

IV. Mapping of Oak Woodlands

To establish an effective oak woodland program that fulfills the 2004 General Plan policies for mitigation (Policy 7.4.4.4) and conservation (Policy 7.4.2.8) purposes, locations need to be identified that meet the Goals and Objectives presented in Section I of this plan. Areas for conservation easements need to possess the oak woodland habitat characteristics described in Section II (Natural Resource Values of Oak Woodlands). Furthermore, to develop an Option B fee, the potential locations of conservation lands need to be known to estimate the costs of acquisition.

Identifying and maintaining oak woodland corridors (OWC) between the PCAs are necessary for the long-term viability of the designated PCA oak woodland resources.

From the goals and objectives listed in Section I, this OWMP analyzed oak woodland habitats by:

- 1) using the best geographic information on oak woodlands that is currently available for the entire planning area,
- 2) considering oak woodland habitat evaluation criteria based on the adopted 2004 General Plan policies, and
- 3) completing a mapping process that is objective, replicable, and supportable for the intended purpose of identifying oak woodlands that will receive priority for the mitigation and conservation purposes of this OWMP.

The County mapping process concluded by identifying the PCAs and OWCs shown in Figure S-1. The mapping was conducted in three general phases:

- Phase 1 (Identifying Oak Woodland Resources) – Considering all oak woodland types in the study area, resource and habitat mapping criteria were considered, selected, and then applied. Large expanses of oak woodlands greater than or equal to (\geq) 500 acres were identified.
- Phase 2 (Prioritizing Conservation Areas) – Using parcel size information from the Phase I results, and land use designations from the 2004 General Plan, the large expanses were narrowed to those lands where: 1) oak woodland habitats would not likely undergo substantial fragmentation, and 2) oak woodland conservation would be largely consistent with the 2004 General Plan land use designations. These large expanses were classified as PCAs.
- Phase 3 (Connecting the PCAs) – Remnant pieces (mainly 40 acres and larger) of previously mapped large expanses were combined with perennial (year-round) stream locations to delineate corridors (OWCs) that interconnect the PCAs and secondarily interconnect with public lands (e.g., Eldorado National Forest). Establishing and maintaining future connectivity between the PCAs and public lands is considered necessary to avoid ‘isolation’ of the PCAs. Placing the corridors coincident with perennial streams meets several INRMP criteria for conserving important habitat, including aquatic environments, riparian habitat, and migration corridors for wildlife.

Figure S-1 is the result of dozens of mapping exercises and criteria. Overall, the approach was to start with the resource (oak woodlands) and then identify which areas would be most consistent with the policies and land use designations of the 2004 General Plan. The mapping is based on Geographic Information System (GIS) data available from State and County sources in the ESRI ArcMap environment. The data, processes, and many of the intermediate maps that led to Figure S-1 are described below and more fully in Appendix J.

A. Mapping/OWMP Study Boundary

The OWMP study area boundary is western El Dorado County below 4000-foot elevation. The County boundary shapefile was acquired from El Dorado County GIS. Elevation data was acquired from the USGS 30m Digital Elevation Model that was also supplied by the County GIS department. The County polygon was then clipped with the 4000-foot contour to produce the OWMP boundary layer.

B. Mapping Databases

The existing vegetation coverage is a mosaic of the USDA Forest Service (USFS) Remote Sensing Lab's (RSL) existing vegetation data (CALVEG) Tiles 19, 20, and 21. Information on the data can be found at: <http://www.fs.fed.us/r5/rsl/clearinghouse/gettiles.shtml>. This data was chosen as it has the highest resolution of any existing vegetation data that covered the entire OWMP study area. The tiles were merged and then clipped with the OWMP boundary layer to create vegetation coverage of the entire OWMP area.

Community Centers, Rural Regions, parcels, land use, and street centerlines are taken from the El Dorado County GIS department. The USFS boundary is from the USFS Pacific Southwest Region GIS Clearinghouse. The water bodies and hydrology layer is from the California Spatial Information Library (CaSIL).

C. Oak Woodland Resources

Figure IV-1 (FRAP CWHR Oak Woodland Types) displays a selection of the mosaic vegetation data that were determined to be "Oak Woodlands". This was achieved by a simple selection from RSL vegetation data where WHRTYPE = BOP, BOW, VOW, MHW, and MHC. VRI is not included as it does not appear in the data set for this region. The selected polygons were then exported as a new "Oak Woodlands" layer. Acreages were calculated and summarized for all CWHR types.

The oak woodlands shown in Figure IV-1 are based on 2002 data and are the same oak woodlands analyzed in the 2004 General Plan EIR. The acreages for each oak woodland type are shown on Figure IV-1 and in Table S-1.

