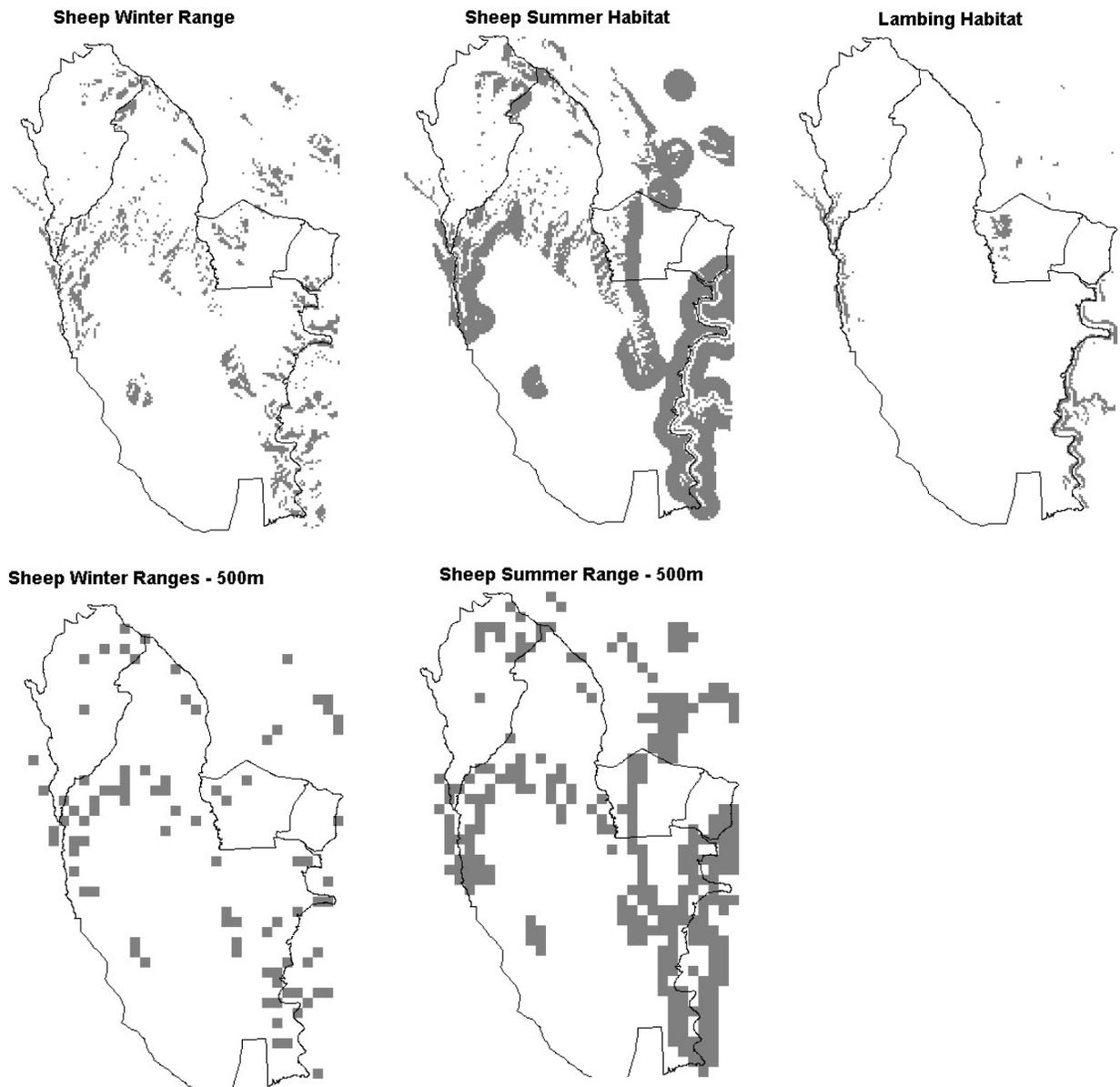


Figure 21. Sheep habitat modeled based upon Johnson and Swift (1995) and Smith et al. (1991), and the 500m resolution approximations used in model runs.