Appendix E -- Calculation of Big Game Forage Demand

Big game numbers used to set forage demand were supplied by the State of Oregon, Department of Fish and Wildlife, and are based on State-approved management objectives (MO's) and benchmark levels by seasons of use and grazing allotment.

Forage demand for bighorn sheep was not calculated because specific locations of bighorn use in LCGMA at the pasture level were not obtainable.

Mathematical Calculations Used for Determining Wildlife Forage Demand
Big game forage demand in the SEORMP/FEIS, Appendix E, Allotment Summaries, was established by using the three mathematical calculations described below. These calculations are consistent with the "Three Rivers Resource Management Plan" (1991) in Burns District, and they use locally adapted studies on big game dietary overlap cited in Vavra and Sneva (1978).

1) Land ownership differences - The percentage of the grazing allotment administered by BLM was multiplied by the MO/benchmark level number to determine the number of big game supported on public land versus other ownerships such as state or private.

2) Body mass differences - The number of big game at MO/benchmark levels supported on BLM lands was then divided by a factor of 5.3 (for deer), 7.0 (for pronghorn), and 2.4 (for elk) to determine the number of each species that would potentially consume forage equal to one AUM, which is defined as 800 pounds of air dry forage. The result of this calculation is referred to as the *unadjusted forage demand* because it does not factor the dietary differences between livestock and big game.

3) Dietary preference differences - The unadjusted forage demand was then multiplied by the percent dietary overlap for each big game species (0.18 for deer, 0.10 for antelope, and 0.70 for elk) to correct for the differences in forage preferences between livestock and big game. The result is called *adjusted forage demand* or *competitive AUM's* . For example, the adjusted big game forage demand (competitive AUM's) needed to support 50 mule deer on an allotment with 80 percent public land over a period of 12 months would be 86.4 AUM's (50 deer H 12 months H 18 percent dietary overlap H 80 percent public land).