Appendix K-2

Figure Captions

Fig K1. Historic and current distribution of wildlife habitats within an example subwatershed (6-HUC 170601040901) located in the Upper Grande Ronde subbasin, Blue Mountains province, in northeastern Oregon. Note the major change from shrub-steppe to agriculture and Ponderosa pine forest. Such change is typical for much of the interior Columbia Basin.

Fig. K2. Changes in area of wildlife habitats for the example subwatershed shown in Figure K1, from historic to current time periods. Note great decreases in shrub-steppe and increases in agriculture and Ponderosa pine forest types.

Fig. K3. Changes in area, highlighting differences in overall proportion, of wildlife habitats for the example subwatershed shown in Figure K1, from historic to current time periods. Although the information in this figure is redundant with that presented in Figure K2 and Table K1, it helps emphasize the proportional changes in wildlife habitats.

Figs. K4a, K4b. Changes in functional redundancy (summed weighted values as described in the Appendix K text) for selected categories of key ecological functions (KEFs), for the example subwatershed, comparing historic to current time periods. Note the great increase in functional redundancy (mean number of wildlife species across all wildlife habitats) of the KEF categories of primary cavity excavation, secondary cavity use, and creating snags. These increased because of the increase in Ponderosa pine forest within this subwatershed (Figs. K1, K2, K3), with which the wildlife species bearing these KEF categories are associated. Likewise, note the decline in other KEF categories borne by wildlife species associated with the shrub-steppe wildlife habitat, namely burrow excavation, burrow use, and potentially improving soil structure and aeration by digging. These KEFs declined because of the great decline in native shrub-steppe habitat within this subwatershed.

Fig. K5. Levels of functional richness and mean functional redundancy for the example watershed, at historic and current time periods. Note that values of these two parameters remained virtually unchanged, although redundancy levels of the specific categories of key ecological functions changed (Figs. K4a, K4b). This suggests that when these two parameters show little change, attention should still be placed on how redundancy of specific KEFs change.

Fig. K6. GIS map showing changes in (summed weighted) functional redundancy of KEF category 5.1, "potentially improving soil structure and aeration by digging," comparing historic to current time periods. The map shows changes for each subwatershed, although it is best interpreted a broader scales, for instance, the major and consistent declines shown in the Willamette Valley, Columbia Basin, and Snake River Basin. Categories of changes are shaded by quartiles of subwatersheds with increases, decreases, or no change. For example, the greatest positive change represents the upper quartile (25% of all subwatersheds) with a positive change in functional redundancy values for this KEF; and this quartile represents an increase of 16.63% or greater in functional redundancy values.