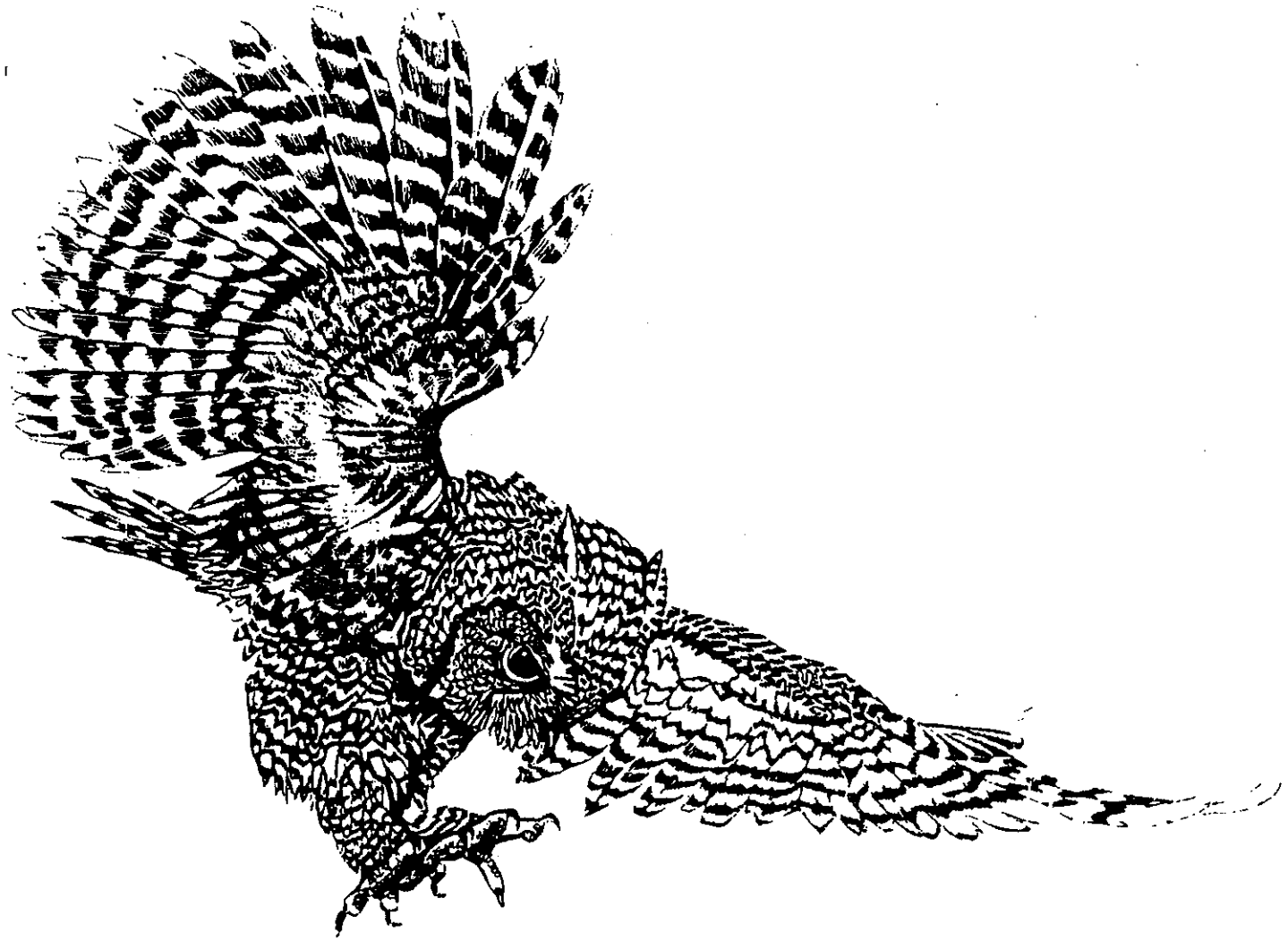

TUOLUMNE COUNTY WILDLIFE PROJECT

WILDLIFE HANDBOOK

TUOLUMNE COUNTY WILDLIFE INVENTORY AND EVALUATION PROJECT

Adopted by the Board of Supervisors, November 2, 1987
Resolution No. 303-87

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CHAPTER I

INTRODUCTION

A. Purpose of the Wildlife Handbook

This Wildlife Handbook is designed to assist County planning staff in evaluating impacts of proposed projects on wildlife, developing fair and consistent mitigation measures, and monitoring these impacts and mitigation measures over time. Designed to accompany a set of 20 Wildlife Maps, it will enable planners to use those maps, in conjunction with other data and site visits, to make effective decisions involving wildlife. More specifically, the handbook specifies priorities and reasonable objectives for wildlife protection in the County, It then presents a practical approach for developing mitigation measures that will help to achieve those objectives. This is just one approach that can be used by developers in complying with the California Environmental Quality Act (CEQA) and other related State and Federal regulations concerning potential impacts on biological resources. The developer has the option to use the contents of this handbook in evaluating such impacts associated with the proposed project and in developing appropriate mitigation measures or to perform a site and project specific study to determine potential impacts and, if necessary, to formulate a mitigation plan for those impacts in accordance with applicable State and Federal law.

B. Wildlife Project: General Approach

Holton Associates' approach consisted of three phases. In the initial phase HA compiled existing information on the County's wildlife from all available sources. A major task was to identify which aerial photographs to obtain for mapping the 300,000+ acre study area. For areas with no recent photos of appropriate quality, HA prepared specifications for new photos to be flown by an independent contractor. Finally, HA submitted a draft study plan to the Steering Committee, other County officials, and interested citizens, and revised the plan in response to their comments.

The second phase was devoted to mapping the target wildlife areas listed in the study plan, as well as common habitat types. Much of this task relied on aerial photography, supplemented by other available information. Field work focused on the target habitats located on "developable" lands, thus excluding Williamson Act and Timber Preserve lands, where development is not expected in the near future.

In the third phase, HA developed County wildlife policies and measures for

implementing them, working closely with the Steering Committee and utilizing the data base provided by the first two phases. Specifically, HA (1) recommended wildlife policies and implementation measures for the General Plan, (2) developed mitigation measures for impacts on each type of wildlife area, (3) developed a monitoring program, (4) produced this handbook, which contains the first three items, as well as procedures for using the Wildlife maps (and related data) in evaluating individual projects, and (5) suggested further actions the County could initiate to protect and enhance its wildlife resources.

C. Wildlife Project: Study Area

The study area included all the private lands in the County, including private inholdings in the Stanislaus National Forest, but not in Yosemite National Park. Mapping of wildlife resources was confined to the portions of the study area included on the 20 General Plan quad maps provided by the Planning Department. For portions of the study area outside these 20 quads, HA inventoried the important wildlife areas and provided a list noting their locations. Field work was confined to the developable lands, which are defined as all lands in the study area except for Williamson Act and Timber Preserve lands.

D. Overview of the Wildlife Handbook

The handbook contains the following major elements:

- Wildlife Mapping and Inventory (Chapter II): the results of the wildlife mapping and inventory, as well as the rationale and methods for these tasks. This chapter describes the types of wildlife areas that were mapped and the other wildlife data that were collected.

- Wildlife Mitigation Measures (Chapter III): the suggested goals and priorities for wildlife mitigation in the County, types of impacts to be mitigated, principles for selecting and implementing mitigation measures, and specific mitigation measures for each type of wildlife impact.

- Process for Evaluating Wildlife Impacts and Assigning Mitigation Measures for Individual Projects (Chapter IV): a step-by-step process for planners to use. This chapter explains how to use the maps and inventory data, conduct field evaluations, and determine when professional assistance is required. It includes a decision system for wildlife evaluations and a Wildlife Evaluation Form for site visits.

- Wildlife Monitoring Program (Chapter V): recommendations for assessing the success or failure of mitigation measures for individual projects, as well as general approaches to mitigation. This chapter also suggests how to keep the maps and inventory up-to-date and how to monitor cumulative impacts on wildlife.

- Wildlife Policies and Implementation Measures (Appendix A): recommended for inclusion in the General Plan. These policies provide the basis for implementing all other aspects of the wildlife project.

CHAPTER II

WILDLIFE MAPPING AND INVENTORY

Contents of Chapter II

A. Use of Maps and Inventory

HA prepared wildlife maps and compiled all available data on wildlife, fish, and their habitats on private lands in Tuolumne County to help the County make more effective decisions regarding wildlife. This expanded data base will make it possible to adopt priorities and appropriate levels of protection for various types of wildlife areas, consistent with the reality of continued development. It will permit the County to provide strong protection for the most valuable wildlife areas and attempt to channel development into the less valuable areas. In addition, the maps will allow landowners, developers, and planners to predict the constraints to development posed by wildlife resources on specific parcels; however, developers have the option to use this data in evaluating potential impacts to wildlife and other biological resources associated with proposed projects and in developing appropriate mitigation measures or to prepare a site specific study in accordance with applicable State and Federal law. Finally, it will make possible a more consistent wildlife mitigation policy and clarify the protections required under the California Environmental Quality Act (CEQA).

B. General Approach

HA first conducted a preliminary review of pertinent wildlife information available in the literature and in agency files. The next step was to recommend the types of wildlife habitats and wildlife species to include on the maps and to present this information in a draft study plan. After review by the public and the Steering Committee, HA finalized the plan and conducted the inventory and mapping.

Based on the preliminary literature review, HA proposed that "COMMON HABITATS", "TARGET HABITATS", and "TARGET WILDLIFE USE-AREAS" be mapped (see definitions below). The habitats and use-areas finally approved for mapping are listed in Tables II-1, II-3, and II-4. HA mapped COMMON HABITATS because this information can be useful in making general predictions about the wildlife value of a site and the species likely to occur there. TARGET HABITATS and TARGET WILDLIFE USE-AREAS are areas that deserve special protection of some kind.

It should be noted that a large project could have significant impacts on common species that are not included on the target lists. Similarly, dense concentrations of a common species could be affected significantly by even a relatively small project. Such wildlife areas must be considered on a case-by-case basis.

COMMON AND TARGET HABITATS were mapped primarily from aerial photos, while information on TARGET-USE-AREAS (areas known to be used by TARGET SPECIES) was obtained from published and unpublished reports, agency files, and

data provided by various cooperators.

With the assistance of the Planning Department, HA compiled a list of local residents and outside experts who are particularly familiar with the County's wildlife. HA contacted most of these people distributed Report Forms (see Appendix F), maps, and lists of TARGET HABITATS and USE-AREAS to the many who offered to provide data. All data contributed by cooperators was screened for accuracy before adding to the maps and inventory files.

C. COMMON and TARGET HABITATS

1. Definitions

COMMON HABITATS. Definitions of COMMON HABITATS were based primarily on definitions used by the Statewide Wildlife Habitat Relationships program, administered by the Department of Fish and Game (see Mayer and Laudenslayer 1987). These COMMON HABITATS are listed in Table II-4 and defined in Appendix C. By using the WHR habitat definitions, the County can readily make use of the WHR program, which provides information on wildlife using each habitat type. Much of this information is available on a computerized data base.

TARGET HABITATS. TARGET HABITATS are defined as habitats that are restricted in acreage in the County and either (1) important to one or more of the TARGET WILDLIFE SPECIES in Table II-1, or (2) essential to the maintenance of wildlife diversity in the County. The various TARGET HABITATS are listed in Table II-3 and defined in Appendix C.

2. Mapping COMMON and TARGET HABITATS

HA mapped COMMON HABITATS and TARGET HABITATS from the following types of aerial photos, all in stereo pairs:

a) For private lands within Stanislaus National Forest, HA used U.S. Department of Agriculture natural color photos taken in 1982 (1:24,000 scale).

b) For most other private lands in the study area, HA used recent natural color photos (1:12,000), including BLM photos flown in 1985 and photos flown specifically for this project in 1986.

c) For small western portions of the study area that consist entirely of Williamson Act land, HA used black-and-white photos obtained from the Department of Water Resources (1:20,000).

Using the habitat definitions in Appendix C, HA delineated the habitat types directly on the photos. This photo-interpretation was supplemented by selected ground-truthing as needed. Before photo-interpretation, HA drew the boundaries of the study area onto the aerial photos, based on copies of the General Plan maps. In selected Williamson Act areas where habitat types had not changed since the Tuolumne County soil-vegetation maps were produced (1975-78), habitat types were not delineated on the aerial photos. Rather, the habitat types shown on the soil-veg maps were re-labeled based on the habitat definitions in Appendix C and then were transferred directly to the Wildlife Maps.

3. Procedure for Rating Target Habitats in the Field

HA conducted a brief field evaluation of each patch of TARGET HABITAT that was mapped or inventoried on developable land in the County, with the following exceptions: small patches (less than 5 acres), streams (evaluations of riparian woodlands were considered sufficient), and sites where access was prohibitive. Evaluations were recorded on field evaluation forms (see Appendix E), which included questions designed to describe and rate the quality of each habitat patch. Different versions of the evaluation form were prepared for four types of TARGET HABITAT: wooded habitats, wet meadows, lakes and ponds, and vernal pools.

A set of field maps was prepared by making black-line prints of the draft Wildlife Maps and labelling each patch of TARGET HABITAT to be visited. Each patch of habitat was assigned a unique Habitat Patch number, which was entered on the appropriate field map and evaluation form. Thus, the field maps, which will be filed at the Planning Department, can be used to verify the precise location of each habitat patch evaluated. At each habitat patch the following information was noted on the evaluation form, as relevant:

- Location, size of patch, elevation, and portion of patch evaluated.
- Habitat characteristics, including the tree layer, tree reproduction (young trees; less than 20 feet tall), shrub layer, herbaceous layer, emergent vegetation, topography, and other notable features.
- Level of human disturbance, based on evidence of livestock grazing, recent human use, recent vegetation clearing, etc.

- Potential for disturbance from adjoining areas, based on the proximity of populated or heavily used areas, the ease of access, and the potential buffering by surrounding topography or vegetation.

- Overall habitat quality, based on a comparison of the site with the optimal condition of that habitat type in Tuolumne County. Optimal condition was generally defined as the mature, undisturbed condition of that type. Each site was rated on a 1 to 5 scale, with space for a brief explanation of the rating.

- Other remarks (any outstanding or unusual characteristics of the site, notable observations of wildlife or wildlife sign, any corrections made on wildlife maps, etc.).

D. TARGET WILDLIFE SPECIES and USE-AREAS

1. Selecting TARGET WILDLIFE SPECIES to Map

TARGET WILDLIFE SPECIES are species that deserve special consideration by the County when assessing impacts, developing mitigation measures, and making other planning decisions. The 34 TARGET WILDLIFE SPECIES listed in Table II-1 are those for which significant impacts, as defined by CEQA, are most likely to occur within the County. This includes not only species listed as threatened or endangered, but also any other species that are likely to experience a substantial loss of habitat or substantial interference with their migration (see p. III-1). CEQA protection thus clearly extends to species that are rare in the County or particularly sensitive to human disturbance, regardless of their recognition on official lists. These are the species most in danger of extirpation or severe reductions on lands under County jurisdiction.

For the more common TARGET SPECIES, such as deer and trout, only relatively substantial impacts would be significant -- for example, impacts on an important concentration area. Almost any impact on the habitat of an endangered species, however, would be significant.

Conversely, certain rare animals in the County were not designated as TARGET SPECIES because significant impacts are considered unlikely on private lands. This and other reasons why certain species were not mapped are explained below.

As indicated in Table II-1, HA selected two types of TARGET SPECIES for mapping: "special-status" and "harvest" species.

Special-status species. "Special-status" species are those that are legally protected or of special concern to federal or

state agencies, due to their rarity or sensitivity to human disturbance. The sensitive status of these species has been recognized on lists maintained by the various agencies, as discussed below.

Species listed as endangered, threatened, or fully protected by the federal or state governments receive the highest level of legal protection.

Other special-status species should be considered in planning decisions because they may be listed as threatened or endangered in the near future. The U. S. Fish and Wildlife Service identifies "candidate" species, which are under consideration for listing as threatened or endangered. Similarly, the California Department of Fish and Game has designated certain wildlife species to be of "special concern" because their California breeding populations may face extirpation (Remsen 1978, CNDDB 1986).

The "special animals" list maintained by the California Natural Diversity Data Base includes species in the categories above, as well as (1) other animals that are rare or declining throughout California, or (2) animals such as colonial nesting herons, which are not especially rare but are sensitive to disturbance because so many individuals concentrate in a small area.

Table II-1 also includes species that Region 5 of the U.S. Forest Service has designated as "sensitive," because they require special management attention to prevent them from becoming threatened or endangered.

Harvest species. Finally, the TARGET SPECIES list includes important harvest species, which can legally be taken by hunters and fishermen, subject to state regulations. Although these species are now common, any substantial impacts on their populations would be significant.

2. Wildlife TARGET USE-AREAS

Wildlife use-areas are geographic areas characterized by the regular occurrence of a particular wildlife species. Wildlife TARGET USE-AREAS are use-areas of TARGET SPECIES that have a high potential for significant impacts from development; examples are nest-sites, roosts, and winter concentration areas. Table II-1 indicates the TARGET USE-AREAS to be mapped for each TARGET SPECIES. For most threatened and endangered species, and other very rare species, all regulary used habitat areas are defined as TARGET USE-AREAS, as impacts to any such areas would be significant. For other rare species, TARGET USE-AREAS include only the more critical use-areas, such as nesting or breeding sites and important roost sites. TARGET USE-AREAS for the more

common animals, such as deer, are limited to areas of unusually high population density (e.g., concentration areas).

