

## **APPENDIX 'C'**

**The process described in the Nevada Strategy  
for designating sage grouse PMUs**

**What IS a "Population Management Unit"?**

*Sage Grouse populations in Nevada have been traditionally managed and evaluated on a county by county basis for more than a century. This method of delineation recognized the county political subdivisions during the formative years of statehood and carried forward with the early State Fish and Game Commissions. The county-based model for management was adequate for most of Nevada's Sage Grouse management needs until the 1990's.*

*The emerging need to begin aggressive conservation measures for Nevada's Sage Grouse requires the development of more refined management units for the species. These new units are needed to better describe populations, the factors that influence them, prescriptions for management and the evaluation of those treatments.*

*The Division of Wildlife and University of Nevada, Reno developed a series of Population Management Units (PMU's) with the intent to manage populations with more precision. Sage Grouse in Nevada are distributed in an array of geographical configurations. Some populations, particularly on the fringe of their range are easy to describe. In these populations the distribution of sagebrush defines distribution. However, the delineation of many populations in rather large expanses of contiguous habitat are more problematic. Some immigration or emigration between these populations is suspected to occur or has been documented.*

*NDOW and UNR built a statewide distribution map of Sage Grouse leks from data collected by the Division of Wildlife. This map provided a base map for the formation of the PMU's. The lek map demonstrated that Sage Grouse leks are clumped in their distribution. These aggregations of leks were theorized to be centers of distribution for a population. It was assumed that leks and the surrounding habitat represented the best habitat in that area. Valleys and mountains of less suitable habitat were considered to be potential boundaries for populations.*

*A preliminary effort to describe PMU's used just the distribution and configuration of leks on the landscape. Once this preliminary map was drawn, Sage Grouse seasonal habitat was overlaid and the map was redrawn, adjusting to and including the occupied habitat. Sage Grouse telemetry data for selected populations further refined the limits of the PMUs. The second generation map was then sent to NDOW field biologists for review. Upon review the map was redrawn a final time.*

*Each PMU was given a common name that described the population. These names were reviewed by field biologists and modified as appropriate. Preliminary population numbers were also associated with each population. These numbers provide a starting point for population estimate refinement.*

*The process of developing PMUs is an evolutionary process as we learn more about each population. It is expected that units will adjust in boundaries, will consolidate or fragment as knowledge is gained during the implementation of this conservation strategy. The "PMU" is an artificially-generated tool for defining and monitoring Sage Grouse distribution -- the concept cannot be manipulated artificially to compensate for the loss of individual PMU's. In other words, a large, healthy PMU will not be split arbitrarily into two units for the expressed purpose of maintaining an artificial target upon loss of a population within a PMU somewhere else. Adjustments in PMU's will be based only on adjustments in our knowledge of how the birds interact with the landscape and one another.*

*Sage Grouse population management units are shown in Appendix 12. Preliminary population estimates and PMU names are shown in the accompanying table in the Appendix.*