

## *Appendix B – Wildness of the Southwest as Mapped by Aplet et al (2000)*

The following are maps of the Southwest Region depict wildness values as calculated by Aplet et al. The first map is at a larger scale and shows the Cibola National Forest mountain units in relationship to protected lands. The second map is at a smaller scale and shows more clearly the wildness values of the Cibola National Forest mountain units.

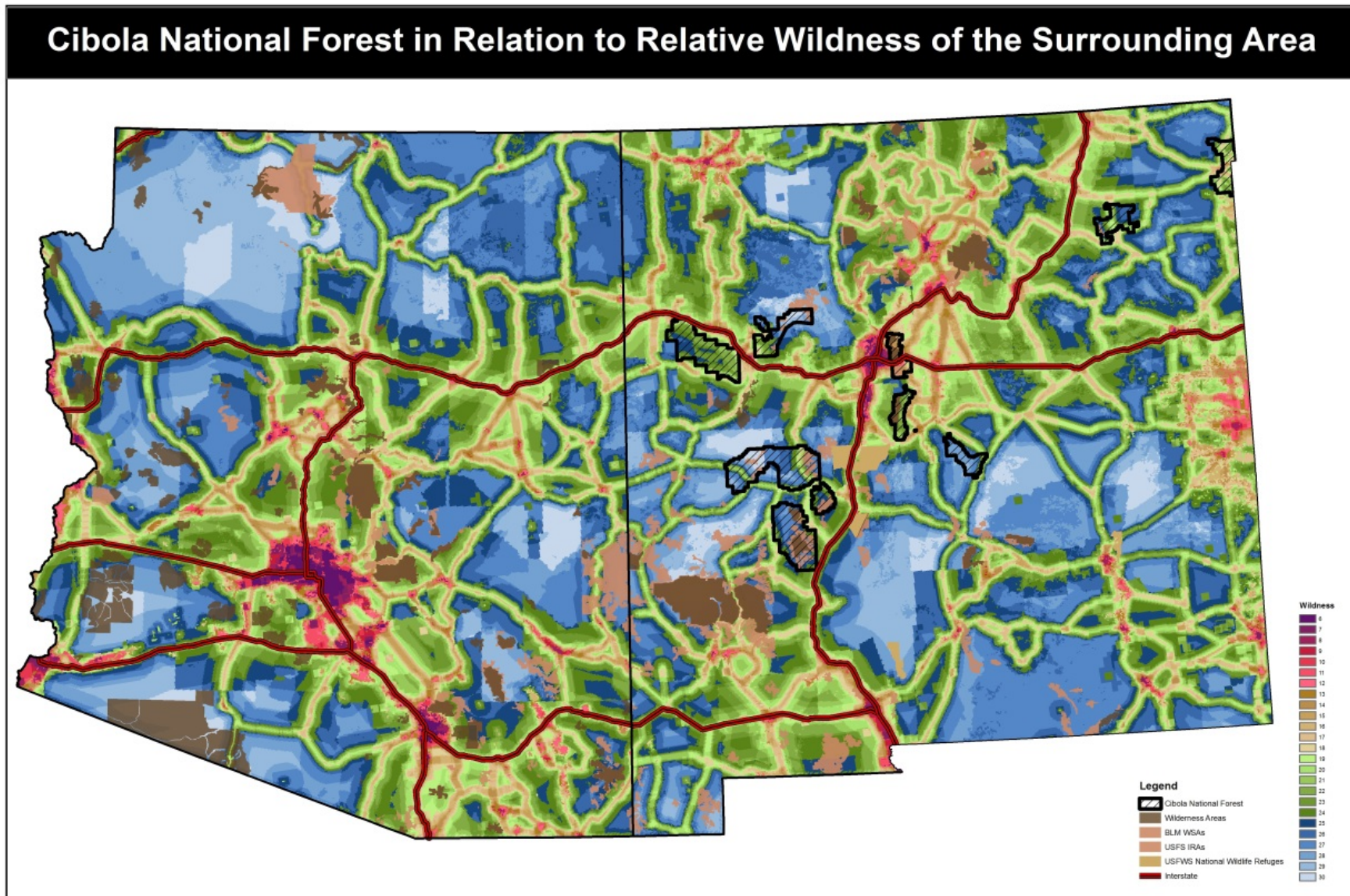
### **Summary of Aplet's Relative Wildness.**

Land can be described in a space defined by two fundamental qualities: naturalness and freedom. The axis of naturalness describes the wholeness of the ecosystem relative to a historical norm, while the axis of freedom describes the degree to which land remains outside of human control. Some land can be natural but not free, and vice versa, but the most natural and free are the most wild — they are the lands we recognize as wilderness. Aplet (2000) developed a sophisticated tool for assessing wilderness in the United States, entitled *Indicators of Wildness: Using Attributes of the Land to Assess the Context of Wilderness*. The concepts of naturalness and freedom were illustrated through the mapping of indicators of wildness, derived from readily available data in a Geographic Information System. Although Aplet's wildness map is not perfect—it does not depict every landscape feature one might regard as important to wildness, for example—it is the best available tool for consistently comparing wildness values across a region and across the country. While various organizations have used slightly different wildness indices, the attributes are largely based on proxies of wildness characteristics. In Aplet's model, the “wildness index” is the sum of the following six attributes, each score ranging from 1 to 5, with the total score per 1 km<sup>2</sup> cell ranging from 6 to 30.

- A. Natural composition (1 = least natural; 5 = most natural), which takes into account land use/land cover
- B. Unaltered structure (1 = most altered; 5 = least altered), which takes into account roads, land use/land cover, populated places, airports, and dams
- C. Purity (1 = least pure; 5 = most pure), which takes into account city lights at night, superfund, nuclear reactor, and other EPA regulated sites
- D. Solitude (1 = lowest solitude; 5 = highest solitude), which takes into account resident population density from US Census
- E. Remoteness (1 = least remote; 5 = most remote), which takes into account roads
- F. Uncontrolled processes (1 = most controlled; 5 = least controlled), which takes into account roads (roadless patch size and shape) and dams

Aplet's nation-wide relative wildness assessment was rescaled to measure relative wildness within Arizona and New Mexico. The proposed recommended wilderness areas are not only some of the wildest lands in the country but in the southwest as well. This is impressive given the massive amount of wildlands acreage in northern Arizona and the Gila National Forest.

Map 1.





Map 2.