3. Mapping TARGET USE-AREAS

Unlike wildlife habitats, which are defined on the basis of specific vegetation or topographical features, wildlife use-areas cannot be mapped from aerial photos. Information on TARGET USE-AREAS was obtained from previously existing data sources and local wildlife observers. To ensure an accurate and defensible mapping effort, HA mapped only those TARGET USE-AREAS that were well-documented.

A key element of the project involved mapping of TARGET USE-AREAS for migratory deer, which were defined as follows:

- Concentration areas are portions of the winter range and summer range where deer occur in high densities, as well as holding areas where they occur in high densities during spring and/or fall migration.

- Highly critical winter range refers to smaller areas within winter concentration areas that are especially critical to maintenance of present population levels in the deer herds. The Department of Fish and Game (DFG) identified these highly critical areas specifically for the Wildlife Project; the rationale was to allow the County to provide the greatest protection for the most essential deer habitat, without placing undue constraint on development in other areas. "Critical" winter range identified on the latest (1987) DFG deer herd maps occupies considerably larger areas in the County than does the "highly critical" winter range shown on the Wildlife Maps.

- Fawning areas are important habitat areas used for birth and rearing of fawns during the summer months, and are thus essential for maintenance of the deer herds. Fawning areas of migratory deer are generally above 4,500 feet and most are above 6,000 feet in elevation.

For data on TARGET USE-AREAS of migratory deer, HA relied primarily on the latest maps available from the Department of Fish and Game for the three migratory deer herds in the County: the Yosemite, Tuolumne, and Stanislaus Herds. HA also mapped a few concentration areas of migratory deer, labeled MD on the Wildlife Maps, which were documented by local cooperators.

In April 1987, after the draft Wildlife Maps were prepared, DFG released new and updated deer herd maps. Although this information has not been added to the Wildlife Maps, the maps are available in the Planning Department and should be consulted when assessing impacts of various projects on migratory deer (see

guidelines in Chapter IV). The major differences between the new DFG maps and the previous version (which were used as a basis for the Wildlife Maps) are: (a) the new maps show much larger areas of critical winter range, (b) the new maps identify holding areas, while the previous maps did not, (c) the new maps identify fawning areas for all three herds, while the previous maps did so for only the Tuolumne herd.

The DFG has not mapped TARGET USE-AREAS for resident deer, which do not migrate seasonally but remain in one area year-round. Resident deer occur mainly below 3,000 feet in elevation. Only a few concentration areas for resident deer were mapped, based on information from local cooperators.

No concentration areas were mapped for trout and salmon, as they will be protected by general policies concerning riparian and aquatic habitats.

4. Special-Status Wildlife Species Not Mapped

Table II-2 lists 19 special-status species that are known or likely residents of the study area, but were not designated as TARGET SPECIES and thus were not mapped. There were three main reasons for not mapping use-areas of these species:

a) Mapping use-areas for wide-ranging species such as red fox and wolverine would not be particularly useful in County planning, as it is difficult to pinpoint a specific area where impacts would be significant and to devise effective mitigation. For the same reason, HA did not propose mapping foraging habitat for wide-ranging birds of prey, such as golden eagles. County policy toward such use-areas can best be handled on a case-by-case basis or by general policies for the habitat types where they occur.

b) Other species in Table II-2 are included on one or more special-status lists (defined above), but are not considered rare or especially sensitive to disturbance in Tuolumne County (e.g., ringtail, yellow warbler, and western pond turtle).

c) For the 7 invertebrate species, information concerning their whereabouts is considered confidential, due to the potential for intentional disturbance, primarily from collectors.

E. Wildlife Maps

HA prepared 20 mylar Wildlife Maps, designed as overlays for the corresponding General Plan maps (scale 1:12,000) and their topographic base maps. COMMON HABITATS are indicated with

lower-case abbreviations (e.g., bow = blue oak woodland), while TARGET HABITATS are indicated by upper-case (e.g., VRI = valley-foothill riparian woodland). Habitat abbreviations are defined in Tables II-3 and II-4. Perennial and intermittent streams are indicated on the topo base maps by solid and broken lines, respectively. They were not traced onto the wildlife overlays, as that would make the habitat boundaries hard to read.

For most wildlife TARGET USE-AREAS, the location is indicated with a symbol indicating the precision by which the location is known and an abbreviation indicating the species (Figure II-1). An asterisk (*) is used to indicate each section containing one or more TARGET USE-AREAS that are considered confidential, due to a high potential for disturbance of the TARGET SPECIES. The Department of Fish and Game must be consulted for further information about these TARGET USE-AREAS.

TARGET USE-AREAS of migratory deer are outlined by various kinds of lines, to indicate different types of use (Figure II-2).

F. TARGET HABITATS and TARGET USE-AREAS Not Shown On the 20 Wildlife Maps

For private lands located in the County, but outside the 20 quads mapped, HA provided the Planning Department with a list of TARGET HABITATS and USE-AREAS, along with their locations and the relevant aerial photo number (for TARGET HABITATS) or other source of information (for TARGET USE-AREAS). The list is in Appendix G.

The list is arranged in order of township, range, and section, to facilitate finding all the information on a particular site. The TARGET HABITATS listed have been delineated on the aerial photos.

G. Results of Mapping and Inventory

Table II-1 indicates the number of TARGET USE-AREAS mapped for each TARGET SPECIES, or, in the case of migratory deer, the acreages mapped for each type of TARGET USE-AREA. Table II-3 indicates the acreage of each TARGET HABITAT mapped. Note that these acreages do not count the TARGET HABITATS and USE-AREAS located outside the 20 quads (see above).

At the end of this handbook (Appendix H) are listed the most useful references and other data sources on wildlife of the County. These references provided good, detailed information on habitat needs of most of the target species, although such information was more limited for the invertebrates. The aerial photos, supplemented by HA's field evaluations, provided reasonably good information on the TARGET and COMMON HABITATS.

Some TARGET HABITATS, however, such as vernal pools, springs, and old growth coniferous forest, were difficult to map thoroughly from the photos. For these habitats, there will be a greater reliance on field checks at the time a project is evaluated.

Only limited information was available on most TARGET USE-AREAS in the County. The Department of Fish and Game provided extensive data on deer use-areas and raptor nests, as well as some information on distribution of willow flycatchers, heron colonies, and fish species. Detailed studies of spotted and great gray owls have been conducted in and around Stanislaus National Forest (SNF). SNF also provided considerable data on bald eagles. A thorough distributional survey was done on the keeled sideband snail for the Ponderosa hydroelectric project, but only a few locations are known for the other target invertebrates. Surveys for willow flycatchers, red fox, wolverine, otter, fisher, and pine marten provided some useful information, but most of this is related to Forest Service land. The California Natural Diversity Data Base provided a few locations of TARGET USE-AREAS.

Our review of Environmental Impact Reports prepared in the County uncovered a summary of bald eagle sightings and some information on vernal pools, but little else of direct relevance to our mapping effort.

Cooperators provided useful information on various TARGET USE-AREAS and a few locations of TARGET HABITATS.

The distributional data used for mapping of TARGET HABITATS and TARGET USE-AREAS -- in the form of reports, report forms from cooperators, and photocopies of data files -- will be organized by species or habitat and provided to the Planning Department.

Table II-1. Wildlife TARGET USE-AREAS Mapped for the Tuolumne County Wildlife Inventory and Evaluation Project. The table notes the TARGET USE-AREAS that were mapped for each species during the project, when information was available. It also provides the official status of each species on various government lists of special-status and harvest species.[a]

Species	Status[a]	TARGET USE-AREAS	Number of USE-AREAS Mapped[b]
(1) SPECIAL-STATUS SPECIES			
MAMMALS			
Spotted bat *Euderma maculatum*	FC2	Colonial breeding or roosting sites	0[c]
Pale big-eared bat *Plecotus townsendi pallescens*	SA	Colonial breeding or roosting sites	0[c]
BIRDS			
Double-crested cormorant *Phalacrocorax auritus*	SC2	Nesting sites	0[c]
Great blue heron *Ardea herodias*	SA	Colonial nesting sites	1
Great egret *Casmerodius albus*	SA	Colonial nesting sites	0[c]
Black-crowned night-heron *Nycticorax nycticorax*	SA	Colonial nesting sites	0[d]
Wood duck *Aix sponsa*	SA (HA)	Nesting sites Wintering concentrations	2
Harlequin duck *Histrionicus histrionicus*	SC3	All habitat areas used regularly	0[d]
Cooper's hawk *Accipiter cooperii*	SC3	Nesting sites	0[e]
Northern goshawk *A. gentilis*	SC3, FS	Nesting sites	5
Sharp-shinned hawk *A. striatus*	SC3	Nesting sites	0[c]

Table II-1 (cont.)

Species	Status[a]	TARGET USE-AREAS	Number of USE-AREAS Mapped[b]
Golden eagle Aquila chrysaetos	SC3, CP	Nesting sites	2
Northern harrier Circus cyaneus	SC2	Nesting sites	0[d]
Black-shouldered kite Elanus caerulea	CP	Nesting sites Colonial roosting sites	0[c]
Bald eagle Haliaeetus leucocephalus	FE,CE CP	All habitat areas used regularly	2
Osprey Pandion haliaetus	SC2	Nesting sites	1
Prairie falcon F. mexicanus	SC3	Nesting sites	0[c]
American peregrine falcon Falco peregrinus anatum	FE,CE CP	All habitat areas used regularly	0[c]
Long-eared owl Asio otus	SC2	Nesting sites Colonial roosting sites	1
Burrowing owl Athene cunicularia	SC2	Nesting sites	0[c]
Great gray owl Strix nebulosa	CE, FS	All habitat areas used regularly	5
Spotted owl S. occidentalis	SC2, FS	Nesting territories Winter roost sites	16
Pileated woodpecker Dryocopus pileatus	SA	Nesting sites	0[c]
Willow flycatcher Empidonax traillii	SC1, FS	Nesting territories	0[e]
Purple martin Progne subis	SC2	Nesting sites	0[c]
Tricolored blackbird Agelaius tricolor	FC2	Colonial nesting sites	0[d]
Yellow-breasted chat Icteria virens	SC2	Nesting sites	0[c]

Table II-1 (cont.)

Species	Status[a]	TARGET USE-AREAS	Number of USE-AREAS Mapped[b]
AMPHIBIANS			
California tiger salamander *Ambystoma tigrinum californiense*	SC, FC2	Breeding sites	0[c]
Yosemite toad *Bufo canorus*	SC	Breeding sites	0[c]
California red-legged frog *Rana aurora draytoni*	SC, FC2	Breeding sites	0[c]
Foothill yellow-legged frog *Rana boyli*	SC	Breeding sites	0[c]

(2) HARVEST SPECIES

			Acres of USE-AREAS Mapped
Mule deer *Odocoileus hemionus*	HA	*Migratory deer*:	
		Known concentration areas	4,530
		Suspected conc. areas	31,040
		Highly critical winter range	340
		Fawning areas and/or meadows	810
		Resident deer:	
		Concentration areas	3 sites
Resident trout (Rainbow, brown, and brook)	HA	Instream barriers to movement	--
Chinook salmon *Oncorhynchus tshawytscha*	HA	Spawning areas (if any)	--
		Instream barriers to movement	--

[a] The following lists, except for harvest species, are special-status lists maintained by government agencies:

CE = California endangered list

CP = California fully protected list

Table II-1 (cont.)

CT = California threatened list

FC2 = Federal candidate species, category 2: listing as threatened or endangered may be warranted, but further data are needed to decide whether to list this species.

FE = Federal endangered list

FS = Forest Service, Region 5, sensitive species list

HA = Harvest species

SA = Special animal list, maintained by the California Natural Diversity Data Base (most of the species in Tables II-1 and II-2 are on the SA list; SA status is noted only when no other special status applies to that species)

SC = California species of special concern (CNDDB 1986)

SC1, SC2, SC3 = California bird species of special concern, highest priority, second priority, and third priority (Remsen 1980)

b Estimated from the draft Wildlife Maps by Tuolumne County Planning Department staff, March 1987.

c The wildlife inventory did not locate any TARGET USE-AREAS of this species in the study area, but it is possible or likely that such USE-AREAS are present.

d Based on the wildlife inventory, no TARGET USE-AREAS of this species are thought to be present in the study area, although individuals of the species may occur.

e TARGET USE-AREAS of this species were located in the study area, but only in areas outside the 20 quads mapped (see Appendix G).

Table II-2. Special-Status Wildlife Species Not Mapped. There are several reasons for not mapping the geographic areas used by these species. First, some species range widely or occur in a great variety of habitats; because there are no concentration areas, mapping would be difficult and would not be particularly useful in County planning. For other species, information on their whereabouts is confidential, due to the potential for intentional disturbance. Finally, some of these species are included on various "special-status" lists (see footnote "a" in Table II-1), but are not considered rare in Tuolumne County.

Species	Status[a]	Reason for Not Mapping
MAMMALS		
Sierra Nevada snowshoe hare *Lepus americanus tahoensis*	FC2, SC	More information needed to assess whether it is rare in Tuolumne County and throughout Sierra
Western white-tailed hare *L. townsendii townsendii*	SC	More information needed to assess whether it is rare in Tuolumne County and throughout Sierra
Sierra Nevada red fox *Vulpes vulpes necator*	CT,FS FC2	Wide-ranging species
Ringtail *Bassariscus astutus*	CP	Wide-ranging; probably fairly common in parts of County
Wolverine *Gulo gulo*	CT,CP FC2	Wide-ranging
Fisher *Martes pennanti*	FS	Wide-ranging
Pine marten *Martes americana*	FS	Wide-ranging
BIRDS		
Merlin *Falco columbarius*	SC1	Wide-ranging; does not nest in County
Yellow warbler *Dendroica petechia brewsteri*	SC2	Not considered rare in Tuolumne County

Table II-2 (cont.)

Species	Status[a]	Reason for Not Mapping
REPTILES		
Western pond turtle *Clemmys marmorata*	SC, FC2	Not considered rare in Tuolumne County
INVERTEBRATES		
Keeled sideband snail *Monadenia circumcarinata*	FC2	Confidential
Little hairy snail *M. mormonum hirsuta*	FC2	Confidential
Little button snail *M. m. buttoni*	FC2	Confidential
Melones cave harvestman *Banksula melones*	SA	Confidential
Grady's cave amphipod *Stygobromus gradyi*	FC2	Confidential
Hara's cave amphipod *S. harai*	FC2	Condidential
Simple hydroporus diving beetle *Hydroporus simplex*	FC2	Confidential

[a] See Table II-1 for explanation of abbreviations.

Table II-3. TARGET HABITATS Mapped for the Tuolumne County Wildlife Inventory and Evaluation Project. In addition to mapping COMMON HABITATS (see Table II-4), we mapped the following TARGET HABITATS, which are more limited in acreage in the County and are of special importance to particular TARGET SPECIES or to maintaining wildlife diversity.

TARGET HABITAT	Abbreviation on Maps	Acreage Mapped on the 20 Quads[a]
Perennial stream or ditch	--	--[b]
Intermittent stream	--	--[b]
Lake, reservoir, or pond	LAK	1,107
Vernal pool	VPL	4[c]
Natural spring or seep	SPR	137 (count)[c]
Fresh emergent wetland (marsh)	FEW	0[d]
Wet meadow	WTM	834
Montane riparian woodland	MRI	1,721
Valley-foothill riparian woodland	VRI	1,042
Aspen grove	ASP	0[d]
Valley oak woodland	VOW	479
Old-growth coniferous forest	OGC	0[c,d]
Big tree forest	BTF	0[e]
Native perennial grassland	PGS	0[c,e]
Old Growth Oak	OGO	250

---

[a] Acreages were estimated from the draft Wildlife Maps by Tuolumne County Planning Department staff, March 1987.

[b] Perennial and intermittent streams are indicated on the USGS topographic base maps by solid and broken lines, respectively. They were not traced onto our wildlife overlays, as that would make the habitat boundaries harder to read.

Table II-3 (cont.)

[c] This habitat is difficult to map thoroughly from aerial photographs. Aerial photos were supplemented by other data sources to the extent possible.

[d] Although this habitat occurs in the study area, it does not appear on the wildlife maps, either because it occurs only in patches less than 5 acres, or because it occurs only outside the 20 quads that were mapped.

[e] Based on the mapping and inventory, it appears that this habitat may not occur in the study area.

Table II-4. COMMON HABITATS Mapped for the Tuolumne County Wildlife Inventory and Evaluation Project. These habitats are equivalent to the WHR Cover Types defined by the Wildlife Habitat Relationships (WHR) program, administered by the Department of Fish and Game. The WHR program provides information on wildlife using these and other habitats throughout the state.

COMMON HABITAT	Abbreviation on Maps
Subalpine conifer	scn
Lodgepole pine	lpn
Red fir	rfr
Jeffrey pine	jpn
White fir	wfr
Sierran mixed conifer	smc
Ponderosa pine	ppn
Montane hardwood-conifer	mhc
Montane hardwood	mhw
Montane chaparral	mcp
Mixed chaparral	mch
Chamise chaparral	chc
Blue oak-digger pine	bop
Blue oak woodland	bow
Annual grassland	ags
Irrigated pasture	pas
Cropland	crp
Barren	bar
Residential-park	rsp

Figure II-1

Tuolumne County Wildlife Maps

Map Symbols for Wildlife TARGET USE-AREAS[1]

	Confidential TARGET USE-AREA within this section: consult with Department of Fish and Game.
BE	Bald eagle: habitat area used regularly
GH	Great blue heron: colonial nesting site
GO	Great gray owl: habitat area used regularly
LO	Long-eared owl: nesting territory
MD	Migratory deer: concentration area [1]
RD	Resident deer: concentration area
SO	Spotted owl: nesting territory
WD	Wood duck: nesting site
WF	Willow flycatcher: nesting territory

Map Symbols Indicating Precision by Which Location is Known

	Located within 80 acres surrounding symbol
	Located within 1-mile radius
	Located within this section
	Located within the half-section indicated by arrow
	Located within the quarter-section indicated by arrow

[1] Also, see the map symbols for migratory deer in Figure II-2.