D. Large Expanses of Oak Woodland

Large Expanses of Oak Woodland were created by dissolving the Oak Woodlands layer that removed boundaries between contiguous polygons. An acreage calculation was applied to the

new aggregate polygons and a selection of all polygons ≥ 500 acres was made. This selection was then exported to “Large Expanse of Oak Woodland” layer.

Large expanses of oak woodlands represent one of the criteria for defining important habitat under Policy 7.4.2.8. This first step is considered a resource-based approach to begin identifying areas that could be considered a priority for conservation or mitigation.

E. Mapping of Priority Conservation Areas

Several early attempts were made to create a PCA map. Models were used to narrow oak woodlands to those areas that would receive an increased conservation emphasis. Appendix J describes the modeling and mapping processes in greater detail.

PCAs are designed to be large expanses of oak woodland greater than 500 acres and coincident with parcels greater than 40 acres.

As the mapping progressed, an increasing effort was made to narrow PCAs to those areas that are most consistent with the 2004 General Plan land use designations. Because the General Plan concentrates land development within the Community Regions and Rural Centers (CR/RC) where oak woodland impacts and fragmentation are most likely, potential PCA designations were removed from these areas. The distribution of PCAs with CR/RC was then reviewed. For public discussion and planning consideration, the Important Biological Corridors (IBC) layer was added to this map to assess the geographic relationship of IBCs to PCAs.

A subsequent mapping iteration of PCAs was developed by County staff and presented at the June 25, 2007 Board of Supervisors workshop on the status of the OWMP mapping. For this particular map, additional PCAs were removed where the 2004 General Plan designates Low Density Residential (LDR) land use.

For the final map, Figure S-1, some data clean-up and further analysis was needed to link the PCAs. PCAs are designed to be large expanses of oak woodland greater than 500 acres and coincident with parcels greater than 40 acres. However, the above ‘filtering’ left many smaller fragments of PCAs. Acreage calculations were therefore made on each remaining block of oak woodland and the blocks were grouped by size class. Isolated fragments less than 10 acres were removed from subsequent analysis and areas greater than or equal to 500 acres were selected to be the final proposed “Priority Conservation Areas” for the Public Review Draft OWMP. This left many fragments of former PCA-category oak woodlands in the 10 to 499 acre range, which could represent viable habitat units for linking or otherwise maintaining connectivity between the PCAs.

F. Oak Woodland Corridors

With the final set of PCAs identified, the next step was to create habitat connectivity between the dispersed PCAs using the smaller (10 to 499 acre) fragments of remaining oak woodlands. This included linking PCAs in a north-south direction across Highway 50. The following criteria and hierarchy were used to interconnect the PCAs using the residual fragments of earlier mapped PCAs:

- 1) Land along perennial streams (identified from ESRI data created by USGS, U.S. Environmental Protection Agency, and ESRI), and/or
- 2) Land containing the largest of the 10-499 acre PCA fragments (identified above), or
- 3) Other land classified as oak woodland with parcels generally greater than 10 acres, or
- 4) Public lands managed as open space with or without oak woodlands, or
- 5) If none of the above existed, non-oak woodland adjacent to oak woodland.

Connections were designed to incorporate and connect with State and Federal lands where possible. A minimum of two connections or corridors between PCAs were established wherever possible for minimum connectivity, and additional connections were identified using the above criteria to support oak woodland habitat values. Community Regions, Rural Centers, and many areas with potential land use conflicts, such as Apple Hill, were avoided wherever possible.

Placing the corridors along year-round streams meets several INRMP criteria for conserving important habitat including aquatic environments, riparian habitat, and migration corridors for wildlife.

The north-south connections across Highway 50 at Weber Creek and at Dry/Slate Creek were chosen using slightly different criteria. These areas near Highway 50 include land use designations that were previously excluded when mapping PCAs, but connections between areas north and south of Highway 50 cannot avoid all small parcels and higher density land uses. The Weber Creek corridor is facilitated by the Highway 50 bridge that provides an undercrossing for wildlife and vegetation dispersal. The primary criteria for the Weber Creek corridor are oak woodlands along the creek and parcels 5 acres and larger. The other north-south crossing, along Dry/Slate Creek, has potential as a future wildlife undercrossing of Highway 50. The corridor along Dry/Slate Creek would follow the perennial stream course through parcels of at least 5 acres where possible.

Figure S-1 displays the final product of the above mapping exercises and processes that are more fully described in Appendix J. All of the OWCs that connect the PCAs were manually digitized using the criteria above and are not intended to follow property or jurisdictional boundaries. The locations of OWCs are approximate and intended to serve as initial corridors to receive greater study in the INRMP process. The titles of the OWCs identified on Figure S-1 are shown on Table S-3.