Figure II-2

Tuolumne County Wildlife Maps

Map Symbols for Migratory Deer TARGET USE-AREAS[1]

Deer concentration area (known)

Deer concentration area (suspected or known)

Highly critical winter range (known)

Fawning area and/or meadow

Critical deer winter range

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[1] Also, see the map symbols in Figure II-1.

CHAPTER III

WILDLIFE MITIGATION MEASURES

Contents of Chapter III

A. Compliance With CEQA

Under CEQA, the County is required to determine whether any projects under its jurisdiction would have a "significant effect on the environment." If significant effects are considered likely, CEQA requires the County, among other things, to explore ways of mitigating or avoiding such impacts.

A significant effect is defined as a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project," specifically including effects on flora and fauna (CEQA Guidelines Section 15382). Appendix G of the CEQA Guidelines states that a project "will normally have a significant effect on the environment if it will...

- "Substantially affect a rare or endangered species of animal or plant or the habitat of the species;"
- "Interfere substantially with the movement of any resident or migratory fish or wildlife species;" or
- "Substantially diminish habitat for fish, wildlife or plants"

Section 15065 of the CEQA Guidelines requires a finding of significance if a project has the potential to "reduce the number or restrict the range of a rare or endangered plant or animal." By "rare or endangered", CEQA means any plant or animal that is actually rare or endangered throughout all or a significant portion of its range, even if it is not officially listed as rare, threatened, or endangered (Section 15380).

The comprehensive wildlife inventory performed for this project will put the County in a better position to comply with CEQA. Under CEQA, an EIR is required unless substantial evidence indicates that a project will not have a significant environmental impact. With this data base, the County is in a better position to make this judgement.

It should be noted, however, that there could be significant impacts on wildlife habitats or use-areas that were not mapped for this project (e.g., use-areas of species listed in Table II-2, or especially valuable use-areas of more common species). Thus the County must judge the significance of wildlife impacts based on all available evidence, not just the Wildlife Maps and Handbook.

B. Definition of Mitigation

The CEQA Guidelines (Section 15370) state that mitigation includes:

"(a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation. (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment. (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. (e) Compensating for the impact by replacing or providing substitute resources or environments."

Under this broad definition, individual projects can be modified to avoid or minimize an impact. In addition, temporary impacts can be corrected or reduced over time. For unavoidable impacts, other mitigation measures can be required as compensation, either on site or off site. Finally, as a last resort, projects can be denied if impacts cannot be mitigated adequately.

C. Types of Impacts to Be Mitigated

The mitigation measures recommended in this chapter are intended to mitigate wildlife impacts from all discretionary projects under the County's jurisdiction, except those that are exempt from CEQA. In addition, the mitigation measures shall apply to grading permits, even those that are exempt from CEQA. Thus, the types of impacts to be mitigated include those from:

- Residential development
- Commercial and industrial development
- Road construction
- Zoning changes and General Plan amendments that permit additional development, including changes from non-priority (e.g., Williamson Act and Timber Preserve) to priority (developable) designations
- Water projects, e.g., hydroelectric, water supply, stream channelization, and flood control.
- All other projects requiring use permits, grading permits, development agreements, or tentative parcel or subdivision map approval.

These mitigation measures will not apply to building permits, commercial timber harvest, or agricultural practices permitted without a special use permit under the County Zoning Ordinance. Where timber harvests or agricultural practices are mentioned on pages III-8 through III-20, those mitigation measures will be invoked only in conjunction with projects listed above in this section.

D. Four Priority Categories for Wildlife Protection

The mitigation measures presented in this chapter are designed to mitigate impacts on COMMON HABITATS, TARGET HABITATS, and TARGET USE-AREAS (see Chapter II), which are collectively referred to as Wildlife Areas below. The highest priority Wildlife Areas are those that are most vulnerable to significant impacts from human disturbance. Appendix B classifies the County's Wildlife Areas into four priority categories based on their level of legal protection, rarity in the County, importance to wildlife, and sensitivity to human disturbance. Appendix B also suggests appropriate levels of development for each category. The priority categories are defined as follows:

- First Priority areas are TARGET USE-AREAS for species listed as threatened or endangered by the state or federal governments. They include areas used regularly and considered important for maintaining a species' current population level in the County.

- Second Priority areas include (a) TARGET USE-AREAS for other wildlife species that are rare in the County (see Table II-1), (b) the most important TARGET USE-AREAS for migratory deer (see Appendix B), (c) TARGET HABITATS that are locally rare, and (d) all other TARGET HABITATS, which are essential for maintaining diverse and abundant wildlife in the County.

- Third Priority areas include: (a) COMMON HABITATS (see Table II-4) that are of considerable value to wildlife (as specified in Appendix B), (b) TARGET USE-AREAS for migratory deer (except the most important areas, which are Second Priority); (c) TARGET USE-AREAS for resident deer.

- Fourth Priority areas include: (a) the following COMMON HABITATS: residential-park (urbanized and landscaped areas), cropland, annual grassland, irrigated pasture, and barren; and (b) all other COMMON HABITATS that are of relatively low value to wildlife (as specified in Appendix B).

E. Wildlife Mitigation Principles

The following principles define the goals of the wildlife mitigation measures recommended below, suggest how to select the appropriate mitigation measures for individual projects, and provide guidelines for successful implementation of those measures.

1. Goals of Wildlife Mitigation

a. A central goal of wildlife mitigation in the County will be to pursue a consistent, fair, and cost-effective approach

to wildlife mitigation that provides the greatest protection for the most sensitive resources.

b. Goals for the Wildlife Areas of the four priority categories discussed above will be:

- o To provide the greatest possible protection for First and Second Priority Wildlife Areas, maintaining or enhancing their present value to wildlife.
- o In Third Priority Wildlife Areas, to avoid impacts to the extent possible; minimize or compensate for unavoidable significant impacts; and encourage voluntary efforts to enhance such areas for wildlife, i.e. to improve on their present value.
- o To the extent feasible, to channel future development into Fourth Priority Wildlife Areas, if consistent with other policies of the County.

c. Through wildlife mitigation and other planning measures, the County will attempt to maintain a continuous network of valuable wildlife habitat throughout the County by providing habitat corridors for wildlife moving between the larger tracts of high-quality habitat.

d. The County will require mitigation for cumulative impacts on wildlife, as well as direct and indirect impacts from individual projects.

2. Selecting Appropriate Mitigation Measures

a. The following priorities will apply in selecting among feasible mitigation measures (from highest to lowest priority):

- o Mitigation measures will be implemented on or adjacent to the project site and will replace, protect, or improve the same kinds of habitats as those lost or damaged by the project (in-kind, on-site).
- o Improvement of the same habitats as those lost, but at an appropriate site elsewhere (in-kind, off-site).
- o Improvement of alternative habitat types at or adjacent to the project site (alternative-kind, on-site).
- o Improvement of alternative habitat types at an appropriate site elsewhere (alternative-kind, off-site).

b. The ideal model for preserving or restoring a terrestrial wildlife habitat will be to mimic the historic (pre-1850)

condition of that habitat in the local area, as this resembles the environment that local wildlife have adapted to over thousands of years.

c. In preserving or restoring a wildlife habitat to benefit a particular species, it is recognized that some departures from the historic condition may be necessary, but such departures should be minimized.

d. In selecting a mitigation option, priority should usually be given to improving or replicating natural ecosystems rather than artificial ones. For example, it is usually preferable to improve natural reproduction of fish or wildlife rather than relying on hatcheries or captive breeding to augment natural populations.

e. The range of available mitigation options will depend on the parcel size involved. On larger parcels there are more possibilities for on-site mitigation such as clustering of units, buffer zones, careful siting to avoid sensitive areas, and habitat improvements in undeveloped portions of the site.

f. Mitigation options will also be limited by the intensity of development on a parcel. For high-intensity developments, there may be little or no opportunity for on-site mitigation.

g. To protect fish and other aquatic animals, the County should cooperate with the Department of Fish and Game (DFG) to obtain adequate habitat protection through instream flow and streambed alteration agreements with developers. Other protections will include erosion control measures and riparian setbacks.

3. Implementing Mitigation Measures

a. Implementation is the responsibility of the project proponent.

b. To ensure that mitigation measures for a project are actually implemented, they should be incorporated into development agreements, use permits, permanent easements, or other enforceable documents.

c. Post-project monitoring by the County is essential for ensuring successful implementation of mitigation measures (see Chapter V).

F. Mitigation Measures for Impacts on Specific Resources

The following sections propose mitigation measures for impacts on specific TARGET USE-AREAS, TARGET HABITATS, AND COMMON HABITATS. Note that it will still be necessary for County planners to use some discretion in selecting mitigation that is appropriate to a particular project.

In some cases there may be significant impacts on wildlife resources that are not discussed below, e.g., common wildlife species that occur in unusually high concentrations at a particular site. In such cases, County staff should consult with the Department of Fish and Game, and other biologists as needed, before deciding on appropriate mitigation.

In cases where habitat protection or enhancement measures are to be implemented, e.g., by planting native trees or placing restrictions on grazing, a "wildlife habitat management plan" shall be required. It shall be prepared in sufficient detail that a qualified biologist could judge its likelihood of success, and shall include a monitoring program (see Chapter V).

Some mitigation measures apply only during the breeding seasons of TARGET SPECIES. In such cases, the approximate dates of the breeding season are noted. Breeding seasons vary, however, according to elevation, weather, and local conditions. Thus, these dates can be modified based on reliable local data or on biological surveys demonstrating that the breeding season has ended (or that no breeding is taking place) in a given year.

Under certain circumstances, TPZ (Timberland Preserve) zoning may substitute for O (Open Space) zoning and other wildlife mitigation measures, provided a Timber Management Plan is recorded as a deed restriction and said Timber Management Plan details appropriate wildlife mitigation measures or a Conditional Use Permit is issued by the County. The Timber Management Plan shall be developed in cooperation with the California Department of Forestry and Department of Fish and Game. (Res. 295-88, October 1988)

1. TARGET USE-AREAS OF Threatened and Endangered Species (First Priority)

If there are possible impacts on threatened or endangered species, the County should consult with the California Department of Fish and Game (state-listed species) and/or U.S. Fish and Wildlife Service (federally listed species) before assessing impacts and determining the appropriate mitigation. Field surveys are usually required. Some possible mitigation measures are listed below.

Bald Eagle

A1. If there are trees in or near the project area that are used regularly as roosting or feeding perches:

a) Prohibit all construction activities within 1/4 mile of each perch during the period when eagles are normally present (typically November-April).

b) Prohibit all disturbance of the actual perching trees.

c) If it is an important perching site (a group of trees used regularly by several eagles nearly every winter), enforce a building setback of 1/4 mile (or more, if necessary) to avoid disturbance to the perch.

d) Plan developments to avoid increasing human activity around important perches when eagles are present. This includes prohibiting boating within the vicinity, and ensuring that perches are screened from view from developed areas, including roads and trails, e.g., by retaining trees or siting developments behind hills.

A2. In areas used regularly for feeding, require measures to ensure that the eagles' food supply (mainly fish, waterfowl, and carrion) is not diminished; restrict the use of pesticides that could contaminate these foods; and restrict boating during the season when eagles are present.

Peregrine Falcon Breeding Sites

B1. Peregrine falcons nest on ledges on large cliffs, and are extremely rare in the County. None are known or likely to breed on private land in the near future. If they do, mitigation shall be determined in consultation with the appropriate agencies.

Great Gray Owl

C1. Prohibit disturbance to wet, moist, and dry meadows within breeding territories.

C2. Prohibit major disturbance (such as clearcutting) to forests bordering such meadows, in a 600-foot wide strip. Within this strip, some selective timber harvest may be permissible, provided that it occurs outside the breeding season (March 15 - August 15) and that sufficient large trees and snags are allowed to remain. To the extent possible, given existing habitat conditions, the remaining canopy closure should be more than 40%, with overstory trees 21 inches in diameter or greater (measured 4.5 feet above the ground) and at least 3 snags greater than 21 inches in diameter per acre.

C3. Prohibit disturbance to any nest tree that has been active within 3 years and is still suitable for nesting. Provide for a building setback of 500 feet around the tree. Within this setback, some timber harvest and vegetation clearing may be permitted as described above, but not within 200 feet of the tree or during the breeding season (March 15 - August 15).

C4. Any disturbances to be allowed within a breeding territory must be incorporated in a management plan to be approved by the appropriate agencies.

C5. If a project may have impacts on a regularly used wintering area, appropriate mitigation should be devised in consultation with the appropriate agencies.

2. TARGET USE-AREAS of other TARGET SPECIES (Second Priority)

Heron Nesting Colonies (Great Blue Heron and Great Egret)

D1. Prohibit construction activities within 1/4 mile of the colony site during the nesting season (February 15 - September 1).

D2. Require a building setback of 1000 feet from colony sites that have been active within 2 years; this could be reduced to as little as 300 feet if the colony is out of sight from the building site and inaccessible due to topographic or water barriers.

D3. If a setback is not feasible, require full habitat replacement elsewhere.

Wood Duck Nesting Sites and Wintering Concentrations

E1. Building and clearing setbacks of 200 feet from lakes, ponds, and streams in nesting and wintering areas that have been active within 2 years.

E2. Prohibit disturbance to nesting trees that have been active within 2 years and are still suitable for nesting.

Spotted Owl Nesting Territories and Winter Roost-Sites

Spotted owls in the Sierra require approximately 1400 acres of dense old-growth (or mature second-growth) coniferous forest in each breeding territory (Dawson et al. 1986). Thus it will be difficult to preserve an entire territory on private property without voluntary compliance of the property owner. However, the following measures are considered feasible and should reduce impacts on spotted owls.

F1. Provide a 500-foot building and clearing setback around each nest tree that has been active within 3 years, under conditions specified for great gray owls (C3).

F2. Prohibit construction activities within 1/4 mile around each active nest during the breeding season (March 1 - August 31).

F3. If any regularly used winter roost sites are located, prohibit all disturbance within the vicinity, with details to be worked out with species experts and appropriate agencies.

F4. Provide additional protection by applying the mitigation measures for old growth coniferous forest.

Other Raptors (Eagles, Hawks, and Owls)

G1. Provide the following building and clearing setbacks around nest-sites that have been active within 3 years, if they are still suitable for nesting: long-eared owl and burrowing owl (300 feet); northern goshawk, Cooper's hawk, sharp-shinned hawk, northern harrier, and black-shouldered kite (500 feet); and golden eagle, osprey, and prairie falcon (1000 feet).

G2. Allow limited clearing and timber harvest within the setbacks, but only under the conditions specified for great gray owl (C3).

G3. Prohibit all construction activities within the following distances of active nests during the nesting season: long-eared owl and burrowing owl (600 feet); golden eagle, osprey, and prairie falcon (1/2 mile); and all other species listed above (1/4 mile). Nesting seasons are defined as follows:

Long-eared owl:	March 1 - June 30
Burrowing owl:	April 15 - July 15
Golden eagle:	February 1 - June 30
Osprey:	April 15 - August 1
Prairie falcon:	April 15 - July 15
Northern goshawk:	April 1 - August 31
Cooper's hawk:	April 15 - August 31
Sharp-shinned hawk:	May 15 - August 15
Northern harrier:	April 1 - June 30
Black-shouldered kite:	February 15 - September 15

G4. Protect colonial roosting sites used regularly by 4 or more black-shouldered kites or long-eared owls by requiring the same buffer zones as noted in G3 above, during the season of regular use.

G5. These setbacks and buffer zones could be reduced based on considerations of inaccessibility and lack of visibility of the nest- or roost-site, but only on the recommendation of a qualified biologist who has inspected the site.

G6. Prohibit any disturbance of the actual nest- or roost-sites.

Nest-sites of Other Target Birds

Based on the wildlife inventory, it is unlikely that black-crowned night-heron, harlequin duck, or tricolored blackbird nest

in the study area. If these species are present, mitigation measures shall be designed in consultation with the appropriate agencies and experts. Mitigation measures for the other target birds listed in Table II-1 are presented below.

H1. Provide the following building and clearing setbacks around nest-sites that have been active within 2 years and are still suitable for nesting: pileated woodpecker (500 feet), double-crested cormorant (300 feet), and purple martin (200 feet). Limited tree cutting could be permitted within these setbacks, but not during the breeding season (defined below). Within the pileated woodpecker setback, to the extent possible, the remaining canopy closure should be more than 40%, with overstory trees 21 inches in diameter or greater (measured 4.5 feet above the ground) and at least 3 snags greater than 21 inches in diameter per acre.

H2. Within the breeding season, human disturbances shall be prohibited around active nests, within these setbacks. Nesting seasons are defined as follows: pileated woodpecker (March 1 - July 15), double-crested cormorant (April 1 - July 31), and purple martin (March 1 - August 15).

H3. Yellow-breasted chats would be adequately protected by the standard riparian setbacks.

H4. Willow flycatcher nesting territories shall be protected by preserving meadow habitat (see Q1-Q3) and by regulating livestock grazing to limit browsing on low willow foliage (below 6 feet), which is required for nesting cover.

H5. Disturbance to nests or nest trees of all target birds shall be prohibited, if they have been active within 2 years and are still suitable for nesting.

Breeding Sites of Target Amphibians

I1. Require appropriate measures to maintain the existing water quality and water supply.

I2. Prohibit introductions of fish or amphibians that are not native to the site.

Trout and Salmon

J1. In most cases these species would be adequately protected by the mitigation measures for streams and riparian habitats (see below). If it appears that additional measures are needed, County staff shall consult with the Department of Fish and Game.

3. TARGET USE-AREAS of Mule Deer (Second and Third Priority)

Note that in most cases existing parcels of less than 37 acres do not qualify as highly critical winter range, and parcels of less than 10 acres are of little long-term value to migratory deer (Yuba County 1985). Such areas usually do not qualify as Second Priority deer areas, but they may qualify as Third Priority areas (see Appendix B). In addition, the location of a parcel adjacent to higher density development may preclude it from functioning as a Second Priority deer area.

Migration corridors and major holding areas of migratory deer are not shown on the Wildlife Maps, and many fawning areas are not mapped, due to a lack of conclusive data on most locations. Similarly, only a few resident deer concentration areas are mapped, and these have not been confirmed by DFG. Procedures for amending the Wildlife Maps to include these corridors, holding areas, fawning areas, and concentration areas when the locations are confirmed are outlined in Chapter V.

Migratory Deer: Highly Critical Winter Range, Fawning Areas, Major Holding Areas, and Major Migration Corridors (Second Priority)

K1. Maintain large-parcel zoning (37 acres or more) in highly critical winter range. Highly critical winter range for the Tuolumne Herd is confirmed and mapped on the Wildlife Maps. For the Stanislaus and Yosemite Herds, the upper Phoenix Lake Basin; the Ruby Hill Springs-Schaeffer area near Jupiter; and the areas north and east of Pine Mountain Lake have been identified as highly critical winter range by DFG and are outlined on the Wildlife Maps. If a project site is located in a deer concentration area of the Stanislaus or Yosemite Herds, but is not in one of these three specifically mentioned areas, then DFG must provide the technical data proof that it is a highly critical winter range. If the project site is located in one of the three specifically mentioned areas, and if the applicant objects to the initial habitat designation, then the procedures in Chapter IV will be followed until final determination.

K2. Maintain large-parcel zoning (37 acres or more) in major migration corridors that have been confirmed and mapped on the Wildlife Maps.

K3. Require building setbacks of 1,000 feet from known fawning areas that are mapped on the Wildlife Maps and/or the latest DFG migratory deer herd maps.

K4. Require building setbacks of 500 feet from major migration corridors and major holding areas that have been confirmed and mapped on the Wildlife Maps.

K5. Require the mitigation measures for Third Priority migratory deer areas (see below).

Migratory Deer: Other Concentration Areas (Third Priority)

L1. If the existing parcel size is less than 10 acres, no building setbacks, open space zoning, or habitat improvements shall be required specifically for migratory deer. Such measures may be required for resident deer, however (see below), or for COMMON or TARGET HABITATS.

L2. Require building setbacks of 250 feet from perennial streams and 200 feet from important shelter areas and travel routes.

L3. Use open space zoning and building setbacks to protect riparian, wet meadow, and aspen habitats and key feeding and shelter areas.

L4. Where appropriate, require that building sites be clustered on the least environmentally sensitive portions of the parcel, and minimize clearing of oaks, other trees, and shrubs (except clearing designed to enhance deer habitat).

L5. Maintain adequate access for deer to move through parcels by locating home sites (or clusters of home sites) at least 300 feet apart, wherever feasible.

L6. Dog control: require that all dogs be enclosed or leashed.

L7. Fencing restrictions: (a) barbed wire fences shall be limited to five or fewer strands, with no strand lower than 16 inches or higher than 48 inches above the ground; (b) hogwire fences shall be limited to an area of 10 acres or less, and only allowed if needed for livestock such as hogs or sheep; and (c) deer-proof fences shall be allowed only around homesites and adjacent gardens and animal enclosures.

L8. At least 20% of the land area shall be preserved by open space zoning, conservation easement, or other comparable restriction. Off-site habitat may be substituted if it is of comparable value to the same migratory deer herd. Habitat improvements shall be required as needed on the areas preserved as deer habitat. On-site improvements for migratory deer are not very effective unless the existing parcel is 100 acres or more; off-site improvements are usually preferable for parcels of less than 100 acres. Examples of habitat improvement include (a) clearing or prescribed burning of dense brush fields to create openings of 10 to 50 acres with suitable cover at the edge of each opening, (b) planting of preferred native food plants, and

(c) removing small trees encroaching on the edges of meadows.

L9. On nearby public roads where the development would increase traffic significantly, post "Deer Crossing" or "Animal Crossing" signs at heavily used crossings. On an experimental basis, where there is a high potential for increased road kills, install special reflectors designed to reduce road kills. Reduced speed limits could also be required in such situations. In addition, sand should be used instead of salt on icy roads in deer concentration areas, to avoid attracting deer to roads.

L10. For other potential barriers to deer movement, such as large pipelines or steep-sided canals, provide deer crossings at suitable intervals (e.g., by burying pipelines or providing suitably designed ramps across canals).

L11. For projects other than residential or retail business development, all newly created roads shall be closed by locked gates unless there is a demonstrated need for public access. Temporary roads created for construction purposes shall be permanently blocked to vehicle traffic when construction is completed.

Resident Deer: Concentration Areas (Third Priority)

Because resident deer are generally more tolerant of human activity than are migratory deer, the requirements for setbacks, minimum lot sizes, and spacing between home sites can be relaxed. To minimize impacts, it is still essential to maintain and improve habitat, control dogs, regulate fencing, and minimize road kills. Thus, for resident deer concentration areas that have been confirmed and mapped on the Wildlife Maps, the mitigation measures for Third Priority migratory deer areas shall apply, with the following exceptions:

M1. If the existing parcel size is less than 5 acres, no open space zoning or habitat improvements shall be required specifically for resident deer.

M2. No special building setbacks or spacing requirements, except that the standard riparian setbacks shall apply (see N1 to N5, below).

M3. Habitat improvements that increase the reliable supply of water during summer months are particularly valuable to resident deer (e.g., by creating small ponds or installing guzzlers) and shall be required as appropriate.

4. TARGET HABITATS (Second Priority)

Riparian Habitats, Streams, and Ditches

N1. Non-urban areas: except as noted in N3, require building setbacks of 200 feet on both sides of perennial streams and 100 feet on both sides of intermittent streams, and prohibit vegetation clearing within 150 feet of perennial streams and 75 feet of intermittent streams, except to improve wildlife habitat. Setbacks shall be measured from the midline of perennial and intermittent streams.

N2. Urban areas: except as noted in N3, require building and clearing setbacks of 100 feet on both sides of perennial streams and 75 feet on both sides of intermittent streams, as measured from the midline. For the purposes of riparian mitigation, "urban areas" shall be defined as areas within any of the 22 Defined Communities listed on page II:3 of the General Plan wherein the average density exceeds 1 dwelling unit per 2 acres.

N3. These building and/or clearing setbacks may be reduced by as much as 50% (but in no case to less than 50 feet) if the proper authority finds that a narrower setback:

a) would not increase the potential for erosion, due to substantial existing vegetation cover and soil and slope stability, and

b) would still encompass the 100-year floodplain, and

c) would fully protect existing riparian vegetation at the site.

Alternatively, the setbacks may be decreased if the proper authority finds that this would be appropriate given existing development near the stream in the vicinity, or is necessary to avoid a "taking" of private property. If so, careful design measures shall be required to protect riparian habitat (e.g., limit the amount of clearing and fencing allowed, and locate it on the side away from the stream).

N4. Areas where vegetation clearing is prohibited shall be protected by open space zoning. Limited clearing shall be allowed, however, if it is part of a wildlife habitat enhancement plan approved by the County.

N5. Building and clearing setbacks of up to 75 feet shall be required on both sides of ephemeral streams if the proper authority finds that it is necessary to protect relatively undisturbed riparian woodland.

N6. Minimize the number of road crossings of streams, and design crossings to be perpendicular to streams, to minimize impacts on riparian habitat. Prohibit off-road vehicles and heavy construction equipment within the setbacks of streambeds unless there is a demonstrated need and no feasible alternative.

N7. Water projects shall be required to maintain instream flows in natural waterways adequate to maintain the fisheries and riparian vegetation, and in no case should these flows be lower than the average yearly minimum (late summer flows).

N8. For instream projects such as bridges and channel alterations, County staff shall cooperate with the Department of Fish and Game to obtain adequate fish and wildlife protection through Streambed Alteration Agreements, when required.

N9. A project involving modification or replacement of unlined water supply ditches or the water flow in them must include the mitigation of impacts on wildlife identified by the Environmental Review for that project.

N10. Regulate grazing when appropriate, e.g., to mitigate for direct impacts on riparian habitat.

N11. No introductions of fish or amphibians shall be permitted in aquatic habitats without (a) full consultation with the Department of Fish and Game, and (b) a finding by a qualified biologist that no target amphibians are likely to breed in the site or be adversely affected by dispersal of the introduced species within the watershed.

N12. Require suitable erosion control measures to avoid increasing sedimentation of aquatic habitats.

N13. Culverting, piping or lining of intermittent or perennial streams by private entities is discouraged unless no alternative is feasible. Where valuable riparian habitat is destroyed by such necessary action, alternate habitat improvements may be required on or off site.

Reservoirs, Lakes, and Ponds

O1. Setback requirements shall be as for streams, but shall be measured from the normal annual high-water level. For reservoirs and man-made ponds, setback requirements shall be determined based on whether the pre-existing stream was perennial, intermittent, or ephemeral, in the judgement of the proper authority.

O2. Other mitigation measures shall be as required for streams.

Springs, Seeps, and Fresh Emergent Wetlands

P1. Prohibit filling or ground-disturbing activities that would disturb these habitats.

P2. Require suitable erosion control measures to avoid sedimentation of these habitats.

P3. Require that the water supply for wetlands be maintained at a sufficient quantity and quality to maintain the existing habitat conditions.

Wet Meadows and Aspen Groves

The following measures apply to wet meadows, associated stands of willows (including shrubby growths), and aspen groves (whether associated with wet meadows or not).

Q1. Prohibit new structures. Prohibit new or improved roads and all vegetation clearing unless there is a demonstrated need and no feasible alternative.

Q2. Avoid altering natural drainage patterns through wet meadows, e.g., by roadbeds, pipelines, and other features that would block surface or subsurface flows.

Q3. Regulate livestock grazing to prevent damage to the vegetation (see C1 and H4) and to avoid disturbance of does with young fawns, as these are important fawning areas.

Vernal Pools

The following measures apply to all vernal pools greater than 0.25 acres and smaller ones that support rare plants or animals. (Other small vernal pools shall be protected to the extent feasible).

R1. Prohibit construction, vegetation clearing, or any ground-disturbing activities within 150 feet of the high water level of each pool.

R2. Within the small watershed that feeds each pool:

a) avoid disturbing the natural surface and subsurface drainage patterns and thereby reducing the amount of water draining into the pool,

b) require adequate erosion control measures to prevent sedimentation, and

c) if construction occurs in the watershed, require special measures to minimize contamination of the pool with urban runoff.

Valley Oak Woodland

S1. Prohibit removal of valley oaks greater than 6 inches diameter (at a height of 4.5 feet), except where required for public safety, and minimize removal of smaller valley oaks, including seedlings.

S2. Limit residences to one per 10 acres, and prohibit commercial structures. Locate roads to avoid crossing within the dripline of valley oaks, if possible, or otherwise to minimize such disturbance.

S3. In order to facilitate reproduction of oaks, prohibit clearing or grading in the understory of valley oak woodland, except in a limited area around each residence.

S4. Prohibit off-road vehicles, to avoid compaction of soils and disturbance of young oaks.

S5. Regulate grazing to allow adequate oak reproduction.

Old Growth Coniferous Forest

T1. Minimum lot size of 37 acres, if not already smaller.

T2. Prohibit removal of trees greater than 12 inches diameter, except where there is no feasible alternative for siting of permitted roads and structures. Prohibit removal of all trees greater than 24 inches diameter. Trees greater than 12 inches diameter may be removed when clearly required for public safety.

T3. Prohibit clearing of vegetation or downed wood except in the immediate vicinity of residences.

T4. Prohibit removal of snags except where clearly required for public safety.

5. COMMON HABITATS (Third Priority)

The mitigation measures below apply only to COMMON HABITATS that are classified as Third Priority Wildlife Areas (see Appendix B).

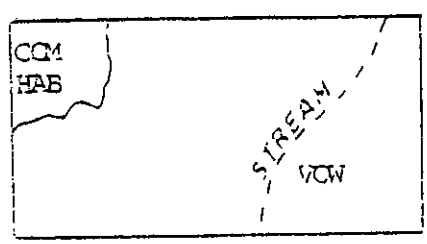
U1. Some protection for these COMMON HABITATS will be provided by riparian setbacks and protection of TARGET USE-AREAS.

U2. Temporary disturbances shall be mitigated by replanting disturbed areas with trees and shrubs that are native to the site (of herbaceous plants, if trees and shrubs were not present historically).

U3. Where a COMMON HABITAT located on a proposed development site is determined to be of considerable value to wildlife, open space zoning shall be used to conserve 20% of the site or the entire habitat area, whichever is less. This percentage may be reduced if habitat quality is substantially improved by other mitigation measures on the site. Portions of the site that are set aside to conserve TARGET HABITATS and TARGET USE-AREAS shall be counted toward this 20% requirement. (In some cases, mitigation measures for TARGET HABITATS and TARGET USE-AREAS may required setting aside substantially more than 20% of a given site.)

U4. Habitat improvements may be required elsewhere on the site to mitigate for permanent habitat losses.

NOTE: The parenthetical phrase of U3 above, states, "In some cases, mitigation measures for TARGET HABITATS AND TARGET USE-AREAS may require setting aside substantially more than 20 percent of a given site." For example, the 40 acre parcel sketched below has a VALLEY OAK WOODLAND, a PERENNIAL STREAM, and 5 acres of COMMON HABITAT that is a Third Priority (i.e., "of considerable value to wildlife"). The stream setbacks and the VOW that will be preserved comprise 35 percent of the 40 acres. Since this is greater than the 20 percent, the developer cannot be <u>required</u> to preserve <u>any</u> of the COMMON HABITAT. If the TARGET HABITATS were instead only 10 percent of the site, then an additional 10 percent of the (4 acres of the site, Third Priority COMMON HABITAT) would be required to be preserved. This illustrates the intent of the wildlife mitigation system, which is to concentrate on preserving the higher priority habitat while still allowing the developer economic use of his land.

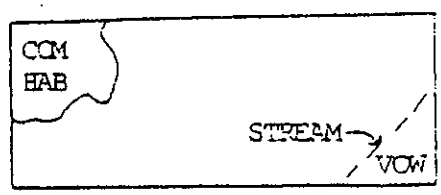


See following page for more illustrations

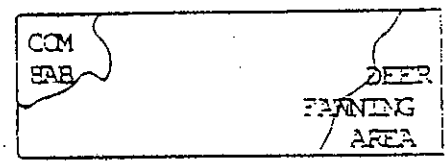
TARGET and COMMON HABITATS

How much gets preserved?

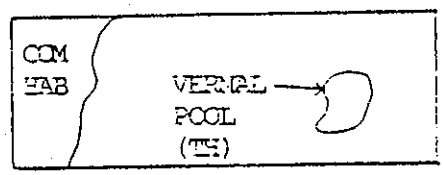
Example 1: 10 percent of site is Third Priority COMMON HABITAT and 20 percent of the site is TARGET HABITAT. (Note: all TARGET HABITATS are First or Second Priority) All 20 percent if the site would be preserved.



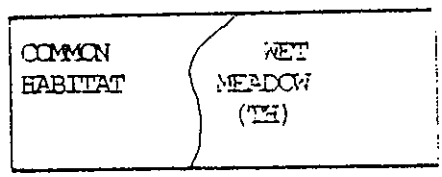
Example 2: 10 percent of site is Third Priority COMMON HABITAT and 20 percent is TARGET HABITAT. Only that 20 percent of the site classified as TARGET HABITAT would be preserved.



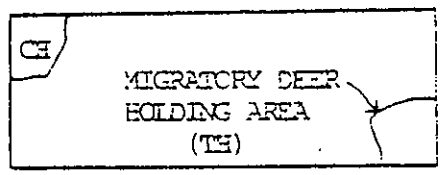
Example 3: 20 percent of site is Third Priority COMMON HABITAT and 10 percent is TARGET HABITAT. Of the one-half COMMON HABITAT and all of the TARGET HABITAT would be preserved for a total of twenty (20) percent of the site.



Example 4: 50 percent of site is Third Priority COMMON HABITAT and 50 percent is TARGET HABITAT. All of the TARGET HABITAT would be preserved but none of the COMMON HABITAT.



Example 5: 5 percent of site is Third Priority COMMON HABITAT and 5 percent is TARGET HABITAT. Both TARGET HABITAT and COMMON HABITAT areas would be preserved for a total of ten (10) percent of the site.



The section in the Wildlife Handbook applicable to these examples are:
Page III-5 E (1) (b)
Page A-5 L
Appendix B

CHAPTER IV

PROCESS FOR EVALUATING WILDLIFE IMPACTS

Contents of Chapter IV

A. Description of Process

1. General Approach

For all the types of projects described in Chapter III (Section C), County staff shall conduct a Wildlife Evaluation to assess the impacts on wildlife and assign appropriate mitigation measures, if required. This process shall consist of an Office Evaluation, Site Inspection, and if necessary, additional Field Studies and selection of appropriate mitigation measures from those presented in Chapter III.

2. Office Evaluation

a) Determine whether a Wildlife Evaluation is required. The Wildlife Handbook applies to all projects under the County's jurisdiction that are subject to review under CEQA; common examples are rezonings, use permits, development agreements, and tentative parcel or subdivision maps. It also applies to grading permits, even those that are not subject to CEQA review. It does not apply to ministerial actions such as building permits and final parcel maps.

b) If a Wildlife Evaluation is required, consult the Wildlife Maps for information on Wildlife Areas present on the site, or near enough to require mitigation. Fill out the top portion and "Map Check" columns of the Wildlife Evaluation Form (Figure IV-1). Specifically, look for the following types of Wildlife Areas:

- o TARGET HABITATS $\leq$ 500 feet from the site (to allow for mapping error and possible need for setbacks or other protections for target habitats adjacent to the site); and/or
- o TARGET USE-AREAS $\leq$ 1/4 mile (to allow a buffer);
- o COMMON HABITATS $\leq$ 250 feet (except rsp, crp, ags, pas, and bar, which are Fourth Priority); and
- o Perennial streams $\leq$ 200 feet and intermittent streams $\leq$ 100 feet (to determine whether a setback is required). For this information, consult USGS topo maps.

c) If the project is located on an unmapped quad, consult the list of unmapped TARGET HABITATS and TARGET USE-AREAS (Appendix G), and consult the latest DFG Deer Herd maps for information on migratory deer TARGET USE-AREAS. Note this information in the Map Check columns of the Wildlife Evaluation Form (Figure IV-1), but record the source of the

information. Look for the types of Wildlife Areas described in Step 2b, except COMMON HABITATS, which are not included in Appendix G.

d) If there are TARGET HABITATS present, consult the aerial photos and the field evaluation forms filled out during the Wildlife Project for information on habitat quality.

e) If there are TARGET USE-AREAS present, consult the relevant data files for further information.

f) Consult the project file for further information on First, Second, or Third Priority Wildlife Areas that may be present (e.g., review any previous studies and any comments that have been submitted by citizens and agencies).

g) Consult Chapter III to determine the required mitigation, and enter in pencil on the Wildlife Evaluation Form. For TARGET HABITATS and TARGET USE-AREAS near, but not on, the site, determine whether they are close enough to require mitigation.

h) On a map of the project site, indicate the locations of all Wildlife Areas noted during the Office Evaluation.

3. Site Inspection

a) The purpose of the Site Inspection is to field-check the presence of Wildlife Areas noted during the Office Evaluation; to note their size, location, and value; to look for and evaluate any additional Wildlife Areas that may be present; and to obtain sufficient information to assess impacts on Wildlife Areas and assign appropriate mitigation measures. The Site Inspection is to be conducted by Planning Department staff.

b) At the site, fill out the remaining sections of the Wildlife Evaluation Form. You should take with you the relevant aerial photos and the map prepared in Step 2h. Look in particular for TARGET HABITATS that were not mapped on the Wildlife Maps (e.g., because they were too small or are hard to map from aerial photos). Look also for habitat features that would indicate high quality habitat or potential occurrence of TARGET USE-AREAS. In addition, determine whether the COMMON HABITATS present qualify as Third Priority areas. If you determine that only Fourth Priority areas are present, note on the form how you made that determination.

c) At the site, make any necessary corrections or additions to the Wildlife Areas mapped in Step 2h of the Office Evaluation. In particular, map the approximate locations of TARGET HABITATS, TARGET USE-AREAS, and other important

habitat features noted on the site. If the site is located on an unmapped quad, use the aerial photos in conjunction with topo maps to roughly map any COMMON HABITATS that qualify as Third Priority.

d) At the site, make a preliminary assessment of impacts on Wildlife Areas and appropriate mitigation measures.

e) If information obtained during the site inspection does not correspond to information from the Office Evaluation, try to resolve the differences. Contact the DFG or other biologists if necessary.

4. Field Studies

a) The purpose of conducting Field Studies (beyond the Site Inspection) is to obtain additional information that could not be obtained during the Office Evaluation and Site Inspection and is necessary to assess impacts on Wildlife Areas and assign appropriate mitigation measures. If Field Studies are necessary, seek further information on the occurrence of these Wildlife Areas from the DFG, local biologists, and neighboring residents before conducting the Field Studies.

b) Determine whether Field Studies are necessary to obtain additional information on First, Second, or Third Priority Wildlife Areas that are located on the site, or suspected to be present, or located near enough to the site to require mitigation. In addition, refer to Table IV-1 to determine whether to require field surveys for TARGET USE-AREAS that may potentially be present, based on the habitat and elevation of the site.

Table IV-1 was based on the following premises:

- No surveys should be required for species that are highly unlikely to occur on private lands in the County, unless they are highly vulnerable to human impact and there is particularly suitable habitat present on the site.

- On relatively small project sites, surveys should be required only for the species that are most likely to be encountered (particularly suitable habitat present), and for species that have specific habitat needs that make it easy to rule out most sites as potential habitat.

- On relatively large project sites, where there is a greater potential for even very rare species to occur, surveys should be required for most species that could potentially use the site, based on its elevation and habitat.

c) Before requiring Field Studies by a biologist, consult with the developer. If the developer agrees to provide adequate mitigation for the Wildlife Areas that are suspected to occur on site, then no further Field Studies are needed.

d) If necessary, arrange for a qualified biologist to visit the site and conduct field surveys for TARGET USE-AREAS. At the discretion of the Planning Department, this task could be conducted by a DFG biologist, a county staff biologist, or a consultant. Consultants' fees should normally be paid by the developer, but the consultant should contract directly with the County.

For some TARGET SPECIES, it will be sufficient to survey for signs of use (e.g., deer tracks and pellets), rather than actually observing the TARGET SPECIES or TARGET USE-AREA. Similarly, if the biologist can rule out the presence of suspected TARGET USE-AREAS based on habitat characteristics or other strong evidence at the site, then further field surveys for those TARGET USE-AREAS will not be required.

e) In addition, require a site visit by a qualified biologist if necessary to confirm the possible presence of a TARGET HABITAT noted during the Site Inspection (step 2b) or to resolve a conflict with the developer regarding habitat quality.

5. Selecting Mitigation

a) If it appears that there may be significant impacts on First, Second, or Third Priority Wildlife Areas (see Appendix B), consult with the DFG for further information and suggestions on mitigation.

b) Based on the Office and Field Evaluations and guidelines in Chapter III, recommend mitigation measures for the significant impacts on wildlife.

c) If the Planning Department and developer cannot reach agreement on appropriate mitigation measures, ask the developer to provide additional information that would be useful in resolving the conflict. Usually this will require further field surveys and/or analysis of proposed mitigation measures by a qualified biologist.

B. Decision System for Wildlife Evaluation

1. Determine whether a Wildlife Evaluation is required.

Alternative 1a. The project is subject to review under CEQA (e.g., a rezoning, use permit, development agreement, or tentative parcel map is required). **A Wildlife Evaluation is required: Go to #2.**

Alternative 1b. The project requires a grading permit. **A Wildlife Evaluation is required: Go to #2.**

Alternative 1c. Neither of the above (e.g., building permit or final parcel map). **No Wildlife Evaluation is required.**

2. Determine whether Field Studies are required (beyond the Site Inspection; see Section A4).

First conduct an Office Evaluation and a Site Inspection (see Sections A2 and A3, above) and make a preliminary selection of mitigation measures (Section A5). Then decide which of the alternatives below is applicable.

Alternative 2a. The Planning Department selects mitigation measures for known or probable Wildlife Areas located on or near the site -- or potentially located there, based on Table IV-1 -- and the developer agrees to these mitigation measures. **No Field Studies or further Wildlife Evaluation are required.**

Alternative 2b. The developer does not agree to these measures. **Field Studies are required: Go to #3.**

Alternative 2c. The Planning Department concludes that no First, Second, or Third Priority Wildlife Areas are located on or near the site, and that no field surveys for TARGET USE-AREAS are necessary, based on Table IV-1. No Field Studies or further Wildlife Evaluation is required, and no wildlife mitigation is required.

3. Determine whether further Field Studies are required.

First conduct Field Studies as described above (Section A4) and adjust the selected mitigation measures based on the results. Then decide which of the alternatives below is applicable.

Alternative 3a. The developer agrees to the selected mitigation measures. No further Field Studies or Wildlife Evaluation required.

Alternative 3b. The developer does not agree to these measures. Further Field Studies required, to be paid for by the developer: Repeat #3.

WILDLIFE EVALUATION PROCESS

Entitlement Needed From Planning? — NO → No wildlife evaluation required

YES

Project subject to CEQA Review or Grading Permit? — NO → No wildlife evaluation required

YES

DO WILDLIFE EVALUATION
- Consult wildlife maps
- Consult with Fish and Game
- Conduct site inspection
- Complete wildlife Evaluation Forms

Are there potential significant impacts on wildlife? — NO → No mitigation for wildlife impacts required

YES

DO FURTHER ANALYSIS
- Consult Target Habitat Field Notes and/or
- Consult information on Target Use Areas
- Analyze aerial photos
- Rate quality of habitats on-site
- Consult with Fish and Game on mitigation
- Require field studies if necessary
- Select preliminary mitigation measures

Will the project cause significant impacts on First, Second or Third Priority Areas? — NO → No mitigation for wildlife impacts required

YES

Will developer agree to appropriate mitigation or project changes to reduce impacts? — YES → Negotiate mitigation or changes and schedule project for hearings or action by Director

NO

DO FIELD STUDIES
if developer disputes finding of significance or mitigation measures
OR
REQUIRE EIR

→ Developer may appeal requirements to Board of Supervisors

WHEN FIELD STUDY or EIR is completed and reviewed, attach appropriate mitigation to project

→ Schedule project for hearings or action by Director

MONITOR PROJECT for compliance with mitigation

Table IV-1. When to Require Field Surveys for Wildlife TARGET USE-AREAS

There are undoubtedly many TARGET USE-AREAS in the study area that were not mapped, due to incomplete data on most TARGET SPECIES. Thus, even if a TARGET USE-AREA is not mapped on the project site, or near enough to require mitigation, field surveys may be required to determine if TARGET USE-AREAS are present.[a] Guidelines for field studies are provided in Section A4. Surveys may be avoided if a developer offers adequate mitigation for the TARGET USE-AREAS that could potentially occur onsite or nearby. Otherwise, surveys should be required if:

- o evidence suggesting that TARGET USE-AREAS are present is obtained during the Office Evaluation and/or Site Inspection; or
- o a TARGET USE-AREA is potentially present, based on the habitat and elevation range shown below, and the project site is at least the acreage shown below:

	Characteristics of Project Site		
TARGET USE-AREAS[a]	Minimum Acreage	Elev. (feet)	Habitat[b,c]
MAMMALS			
Spotted bat	*u		
Pale big-eared bat	*u		
BIRDS			
Double-crested cormorant	37	≤ 3,000	Within 200 ft of a lake[b] ≥ 20 acres
Great blue heron	37	≤ 3,000	Within 1/4 mile of a large river or a lake ≥ 20 acres
Great egret	37	≤ 3,000	Within 1/4 mile of a large river or a lake ≥ 20 acres
Black-crowned night-heron	*u		
Wood duck	20	≤ 3,000	Within 200 ft of a stream or lake bordered by dense, mature woodland[c]
Harlequin duck	*u		

Table IV-1 (cont.)

TARGET USE-AREAS	Characteristics of Project Site: Minimum Acreage	Elev. (feet)	Habitat
Cooper's hawk	20	≤ 6,000	Dense, mature oak woodland or riparian woodland
Northern goshawk	20	≥ 4,500	Dense, mature coniferous forest with canopy ≥ 40 ft tall
Sharp-shinned hawk	*u		
Golden eagle	20	All	Any habitat with mature trees or a nearly vertical cliff ≥ 30 ft tall
Northern harrier	*u		
Black-shouldered kite	*u		
Bald eagle	160	≤ 6,000	Any habitat with mature trees within 1/4 mile of a large river or a lake ≥ 5 ac
Osprey	160	≤ 6,000	Same as for bald eagle
Prairie falcon	10	≤ 3,000	Nearly vertical cliff ≥ 30 ft tall
American peregrine	10	All	Nearly vertical cliff ≥ 50 ft tall
Long-eared owl	37	≤ 5,000	Within 200 ft of wet meadow or riparian woodland (MRI or VRI)
Burrowing owl	37	≤ 2,000	Annual grassland, pasture, or unplowed borders of cropland
Great gray owl	10	≥ 4,000	Within 600 ft of a wet meadow system ≥ 15 acres
Spotted owl	37	≥ 3,000	Dense, mature forest of conifers, or conifers and oaks, with canopy ≥ 40 ft
Pileated woodpecker	37	≥ 2,500	Same as for spotted owl
Willow flycatcher	10	≥ 3,000	Wet meadow ≥ 5 ac with patches of willows

Table IV-1 (cont.)

TARGET USE-AREAS	Characteristics of Project Site: Minimum Acreage	Elev. (feet)	Habitat
Purple martin	*u		
Tricolored blackbird	*u		
Yellow-breasted chat	*m		
AMPHIBIANS			
All target species	*m		
HARVEST SPECIES			
Migratory deer	160[d]	≥ 2,000	All habitats except barren and cropland
Resident deer	37	≤ 3,000	All habitats except barren and cropland
Trout and salmon	*m		

---

* No survey is needed for TARGET USE-AREAS of this species, unless evidence is obtained indicating they may occur on the site, or near enough to require mitigation. The reasons for not requiring surveys are:

  u = Relatively unlikely to occur on private lands in the County

  m = Mitigation for TARGET HABITATS should be sufficient to protect TARGET USE-AREAS of this species, if present.

[a] Note that surveys are required for the TARGET USE-AREA of each species (as identified in Table II-1), not simply for the presence or absence of the species.

[b] In this table, "lake" means a lake, pond, or reservoir.

[c] In this table, unless specified otherwise, "mature" woodland or forest means the canopy is formed by trees 20 feet or taller, and "dense woodland" means the canopy cover is 60% or more.

[d] For smaller sites, rely on the Wildlife Maps and the latest DFG deer herd maps, unless contradicted by additional information.

Figure IV-1

WILDLIFE EVALUATION FORM
Tuolumne County Planning Department[a]

Owner _____ AP# _____ ___1/4 ___1/4 Sec___ T___ R___

Proposal _____

Surrounding Parcel Size _____ Quad _____

Acreage _____ Elevation (ft.) _____ Slope (%) _____

Map Check by: _____ Date _____

Field Check by: _____ Date _____

		MAP CHECK				FIELD CHECK				FIELD CHECK VALUE			MITIGATION MEASURES		
		Present on site	Quantity	Acreage	% Site Coverage	Present on site	Quantity	Acreage	% Site Coverage	Low	Medium	High	Require pres.	Handbook Mitig. #	Other
TARGET HABITATS	Perennial Stream, Ditch														
	Intermittent Stream, Ditch														
	Riparian Trees, ≥ 20 ft.														
	Lake, Pond, Reservoir														
	Vernal Pool														
	Spring, Seep														
	Emergent Wetland														
	Wet Meadow														
	Aspen Grove														
	Valley Oak Woodland														
	Old Growth Conifer														
HABITAT FEATURES	Cliff ≥ 20 ft.														
	Snags ≥ 6 in.														
	Logs ≥ 6 in.														
DEER HABITAT	Known Conc. Area[+]														
	Suspected Conc. Area[+]														
	Critical Winter Range[+]														
	Fawning Area[+]														
	Edge[+]														
	Migration Corridor[+]														

A.P. # _____

		MAP CHECK				FIELD CHECK				FIELD CHECK VALUE			MITIGATION MEASURES		
		Present on Site	Quantity	Acreage	% Site Coverage	Present on Site	Quantity	Acreage	% Site Coverage	Low	Medium	High	Require Preserv.	Handbook Mitig. #	Other
DEER USE	Browsed Vegetation+														
	Tracks, Pellets+														
	Deer Trails+														
	Deer Seen+														
OTHER WILDLIFE	Target Species+														
	Species Conc.+														
	Raptor Nest+														
	Other+														
COMMON HABITATS (FILL IN BLANKS)	1.														
	2.														
	3.														
	4.														
	Trees ≥ 20 ft.														
	Shrubs ≥ 3 ft.														

NOTES _____

+ = Provide details and supporting evidence below (or on back of sheet), if you note this item during field check or discussions with other observers.

a Enter a "?" for items that require further checking. Enter a "*" for items that require consultation with the Department of Fish and Game.

CHAPTER V

WILDLIFE MONITORING PROGRAM

Contents of Chapter V

A. Purpose and Importance of Monitoring

A monitoring program would assess the success or failure of the County's wildlife policies and keep the wildlife inventory up-to-date. The four goals of the monitoring program are: (1) assess the success or failure of mitigation measures for individual projects, (2) evaluate general approaches to mitigation, (3) expand and update the wildlife data base, and (4) provide a basis for assessing cumulative impacts on wildlife.

Available funding is limited and may restrict the degree to which this monitoring program can be implemented. Nevertheless, monitoring is an integral part of the Wildlife Project, essential to its overall success. Thus, if the project as a whole is adopted, at least a modest portion of the monitoring program should be implemented along with it.

The sections below suggest how to achieve the four goals of wildlife monitoring.

B. Monitoring Mitigation Measures for Individual Projects

For individual projects, the purpose of monitoring is to ensure that the required mitigation measures are actually implemented and meet some standard of minimal adequacy. Ideally, all projects should be monitored during and immediately after construction, and some projects should be monitored over longer time periods as well. During construction, monitoring would focus on measures designed to avoid or minimize impacts, e.g., erosion control measures, protection of large trees and sensitive habitat areas, and buffer zones to minimize human disturbance of raptor nests. After construction, monitoring would include a final evaluation of these preventative measures and would also focus on measures such as habitat improvement that are designed to compensate for unavoidable impacts. In addition, long-term monitoring would be needed to evaluate mitigation measures such as revegetation that require extensive time to implement.

Requirements for monitoring should be explicitly incorporated into the appropriate permit or development agreement, and should include the following elements:

- Performance standards
- Corrective measures required if the standards are not met
- Intervals at which monitoring will be conducted
- Responsibilities for conducting and paying for monitoring, as well as any corrective measures

Figure V-1 is a form to be used by County staff for monitoring individual projects. Depending on available staff time, a project could be monitored at predetermined intervals, or it could be monitored irregularly, whenever it is convenient for a planner to visit the project site.

When monitoring would require a consultant or extensive County staff time, the project sponsor should be held responsible for these costs. In any case, if monitoring reveals any deficiencies in the implementation of required mitigation measures, project sponsors will be required to correct them.

Long-term monitoring would be appropriate for the following types of mitigation measures:

- Revegetation (monitor plantings until they are established and need no further maintenance; in most cases, this will require at least 3 years for native trees and shrubs)

- Locked gates (the objective would be to ensure that gates actually are locked and are effective at preventing vehicle access to sensitive areas; monitoring should ideally continue indefinitely)

- Guzzlers and other habitat improvements that may require periodic maintenance (check periodically to determine if they are still working properly)

- Any other measures that require continued maintenance to be effective

- In some cases, if a mitigation measure is considered "experimental", monitoring could be required to determine if it provides the desired benefits to wildlife. An example is the use of special reflectors along roadways to warn deer of oncoming traffic at night.

C. Monitoring General Approaches to Mitigation

Some mitigation measures may be considered experimental and may require monitoring to determine if they actually benefit wildlife to the extent desired. Other measures may be controversial because they are considered too difficult to implement or too constraining to development. Although it is unlikely that the County would have sufficient funds to conduct actual studies of the success or failure of various types of mitigation measures, it could maintain a "Mitigation Update" file on this subject. Sources of information would include:

- Studies described in various publications

- o Agreements and research studies with educational institutions utilizing student work study degree programs or faculty expertise.

- o Discussions with biologists from the Department of Fish and Game, Stanislaus National Forest, and Bureau of Land Management

- o Comments submitted by County staff, local biologists, developers, and other concerned citizens

In addition, the County planning staff should devote at least one in-house meeting each year to share information on mitigation and evaluate the relative success of selected measures. This would also be an excellent task for a Wildlife Technical Advisory Committee, if one is appointed.

D. Updating the Wildlife Data Base

The following steps would help ensure that the County planning staff has adequate, up-to-date information on which to base its recommendations regarding wildlife:

1. Maintain and expand a collection of "Wildlife Reference" files, emphasizing references with information on the west slope Sierra Nevada, especially the TARGET HABITATS and TARGET SPECIES. Maintain a file of references on each TARGET SPECIES, TARGET HABITAT, and COMMON HABITAT, as well as more general files on wildlife biology, management, and planning.

2. Maintain a collection of "Target Distribution" files, including a file of distributional data on each TARGET SPECIES and TARGET HABITAT, documenting the reported locations on private lands in the County or nearby (within 1/2 mile). Such distributional data should be solicited from the Technical Advisory Committee and local biologists, and any other available sources. The data should be recorded on the report form in Appendix F, or if many records are contained in a single report, the relevant pages should be placed in the file. The forms should be arranged by township, range, and section within each file, to facilitate finding data on a particular project area.

3. Maintain a "Target Distribution Update" file, to include all new distributional data on TARGET USE-AREAS and TARGET HABITATS (data which has not yet been recorded on the Wildlife Maps or, for unmapped quads, on the latest version of Appendix G). All <u>new</u> distributional data should be photocopied, so it can be filed in this Update file, as well as in the "Target Distribution" file for the appropriate TARGET HABITAT or TARGET USE-AREA. The data in the Update file should be arranged in order of township, range, and section. Data in this file should periodically be added to the Wildlife Maps, but meanwhile it would be easily accessible for anyone needing data on a particular project area.

4. Maintain a "Map Corrections" file for use in revising the Wildlife Maps. Arrange by township, range, and section, and attach a map if possible.

5. Update the Wildlife Maps at least once a year, based on the information in the "Target Distributional Update" and "Map Corrections" files. If budget permits, update the mapping of COMMON and TARGET HABITATS approximately every 5 years, based on new aerial photos. If budget is limited, update only the TARGET HABITATS, and perhaps limit the revision to selected areas where the greatest changes in habitat have taken place and the most future development is expected. This more limited map update should also be based on new aerial photos.

6. Before major migration corridors or other habitat areas of migratory deer, or concentration areas of resident deer, are added to the Wildlife Maps, such data must be confirmed by the Department of Fish and Game and submitted to the Board of Supervisors, along with an explanatory report. The report shall include maps and data such as trappings, sightings, evidence of habitat use, and herd composition counts. The Board shall decide whether to add the corridors or habitat areas to the Wildlife Maps.

7. At the same time the maps are revised, update the list of TARGET USE-AREAS and TARGET HABITATS located on private lands outside the 20 Wildlife Maps (Appendix G). This list is arranged in order of township, range, and section, and could be updated easily if kept in a computer file.

8. Periodically review and update the lists of TARGET USE-AREAS and TARGET HABITATS (Tables II-1 and II-3) to determine whether there should be any additions or deletions. At a minimum, this review should take into account any changes in the special-status lists published by the relevant agencies. The review should be conducted at least once a year, with a more extensive review every 5 years.

E. Assessing Cumulative Impacts

1. Defining the Scope of an Assessment

To assess cumulative impacts, it is first necessary to identify the specific purpose of the assessment and then define its scope in terms of: (a) the projects to include (sources of impact), (b) the target resources (receiving the impacts), (c) the geographic area, and (d) the time period of interest. This section discusses how the Wildlife Maps and Inventory can contribute to the types of cumulative impact assessments the County is likely to conduct.

Purpose, and projects to include. Cumulative impacts will be probably be assessed primarily in connection with CEQA evaluations of individual projects under the County's jurisdiction, but occasionally in connection with a group of projects that are proposed in the same area at about the same time. The scope of the assessment will vary depending on the project or projects being assessed.

Target resources. The target resources will most likely be (a) species or habitats on which the impacts of individual projects are relatively minor, but the cumulative impacts may be significant; or (b) those for which there are interactions between the impacts of different projects; or (c) species or habitats for which the anticipated level of cumulative impact is so great that the County may wish to initiate a new action or policy to reduce further impacts.

Geographic area. The geographic study area will most often consist of the area of expected impact surrounding a major project, but could in some cases encompass all the lands under County jurisdiction. Although it would make sense, in some cases, to include BLM and Forest Service land as well, the present wildlife inventory would not provide the necessary data. It would also be difficult to include private lands not shown on the 20 Wildlife Maps, because the inventory includes less data on these areas and would be harder to use because it has not been transferred to maps.

Time period. The time frame will vary, but will most likely focus on impacts of present and reasonably foreseeable future projects. The Wildlife Maps will provide baseline data as of 1986.

2. Approach

The Wildlife Maps will be most useful for assessing cumulative impacts on TARGET HABITATS and COMMON HABITATS, as they were mapped fairly comprehensively. Mapping of TARGET USE-AREAS was much less complete, and thus would be less useful as a baseline to judge further impacts against. The following approaches would provide useful information for assessing cumulative impacts on wildlife habitats:

- At the time of the assessment, prepare a new habitat map of the study area, based on new aerial photos. Compare with the Wildlife Map prepared by the present project to determine the acreage converted from one habitat type to another, e.g., from blue oak woodland to annual grassland.

- Even without preparing new maps, the County could track changes in selected habitats by recording habitat changes resulting from each project under County jurisdiction. For

example, losses of riparian habitat could be monitored by recording the loss associated with each grading permit, use permit, and development agreement, etc. This approach would require some effort to initiate and considerable coordination between County departments, but would not consume much staff time once the process was established.

An analysis of habitat changes, as described above, could also be useful for addressing cumulative impacts on certain TARGET SPECIES. Reductions in the amount of old growth coniferous forest, for example, would be expected to reduce the number of spotted owls inhabiting the County.

Figure V-1: Tuolumne County -- Project Plan for Monitoring Wildlife Mitigation

Project _____ A.P.# _____ T ___ R ___ Sec ___

Location _____

Document that describes mitigation measures: _____, pages _____

Mitigation Measure	Condition #	Performance Standard	When to Monitor (D, A, L) *	Monitored By:	Date	Meets Standard? (Y,N,?,x) **

* D = during construction, A = immediately after, L = long-term monitoring
(Give recommended dates.)

** Y = yes; N = no; ? = don't know, further study required; x = didn't check
(If N or ?, explain on back of form.)

No: 303-87

APPENDIX A

Filed November 3 1987

By [signature]
Clerk of the Board

RESOLUTION

OF THE BOARD OF SUPERVISORS OF THE COUNTY OF TUOLUMNE

WHEREAS, by the adoption of its Resolution No. 682-80, adopted on August 26, 1980, this Board of Supervisors of the County of Tuolumne adopted a General Plan for the County;

WHEREAS, the Planning Commissions and this Board of Supervisors have held duly noticed public hearings regarding those proposed amendments to its general plan as described in Exhibit "A", attached hereto and by this reference made a part hereof;

WHEREAS, those proposed amendments have been reviewed and considered pursuant to the California Environmental Quality Act and its implementing guidelines;

AND WHEREAS, this Board of Supervisors, after hearing the recommendation of the Planning Commissions and reviewing the evidence presented at the said public hearings, does hereby find it to be in the public interest to make those amendments to its general plan as are set forth in said Exhibit "A".

NOW, THEREFORE, BE IT RESOLVED that this Board of Supervisors does hereby approve and adopt those amendments to its general plan as are set forth in said Exhibit "A".

BE IT FURTHER RESOLVED that the signatures of the members of this Board of Supervisors on this resolution shall constitute the endorsement of the approved and adopted amendments.

ADOPTED BY THE BOARD OF SUPERVISORS OF THE COUNTY OF TUOLUMNE ON November 3, 1987

AYES: 1st Dist. [signature]
2nd Dist. [signature]
3rd Dist. [signature]
4th Dist. [signature]
5th Dist. _____

NOES: ___ Dist. None
___ Dist. _____

ABSENT:
___ Dist. _____
5th Dist. Rankin

ABSTAIN:
___ Dist. None

[signature]
CHAIRMAN, OF THE BOARD OF SUPERVISORS

ATTEST: [signature]
Clerk of the Board

No. 303-87

Exhibit "A"

WILDLIFE

29 The County recognizes that wildlife, fish, and their habitats are important resources, which are valued by the County's citizens for recreational nature study, hunting and fishing, scientific research, education, and open space. These same values also attract visitors, a major source of revenue for the local economy.

30 The County will encourage voluntary efforts to protect and enhance its wildlife resources and educate its citizens on the values of wildlife and methods of wildlife conservation.

31 The County will seek to minimize the inherent conflict between development and wildlife habitat by encouraging further development to locate in the less sensitive or important habitat or on sites adjacent to previously developed areas. Development will be minimized in sensitive wildlife areas and large blocks of relatively undisturbed natural habitat. Cumulative impacts of future projects on wildlife will be reduced by this approach.

32 A key goal will be to maintain a continuous network of valuable wildlife habitat throughout the County in order to provide habitat corridors for wildlife that move back and forth between the larger tracts of high-quality habitat. These corridors, which will consist primarily of riparian habitats, will provide cover for deer migrating between summer and winter range. They will also make it easier for animals to recolonize areas where they have become locally extinct, as often happens in small patches of habitat.

33 Special efforts will be undertaken to protect sensitive wildlife resources, including threatened or endangered species (on federal or state lists), other animal species that are rare in the region, colonial nesting or roosting sites of uncommon species, important harvest species (fish and game), and important wildlife habitats and habitat features. The Tuolumne County Wildlife Maps and Wildlife Handbook, as well as other available references, will be consulted for information on sensitive wildlife resources.

34 Before approving any development proposal, the County will determine whether the project is likely to have negative impacts on any state or federally listed threatened or endangered animal species, and if so, will consult fully with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

35 The County will minimize the impacts of development on important wildlife habitats that are limited in acreage on private lands in the County. Such habitats include riparian woodlands, wet meadows, vernal pools, other wetlands, perennial and intermittent streams, lakes and ponds, aspen groves, valley oak woodlands, and old-growth coniferous forests.

36 The County recognizes that activities such as timber harvest, fuelwood cutting, and range improvement, which do not require special permits from the County, do have impacts on important wildlife habitats that are rapidly being diminished in the region, including mature oak woodlands and coniferous forests. The County will encourage and investigate feasible measures to reduce the cumulative impacts of such activities on wildlife.

37 The County will limit development in important deer concentration areas, particularly in critical winter range. Projects in major migration corridors will be required to minimize barriers and hazards to migrating deer.

38 To the extent possible, the County will require project designs to: (a) protect important habitat features that are difficult or impossible to replace, such as springs and seeps, large trees, hardwoods (in coniferous forest habitats), and relatively undisturbed caves, and (b) protect or replace valuable habitat features such as snags, downed logs, manmade water sources, and other features for which replacement is feasible.

39 If the County decides to approve a project despite unavoidable significant impact on wildlife, it will require the developer to provide appropriate mitigation. Mitigation will be in the form of habitat improvements or protection, located as close to the impact site as possible, or in an area where it would be most advantageous to wildlife.

WILDLIFE

Sources of Information

Y To ensure properly informed decisions in implementing the wildlife policies, the County will utilize the Tuolumne County Wildlife Inventory Maps and Planning Handbook, which will be revised and updated at appropriate intervals. Between revisions, the County will maintain files of new wildlife information that becomes available. County staff will also refer to recent California Natural Diversity Data Base maps and other materials that are pertinent to decisions regarding wildlife.

Z The County will consult with the California Department of Fish and Game and, when appropriate, the U.S. Fish and Wildlife Service, regarding impacts on wildlife.

AA County staff will selectively monitor the success and failure of the implementation measures recommended below, including various types of mitigation, and will use this information in refining future efforts.

BB The County will initiate cumulative impact assessments for selecte wildlife resources if it appears that the combined effects of multipl projects may be significant.

Large-Scale Planning Measures

CC The most effective means of protecting wildlife resources and avoiding o minimizing impacts are those instituted at a County-wide planning level The County will implement the following measures:

1. Use General Plan amendments and zoning ordinances to retain the mor important wildlife areas in large parcels, limit the intensity o development, and provide for a continuity of quality wildlif habitat.

2. Establish a Wildlife Technical Advisory Committee of knowledgeabl citizens to advise the County on wildlife planning and mitigatio measures, and to seek funding for wildlife protection.

3. In coordination with the California Department of Fish and Game, provide information and educational programs to landowners on how tc improve wildlife habitat on their property.

4. Coordinate with BLM and the Forest Service to provide better protection for deer and other wildlife that move between their properties and land under County jurisdiction.

5. Enhance wildlife habitat on lands that are owned or managed by the County, e.g., by landscaping with native plants, preserving old trees and snags, and restoring natural habitats.

6. When funding is available, acquire important wildlife areas on a willing seller basis. This can include outright purchase, land donations, trades, purchase of easements, and related options. After acquisition, these habitats shall be maintained and improved by the County or turned over to another appropriate entity for management.

7. Cooperate with land trusts and other private organizations that are attempting to acquire, protect, and improve important wildlife areas.

8. When funding is available, conduct early environmental assessments of special planning areas within the County, to incorporate wildlife protections early in the planning process.

9. If possible, employ a planning staff member (or retain a private consultant) with special expertise on wildlife biology to handle wildlife issues.

10. In coordination with the County Assessor's Office, seek reductions of property taxes for areas preserved for wildlife.

Mitigation Measures for Individual Projects

DD In devising appropriate mitigation measures for individual projects, County planners will follow a systematic process using the Tuolumne County Wildlife Maps and Wildlife Handbook. These tools are intended to facilitate a consistent, fair, and cost-effective approach to wildlife mitigation that provides the greatest protection for the most sensitive resources.

EE Grading can have severe impacts on wildlife. Thus, wildlife impacts shall be assessed, and appropriate mitigation agreed upon, before the County approves grading permits, tentative land division maps, or other discretionary permits involving grading.

FF Mitigation shall address indirect as well as direct impacts of development. For example, mitigation for a zoning change shall be related to the maximum amount of permitted development, not just the current proposal, unless limited by a development agreement. In addition, development of growth-inducing features such as roads and water systems shall address the effects of such growth on wildlife resources.

GG The preferred approach for mitigation shall be to avoid or minimize impacts by appropriate project design or, in the case of temporary impacts, to restore the affected environment. If such measures are not feasible or sufficient, other mitigation will be required.

HH If feasible, mitigation shall involve creating, protecting, or improving habitats as similar as possible to those being disturbed by the project. This replacement habitat shall be located adjacent to the project site or where most advantageous to wildlife of the County.

II Where a common habitat type located on a proposed development site is determined to be a Third Priority Wildlife Area (see Wildlife Handbook, Appendix B), open space zoning shall be used to conserve 20% of the site or the entire habitat area, whichever is less. This percentage may be reduced if habitat quality is substantially improved by other mitigation measures on the site and/or by an equal amount of TARGET USE AREAS or HABITATS that must already be preserved on-site.

JJ When creating or restoring wildlife habitats, the goal shall normally be to mimic the natural, undisturbed condition of each habitat type, using plants native to the local area.

KK To protect fish and other aquatic animals, the County will cooperate with the Department of Fish and Game (DFG) to obtain adequate habitat protection in connection with Stream or Lake Alteration Agreements and instream flow agreements when required for developments. Other protections will include erosion control measures and riparian setbacks.

Implementation of Mitigation Measures

LL To ensure that mitigation measures for a project are actually implemented, they shall be incorporated into development agreements, use permits, permanent easements, or other enforceable documents. The County shall require performance bonds or other security or shall impose fines or other penalties for violations or mitigation agreements.

MM Mitigation measures designed to protect or enhance wildlife habitat shall be described in a "wildlife habitat management plan," which shall describe the purpose, methods, and rationale of the measures in sufficient detail to permit a qualified biologist to judge their likelihood of success.

NN Post-project monitoring by the County is essential for ensuring successful implementation of mitigation measures, especially revegetation plans and other measures that require extensive time to implement. The project sponsor may be held responsible for costs of monitoring the success of mitigation measures if such is determined to be appropriate in a particular case. Otherwise, the County shall be responsible for the monitoring. The project sponsor shall be responsible for remedying deficiencies of the mitigation.

OO A project involving modification or replacement of unlined water supply ditches or the water flow in them must include the mitigation of impacts on wildlife identified by the Environmental Review for that project.

APPENDIX B

FOUR PRIORITY CATEGORIES FOR WILDLIFE PROTECTION IN TUOLUMNE COUNTY

In this appendix, Tuolumne County's Wildlife Areas are classified into four priority categories, based on their legal status, rarity in the County, importance to wildlife, and sensitivity to human disturbance. "Wildlife Areas" include COMMON HABITATS, TARGET HABITATS, and TARGET USE-AREAS (see Tables II-1, II-3, and II-4). The highest priority Wildlife Areas are those that are most vulnerable to significant impacts from human disturbance. As explained in Chapter III, the higher the priority, the stronger the required mitigation measures. For the Fourth Priority areas (the lowest priority), no wildlife mitigation is required.

1. First Priority areas. TARGET USE-AREAS of threatened or endangered animal species listed by the state or federal government; i.e., areas used regularly and considered important for maintaining the species' current population level in the County. These areas have the greatest legal protection and highest sensitivity to human impact. The only uses to be allowed are nature study and research, hiking and equestrian trails, grazing, hunting, fishing, and in some cases wood-cutting and timber harvest. Uses would be carefully controlled within these areas and surrounding buffer zones to ensure preservation of wildlife values.

   a. Bald eagle wintering areas

   b. American peregrine falcon nesting territories and wintering areas

   c. Great gray owl nesting territories and wintering areas

2. Second Priority areas. Wildlife Areas that are particularly valuable due to their rarity in the County or vulnerability to human impact. The above uses will be allowed. In addition, certain other low-intensity uses will be allowed with appropriate mitigation. The specific types of permitted uses will be decided on a case-by-case basis, following the mitigation guidelines for each species and habitat in Chapter III.

   a. TARGET USE-AREAS for the other special-status wildlife species listed in Table II-1 (excluding those listed as First Priority species).

b. The most important TARGET USE-AREAS for migratory deer: highly critical winter range, fawning areas, major holding areas, and major migration corridors.

c. TARGET HABITATS that are relatively rare in the County, including:

- o Vernal pools
- o Valley oak woodland
- o Aspen groves
- o Old growth coniferous forest
- o Fresh emergent wetland
- o Old growth oak

d. All other TARGET HABITATS, which are not as rare, but are essential for maintaining diverse and abundant wildlife in the County:

- o Riparian woodland
- o Lakes and ponds
- o Streams and ditches
- o Springs and seeps
- o Wet meadows

3. Third Priority areas. Wildlife Areas that are of considerable value to wildlife, but not as rare or vulnerable to human impacts as those listed above. Most low-intensity and some high-intensity uses are to be allowed with appropriate mitigation.

a. All COMMON HABITATS except those listed under #4a (below), are included here if they have (1) a relatively mature tree layer, or, (2) in chaparral habitats, a relatively mature shrub layer, or (3) an unusually high density of one or more native species of mammals, birds, reptiles, or amphibians (except pest species).

b. Winter and summer concentration areas and holding areas for migratory deer, except the most important areas, which are Second Priority.

c. Concentration areas for resident deer.

4. Fourth Priority areas. Areas of relatively low value to wildlife. Most uses would be allowed without wildlife mitigation. Mitigation may be required for large projects if they would have significant impacts on wildlife. Includes areas of the following types:

a. COMMON HABITATS that, by definition, are highly modified by human activities or nearly devoid of natural vegetation:

- o Residential-park (urbanized and landscaped areas)
- o Cropland
- o Annual grassland
- o Irrigated pasture
- o Barren

b. Other COMMON HABITATS that* do not have a relatively mature tree or shrub layer or an unusually high density of any native wildlife species (see #3a).

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* A relatively mature tree layer is defined as a canopy closure of 25% or more composed of trees 20 feet tall or taller. A relatively mature shrub layer has a 25% or greater canopy closure composed of shrubs 3 feet or more in height.

APPENDIX C

DEFINITIONS OF COMMON HABITATS AND TARGET HABITATS

A. Basis for Habitat Definitions

The sections below define the TARGET HABITATS and COMMON HABITATS that are likely to occur on private lands in Tuolumne County. Definitions of the COMMON HABITATS and most of the TARGET HABITATS are based on habitat definitions from the Wildlife Habitat Relationships (WHR) program, administered by the Department of Fish and Game. These habitats are also referred to as WHR cover types. This will make it easier for County planners and citizens to use the WHR program, which provides information on wildlife that use these cover types in California. In most cases, the definitions of WHR types are based on a draft manuscript being prepared for the WHR program (Mayer and Laudenslayer 1986). Holton Associates (HA) supplied definitions for a few WHR types not yet defined by WHR (Jeffrey pine, white fir, barren, and residential-park) and, unlike WHR, decided to include orchard-vineyard under the "cropland" category.

In many cases, the definitions provided by WHR do not make clear, quantitative distinctions between similar habitat types. These are necessary for any meaningful mapping effort. Therefore, for both the COMMON and TARGET HABITATS, HA added clear distinctions, usually by specifying the percentage of a stand occupied by a particular species of tree or shrub. These percentages refer to the proportion of the overstory canopy cover occupied by a species. When a definition states that a stand is "dominated" by a particular species, it means that species occupies at least 50% of the total overstory cover. Also, please note that all forest or woodland types, by definition, have a tree cover of 10% or more.

Except for aquatic types, which are fairly straightforward, the definitions of TARGET HABITATS provided below were taken primarily from the WHR program. The definitions of vernal pool and big tree forest, which are not included in the WHR classification, were based on Cheatham and Haller (1975). Finally, the definition of old-growth coniferous forest was based on the usage in the Stanislaus National Forest Draft Management Plan (October 1985).

After each habitat name, in parentheses, is the abbreviation used on the Tuolumne County Wildlife Maps. Note that the abbreviations of TARGET HABITATS use upper case letters, while those of COMMON HABITATS use lower case. No abbreviations are given for perennial or intermittent streams, as these are shown on the USGS topographic base maps, not the Wildlife Maps.

B. TARGET HABITATS

Perennial stream. Includes streams of all sizes that flow all year in normal precipitation years. Stream may be classified as perennial based on USGS topographical maps or on sound evidence regarding their flows in recent years.

Intermittent stream. Streams that normally keep flowing in spring or summer but eventually stop flowing in normal precipitation years. They may flow year-round in unusually wet years. When not flowing the water may remain in isolated pools or surface water may be absent. This category does not include ephemeral streams which exist only during and for a short time after precipitation in the immediate locality in channels that are above the water table at all times.

Lake, reservoir, or pond (LAK). These are defined as holding water year-round. This category includes both natural and constructed ponds.

Vernal pool (VPL). A shallow depression in poorly drained soil that fills with water during the rainy season, gradually shrinks in spring, and usually dries out by summer.

Natural spring or seep (SPR). These are small, year-round water sources, which are important to many foothill animals during the hot, dry summers. This category includes artificial water sources such as guzzlers that were installed primarily for wildlife, but does not include structures such as watering troughs that were built primarily for livestock.

Fresh emergent wetland (FEW). Characterized by shallow water, at least during much of the year, and emergent vegetation such as cat-tails, bulrushes, or other herbaceous hydrophytes. This vegetation is present for most of the growing season in most years, and normally remains standing at least until the beginning of the next growing season. A common name for this habitat is "marsh."

Wet meadow (WTM). An area with more or less permanently moist or wet soil and dense herbaceous vegetation dominated by sedges and other perennial herbs. There may also be patches of willows and other riparian shrubs, with a total canopy cover of less than 10%, as well as scattered lodgepole pines or other trees (tree cover also less than 10%). In wet meadows, water is at or near the surface most of the growing season, as opposed to emergent wetlands, which have standing water. As defined here, this habitat includes both wet meadow (a WHR cover type) and mesic meadow (not a WHR type), which is moist but not as wet.

Montane riparian woodland (MRI). Montane woodland (tree cover of 10% or more) dominated by deciduous trees that grow beside streams, lakes, ponds, meadows, springs, and seeps. The trees depend on these water sources for soil moisture greater than

would otherwise be available from local precipitation. Typical trees include willows, alders, black cottonwood, aspen, and creek dogwood. They usually form narrow, dense stands with a sparse understory, generally above 3000 feet in elevation.

Valley-foothill riparian woodland (VRI). Lower-elevation riparian deciduous woodland (tree cover of 10% or more); similar to MRI, but mature trees are generally taller and may form wider stands along water sources, especially in broad valleys. Dominant trees are usually Fremont cottonwood, California sycamore, various willows, and valley oak. Generally occurs below 3000 feet in elevation.

Aspen (ASP). Groves dominated by aspens (occupies at least 50% of the overstory canopy cover), often mixed with other deciduous trees and conifers. Canopy usually relatively open, and shrub layer often well developed. Generally associated with seeps, streams, and meadows, and thus could be considered a type of riparian habitat. Large stands are rather rare on the west slope Sierra, usually at an elevation of 6000 to 9000 feet.

Valley oak woodland (VOW). Woodlands dominated by valley oaks, usually in relatively pure stands, but sometimes accompanied by California sycamore, blue oak, and other trees. Most existing stands consist of mature trees with few if any young valley oaks. Valley oak woodlands sometimes occur as a type of riparian woodland (adjacent to and dependent on water from a stream) and sometimes occur away from streams.

Old-growth coniferous forest (OGC). Forest stands dominated by unusually large, old conifers in moderate- to high-density stands (i.e., 40% canopy cover or more), where the dominant overstory is over 150 years old, and except for lodgepole and mountain hemlock forests, where the overstory trees have an average diameter of at least 24 inches, measured 4.5 feet above the ground.

Big tree forest (BTF). Any forest stand with naturally occurring giant sequoia trees. This is a subtype of Sierran mixed conifer (smc).

Native perennial grassland (PGS). A habitat dominated by native grasses, generally perennial bunch grasses, often mixed with annual grasses and wildflowers. Has been replaced throughout much of California by annual grassland.

C. COMMON HABITATS

Subalpine conifer (scn). The highest-elevation forest type, generally located at elevations of 9000 feet or more, usually forming open forests of conifers less than 100 feet tall.

Dominant trees are lodgepole pine, western white pine, mountain hemlock, and whitebark pine. Mixed stands of these species with more than 80% lodgepole pine are classified as lpn (see below).

Lodgepole pine (lpn). Typically consists of open to dense stands of lodgepole pines with few other tree species and a sparse understory. This type generally occurs below the subalpine forests and above red fir forests, but also occurs down into the red fir zone and even lower, especially around meadows. High-elevation stands, which may occur up to tree line, are often mixed with other subalpine trees, but are classified as lpn if 80% lodgepole pine or more. Lower elevation stands may include substantial numbers of red fir and other conifers; these are classified as lpn if lodgepole pines are the dominant species.

Red fir (rfr). Normally pure, or nearly pure, stands of red fir, with a relatively sparse understory. Sometimes occurs with substantial numbers of lodgepole pines, white firs, Jeffrey pines, or other conifers; such stands are classified as rfr if red firs are the dominant species. Generally occurs below the lodgepole forest belt and above the white fir forests.

Jeffrey pine (jpn). Forests dominated by Jeffrey pine, either in relatively pure stands or mixed with red fir, white fir, lodgepole pine, or other conifers. Understory usually consists of scattered montane chaparral. Occurs in about the same elevation zone as red fir forests, but on drier sites, often on south-facing slopes.

White fir (wfr). Forests dominated by white fir, often in relatively pure stands and usually quite dense. Often associated with other tree species of the mixed conifer forests. Sparse understory with abundant downed wood. Occupies the same elevations as the upper mixed conifer forests, but generally on cooler, moister sites.

Sierran mixed conifer (smc). A mixed species forest composed of various proportions of white fir, ponderosa pine, Jeffrey pine, Douglas-fir, sugar pine, incense-cedar, black oak, and red fir. Generally occurs below the red fir belt and above the ponderosa pine forests. Mixed stands dominated by white fir, ponderosa pine, Jeffrey pine, or red fir are classified as wfr, ppn (see below), jpn, or rfr, respectively. Stands with more than one-third hardwoods are classified as mhc or mhw (see below).

Ponderosa pine (ppn). Forests dominated by ponderosa pine, often associated with white fir, incense-cedar, sugar pine, Douglas-fir, black oak, canyon live oak, and other trees. Stands may be open to dense, with variable amounts of understory shrubs and herbs. Generally occupies elevations below the mixed conifer type and above the blue oak-digger pine woodlands.

Montane hardwood-conifer (mhc). Forests consisting of at least one-third hardwoods (not including riparian trees) and one-third conifers, often forming a dense canopy. Tree species composition is similar to that of ponderosa pine forest. This type often occurs as a mosaic with small pure stands of conifers interspersed with small stands of hardwoods, which typically form a lower canopy than that of the conifers. Usually little understory except after logging or fire. Generally occurs within the elevation zones of smc and ppn.

Montane hardwood (mhw). Forests with at least two-thirds hardwoods (not including riparian trees), usually mixed with some conifers. Dominant species are usually canyon live oak or black oak, and the common conifers are the same species as in ponderosa pine forest. Generally occurs within the elevation zones of smc and ppn.

Montane chaparral (mcp). A montane habitat dominated by one or more species of evergreen shrubs, including ceanothus species, manzanita species, huckleberry oak, chinquapin, and silktassel. Deciduous shrubs such as bitter cherry and Sierra coffeeberry may also be present. Shrub cover is 10% or more. Conifer and oak trees may occur sparsely, with a total tree cover of less than 10%. This type occurs locally throughout the elevations of the coniferous forest types.

Mixed chaparral (mch). A foothill habitat dominated by one or more species of evergreen shrubs, including scrub oak, chaparral oak, ceanothus species, manzanita species, and chamise. Common associates include birchleaf mountainmahogany, silktassel, toyon, yerba-santa, poison-oak, and California fremontia. Shrub cover is 10% or more and tree cover, if any, is less than 10%. Occurs mainly at elevations of ponderosa pine forest and below.

Chamise chaparral (chc). Much like mixed chaparral, but chamise forms 60% or more of the total shrub cover. Often chamise occurs in relatively pure stands, but it may be associated with other shrubs of the mixed chaparral. (The WHR name for this type is chamise-redshank chaparral, but there is no redshank in Tuolumne County.)

Blue oak-digger pine (bop). Foothill woodland dominated by blue oak, digger pine, and/or interior live oak, usually with a sparse to moderate canopy cover. A common associate is California buckeye. A patchy shrub layer is usually present at higher elevations, but absent at lower elevations.

Blue oak woodland (bow). Foothill woodland in which blue oak occupies at least 85% of the tree canopy. Canopy cover is usually sparse to open. Associated trees include interior live oak and digger pine. Understory is annual grassland, sometimes with scattered patches of shrubs.

Annual grassland (ags). Open grassland composed primarily of annual grasses and forbs. Occurs mainly in the lower foothills. Scattered trees and shrubs may be present, but both have a canopy cover of less than 10%.

Irrigated pasture (pas). Herbaceous vegetation, primarily a planted mixture of perennial grasses and legumes. Irrigation generally supports a denser, lusher plant cover than in nonirrigated grasslands.

Cropland (crp). Includes all field crops, orchards, and vineyards, but not pasturelands. (Note that the WHR system defines orchard-vineyard as a separate type.)

Barren (bar). Areas with total plant cover of less than 2%, including trees, shrubs, and herbs.

Residential-park (rsp). A designation for urbanized areas, including residential, commercial, and industrial developments, as well as landscaped parks and gardens. Developed residential areas with lot sizes of less than 5 acres were mapped as rsp.

APPENDIX D

COMMON AND SCIENTIFIC NAMES OF PLANTS MENTIONED IN HANDBOOK

alder spp.	*Alnus* spp.
aspen	*Populus tremuloides*
buckeye, California	*Aesculus californica*
bulrush spp.	*Scirpus* spp.
cat-tail	*Typha latifolia*
ceanothus spp.	*Ceanothus* spp.
chamise	*Adenostoma fasciculatum*
cherry, bitter	*Prunus emarginata*
chinquapin	*Chrysolepis chrysophylla*
coffeeberry, Sierra	*Rhamnus rubra*
cottonwood, black	*Populus trichocarpa*
cottonwood, Fremont	*Populus fremontii*
dogwood, creek	*Cornus stolonifera*
Douglas-fir	*Pseudotsuga menziesii*
fir, red	*Abies magnifica*
fir, white	*Abies concolor*
fremontia, California	*Fremontodendron californicum*
hemlock, mountain	*Tsuga mertensiana*
incense-cedar	*Calocedrus decurrens*
manzanita spp.	*Arctostaphylos* spp.
mountainmahogany, birchleaf	*Cercocarpus betuloides*
oak, black	*Quercus kelloggii*
oak, blue	*Quercus douglasii*

oak, canyon live	Quercus chrysolepis
oak, chaparral	Quercus wislizenii frutescens
oak, huckleberry	Quercus vaccinifolia
oak, interior live	Quercus wislizenii
oak, scrub	Quercus dumosa
oak, valley	Quercus lobata
pine, digger	Pinus sabiniana
pine, Jeffrey	Pinus jeffreyi
pine, lodgepole	Pinus contorta murrayana
pine, ponderosa	Pinus ponderosa
pine, sugar	Pinus lambertiana
pine, western white	Pinus monticola
pine, whitebark	Pinus albicaulis
poison-oak	Rhus toxicodendron
redshank	Adenostoma sparsifolium
sequoia, giant	Sequoia giganteum
silktassel	Garrya fremontii
sycamore, California	Platanus racemosa
toyon	Heteromeles arbutifolia
willow spp.	Salix
yerba-santa	Eriodictyon californicum

APPENDIX E

FORMS USED FOR FIELD EVALUATION OF TARGET HABITATS

CONDUCTED BY HOLTON ASSOCIATES, 1987

Habitat Patch # _____

Tuolumne County Wildlife Inventory and Evaluation Project
Field Evaluation of Target Habitats --- Holton Associates, 1987

Wooded Habitats
(Valley-Foothill Riparian, Montane Riparian, Valley Oak Woodland)

Notes: (a) In this evaluation, the term tree refers to trees 20 feet tall or more, and tree reprod. refers to trees less than 20 feet. (b) By definition, these target habitats must have a tree cover of 10% or more. (c) Willows are treated as trees or tree reprod., not shrubs.

Target Habitat: _____ ___ 1/4 ___ 1/4 Sec ____ T ___ R ___

Quad # _____ Quad Name _____ Elev: _____ ft

Date: _____ Evaluator's name: _____

Approx. size of habitat patch mapped, in acres (circle one):

____ 5 10 20 40 80 160 320 ____

Approx % of patch evaluated: _____

Which part of patch? _____

o List the dominant tree species, from highest to lowest % cover

_____

o Riparian tree canopy is about ____% along the ____ shore and ____% along the ____ shore.

	Canopy Cover (%)					Ave. Ht.
Tree layer:	0-9	10-24	25-39	40-59	60+	_____
Tree reprod:	0-9	10-24	25-39	40-59	60+	_____
Shrub layer:	0-9	10-24	25-39	40-59	60+	_____
Herb layer:	0-1	2-9	10-39	40-59	60+	_____

o Other notable features (snags, downed logs, springs, topography, etc.): _____

_____

_____

Habitat Patch # _____

Human disturbance (use a rating of 1 to 5; 1 = low = little if any apparent effect of human disturbance; 5 = highly disturbed)

- Level of disturbance due to livestock grazing? ____
- Level of recent human use, based on evidence such as trails, litter, vehicle tracks, etc.? ____
- Sensitivity to disturbance from adjoining areas, based on the proximity of populated or heavily used areas, the ease of access, and the potential buffering by surrounding topography or vegetation? ____
- Describe any recent vegetation clearing or other habitat alterations by people: _____

_____

_____

Other remarks
(e.g., any outstanding or unusual characteristics of the site, evidence of use by target species, etc.; also, mention any corrections made on map)

Overall habitat quality: 1 2 3 4 5 NA

Judge habitat quality in relation to the mature, undisturbed condition of this habitat type in Tuolumne County.
(1 = low = very disturbed; 5 = high = relatively undisturbed, mature woodland; NA = not applicable = this habitat patch does not fit the definition of any of the target habitats)

Key factors determining this rating: _____

_____

Habitat Patch # _____

Tuolumne County Wildlife Inventory and Evaluation Project
Field Evaluation of Target Habitats --- Holton Associates, 1987

Lakes and Ponds (Including Reservoirs)

Notes: (a) In this evaluation, the term tree refers to trees 20 feet tall or more, and tree reprod. refers to trees less than 20 feet. (b) Willows are treated as trees or tree reprod., not shrubs.

Target Habitat: LAK ___ 1/4 ___ 1/4 Sec ____ T ___ R ___

Quad # _____ Quad Name _____ Elev: _____ ft

Date: _____ Evaluator's name: _____

Approx. size of habitat patch mapped, in acres (circle one):

____ 5 10 20 40 80 160 320 ____

Approx % of patch evaluated: _____

Which part of patch? _____

- Emergent vegetation borders about ____% of the shoreline in a strip averaging ____ feet wide (____ to ____ feet).
- Riparian tree canopy is about ____% along the shoreline, in a strip averaging ____ feet wide (____ to ____ feet).
- Fill out the following table, referring to the 100-foot-wide strip bordering the high-water level of the lake or pond:

	Canopy Cover (%)					Ave. Ht.
Tree layer:	0-9	10-24	25-39	40-59	60+	_____
Tree reprod:	0-9	10-24	25-39	40-59	60+	_____
Shrub layer:	0-9	10-24	25-39	40-59	60+	_____
Herb layer:	0-1	2-9	10-39	40-59	60+	_____

- Other notable features (snags, downed logs, topography, etc.):

_____

_____

Human disturbance of the lake or pond and the bordering 100-foot-wide strip (use a rating of 1 to 5; 1 = low = little if any apparent effect of human disturbance; 5 = highly disturbed)

- Level of disturbance due to livestock grazing? ____
- Level of recent human use, based on evidence such as trails, litter, vehicle tracks, etc.? ____
- Sensitivity to disturbance from adjoining areas, based on the proximity of populated or heavily used areas, the ease of access, and the potential buffering by surrounding topography or vegetation? ____
- Describe any recent vegetation clearing or other habitat alterations by people: _____

_____

_____

Other remarks
(e.g., any outstanding or unusual characteristics of the site, evidence of use by target species, etc.; also, mention any corrections made on map)

Overall habitat quality: 1 2 3 4 5 NA

Judge habitat quality of lakes and ponds, whether natural or man-made, in relation to the undisturbed condition of natural lakes and ponds in Tuolumne County. (1 = low = very disturbed; 5 = high = relatively undisturbed; NA = not applicable = this habitat patch does not fit the definition of any of the target habitats)

Key factors determining this rating: _____

_____

Habitat Patch # _____

Tuolumne County Wildlife Inventory and Evaluation Project
Field Evaluation of Target Habitats --- Holton Associates, 1987

Wet Meadows

Notes: (a) In this evaluation, the term tree refers to trees 20 feet tall or more, and tree reprod. refers to trees less than 20 feet. (b) Willows are treated as trees or tree reprod., not shrubs.

Target Habitat: WTM ___ 1/4 ___ 1/4 Sec ____ T ___ R ___

Quad # _____ Quad Name _____ Elev: _____ ft

Date: _____ Evaluator's name: _____

Approx. size of habitat patch mapped, in acres (circle one):

____ 5 10 20 40 80 160 320 ____

Approx % of patch evaluated: _____

Which part of patch? _____

- Clumps of willows occupy about ____% of the meadow

  Estimated size of willow clumps: _____

- Willow foliage below 6 feet is:

  Nearly absent Sparse Moderate Dense

- Fill out the following table ("tree border" refers to trees occupying the 100-foot-wide strip bordering the meadow.)

	Canopy Cover (%)					Ave. Ht.
Tree border:	0-9	10-24	25-39	40-59	60+	_____
Tree reprod + Shrub layer:	0-9	10-24	25-39	40-59	60+	_____
Herb layer:	0-1	2-9	10-39	40-59	60+	_____

- Other notable features (snags, downed logs, streams and ponds in meadow, etc.):

  _____

  _____

Human disturbance of meadow (use a rating of 1 to 5; 1 = low = little if any apparent effect of human disturbance; 5 = highly disturbed)

- Level of disturbance due to livestock grazing? ____
- Level of recent human use, based on evidence such as trails, litter, vehicle tracks, etc.? ____
- Sensitivity to disturbance from adjoining areas, based on the proximity of populated or heavily used areas, the ease of access, and the potential buffering by surrounding topography or vegetation? ____
- Describe any recent vegetation clearing or other habitat alterations of the meadow or 100-foot-wide bordering strip:

_____

_____

_____

Other remarks
(e.g., any outstanding or unusual characteristics of the site, evidence of use by target species, etc.; also, mention any corrections made on map)

Overall habitat quality: 1 2 3 4 5 NA

Judge habitat quality in relation to undisturbed meadows in Tuolumne County. (1 = low = very disturbed; 5 = high = relatively undisturbed; NA = not applicable = this habitat patch does not fit the definition of any of the target habitats)

Key factors determining this rating: _____

_____

Habitat Patch #

Tuolumne County Wildlife Inventory and Evaluation Project
Field Evaluation of Target Habitats --- Holton Associates, 1987

Vernal Pools

Target Habitat: VPL ___ 1/4 ___ 1/4 Sec ____ T ___ R ___

Quad # _____ Quad Name _____ Elev: _____ ft

Date: _____ Evaluator's name: _____

Approx. size of habitat patch mapped, in acres (circle one):

____ 5 10 20 40 80 160 320 ____

Approx % of patch evaluated: _____

Which part of patch? _____

- Approx. number and sizes of pools on site: _____

  _____

- Describe local topography _____

  _____

- Other notable features (e.g., bordering vegetation):

  _____

  _____

Human disturbance (use a rating of 1 to 5; 1 = low = little if any apparent effect of human disturbance; 5 = highly disturbed)

- Level of disturbance due to livestock grazing? ____
- Level of recent human use, based on evidence such as trails, litter, vehicle tracks, etc.? ____
- Sensitivity to disturbance from adjoining areas, based on the proximity of populated or heavily used areas, the ease of access, and the potential buffering by surrounding topography or vegetation? ____

- Describe any recent grading, plowing, vegetation clearing or other habitat alterations of the vernal pool or 100-foot-wide bordering strip:

  _____

  _____

  _____

Other remarks
(e.g., any outstanding or unusual characteristics of the site, evidence of use by target species, etc.; also, mention any corrections made on map)

Overall habitat quality: 1 2 3 4 5 NA

Judge habitat quality in relation to undisturbed vernal pools of this type in Tuolumne County. (1 = low = very disturbed; 5 = high = relatively undisturbed; NA = not applicable = this habitat patch does not fit the definition of any of the target habitats)

Key factors determining this rating: _____

_____

APPENDIX F

REPORT FORM FOR COOPERATORS, AND INSTRUCTIONS

TUOLUMNE COUNTY WILDLIFE PROJECT

INSTRUCTIONS

Purpose of report forms. The attached report form can be used to provide information to the County on TARGET HABITATS and TARGET USE-AREAS that have not yet been mapped on the Wildlife Maps (or included in the inventory files on unmapped portions of the County). Similarly, it can be used to document corrections or updated information on areas that have already been mapped or inventoried. Anyone can submit such information to the County. It is important to provide details on your observations, however, as this information cannot be added to the Wildlife Maps unless it is properly documented.

Please refer to the Wildlife Handbook (Chapter II) for information on the TARGET HABITATS and TARGET USE-AREAS in Tuolumne County. The County is also interested in information on other types of areas that cooperators may consider important.

Chapter V of the Wildlife Handbook explains the County's plans for keeping the Wildlife Maps and inventory files up-to-date. Information provided by cooperators will be an important part of that process.

How to complete forms. For each Wildlife Area that you wish to report, please indicate as accurately as possible its location on a map, and fill out one of the enclosed report forms. You may use a Stanislaus National Forest map, BLM map, or (even better) a USGS topographic map.

Please fill out the report forms as completely and carefully as possible. In order to include your information on the Wildlife Maps (or inventory files), the County will need to verify its accuracy and authenticity. This is another reason for including a good map and description of the location.

As indicated on the forms, you can send completed maps and forms to the Tuolumne County Planning Department, 2 South Green Street, Sonora, CA 95370. If you have any questions or comments, feel free to call the Department at (209) 533-5611. Thank you very much for contributing to the Wildlife Project.

TUOLUMNE COUNTY WILDLIFE INVENTORY AND EVALUATION PROJECT
REPORT FORM FOR COOPERATORS

1) Dates: Form filled out on _____

Date(s) of observation(s) _____

2) Type of Wildlife Area (check one and fill in blanks):

( ) TARGET HABITAT (type): _____

( ) TARGET USE-AREA--used by (species): _____

Type of use: _____

( ) Other: _____

3) Description of TARGET HABITAT or USE-AREA

Is it shown on an attached map? _____

How is the area labeled on the map? _____

Legal location:

_____ 1/4 of the _____ 1/4, Sec. _____, T. _____, R. _____

Approximate size of area: _____

Describe the area (vegetation, topography, quality of habitat, special habitat features): _____

_____

_____

_____

_____

_____

4) Evidence of wildlife use (include dates): _____

_____

_____

_____

_____

5) Human disturbance (what kind of disturbance? how much? evidence?): _____

_____

_____

_____

_____

6) Remarks (especially, discuss your reasons for considering this area to be of special value to wildlife): _____

_____

_____

_____

_____

_____

_____

7) Information on the cooperator:

Person filling out this form (name, address):

_____

_____

Observer (if different from above) (name, address):

_____

_____

Send form to: Tuolumne County Planning Department
2 South Green Street
Sonora, CA 95370

APPENDIX G

TARGET HABITATS AND TARGET USE-AREAS ON PRIVATE LANDS[a] IN TUOLUMNE COUNTY NOT SHOWN ON THE 20 WILDLIFE MAPS

Location			Habitat,		
T	R	Sec[b]	Use-Area[c]	Photo #	Other Source[c]
1S	17E	29	GO		Winter 1985
1S	18E	W 13	WTM, LAK	282-100	
1S	18E	E 21	WTM, MRI	282-77	
1S	18E	SW 22	MRI	282-77	
1S	18E	SE 22	SO		GG
1S	18E	SE 26	SO		SG
1S	18E	N 36	LAK	282-98	
1S	18E	NE 36	MRI	282-98	
1S	19E	S 2	WTM, LAK	282-154	
1S	19E	S 2	GO		Winter 1980
1S	19E	SE 2	WTM	282-154	
1S	19E	14	GO		Winter 1980, 1985
1S	19E	14	LO		JW
1S	19E	SW 14	WTM	282-152, -154	
1S	19E	15	GO		Winter 1980, 1985
1S	19E	15	LO		JW
1S	19E	NW 18	SO		GG
1S	19E	NE 22	SO		GG
1S	19E	23	GO		Winter 1980, 1985
1S	19E	23	LO		JW
1S	19E	23	WF		Harris et al. 1982, SG
1S	19E	NW 23	WTM	282-152	
1S	19E	SE 23	WTM	282-152	

[a] Or near private lands (within 1/2 mile).

[b] The section(s), half-section(s), or quarter-section(s) that entirely contain the patch of TARGET HABITAT or USE-AREA.

[c] See attached key explaining abbreviations. For information on TARGET USE-AREAS of deer, which are not listed here, consult the latest deer herd maps prepared by the Department of Fish and Game.

Location			Habitat,		
T	R	Sec	Use-Area	Photo #	Other Source
1S	19E	SW 23	CH		SG
1S	19E	24	WF		Serena 1982, Harris et al. 1982
1S	19E	24	GO		Winter 1980, 1985
1S	19E	24	LO		JW
1S	19E	SW 24	SO		GG
1S	19E	24	WTM	282-153	
1S	19E	25	GO		Winter 1980, 1985
1S	19E	25	SO		GG
1S	19E	26	GO		Winter 1980, 1985
1S	19E	NE 26	SO		GG
1S	19E	S 31	SO		SG
1S	19E	W 31	SO		GG
1N	18E	NW 34	WTM	282-73	
1N	18E	SW 34	WTM	282-73	
1N	18E	NW 35	SO		GG
1N	19E	S 6	MRI	282-106	
1N	19E	N 7	MRI	282-106	
1N	19E	E 12	MRI	282-106	
1N	19E	NW 12	WTM	282-106	
1N	19E	NW 13	MRI	282-106	
1N	19E	NE 18	MRI	282-106	
1N	19E	W 18	MRI	282-106	
1N	19E	W 19	MRI	282-104	
1N	19E	S 24	MRI	282-104	
2N	18E	NE 1	SO		GG
2N	18E	N 1	WTM	282-108	
2N	18E	SE 1	WTM	282-108	
2N	18E	NW 6	WTM	282-108	
2N	18E	NE 12	SO		GG
2N	18E	SW 34	SO		WS
2N	18E	W 36	WTM	282-108	
2N	19E	6	SO		GG
3N	18E	SE 33	WTM	282-63	
3N	18E	NW 35	OGC	282-61	
4N	18E	NE 3	LAK, WTM	282-53	
4N	21E	32	*		RS
5N	16E	SE 1	OGC	282-176	
5N	16E	2	SO		GG
5N	16E	E 4	OGC	182-141	

Location			Habitat,		
T	R	Sec	Use-Area	Photo #	Other Source
5N	16E	NE 8	MRI, OGC	182-141	
5N	16E	NW 9	OGC	182-141	
5N	16E	SW 10	MRI	182-193	
5N	16E	NE 12	OGC	282-176	
5N	16E	N 15	MRI	182-193	
5N	16E	SE 15	OGC	182-193	
5N	16E	SW 15	MRI	182-193	
5N	16E	16	WTM	182-143	
5N	16E	SW 16	MRI	182-143	
5N	16E	W 17	MRI	182-143	
5N	16E	19	*		SNF
5N	16E	SE 20	MRI	182-143	
5N	16E	SW 21	MRI	182-143	
5N	16E	NE 24	WTM	282-176	
5N	16E	29	SO		GG
5N	17E	NW 4	WTM	282-201	
5N	17E	NW 4	MDf		WS
5N	17E	NW 5	WTM	282-201	
5N	17E	NW 5	MDf		WS
5N	17E	SE 6	WTM	282-176	
5N	17E	SE 6	MDf		WS
5N	17E	NW 7	SO		GG
5N	17E	SE 11	MDf		WS
5N	17E	S 12	MDf		WS
5N	17E	N 13	MDf		WS
5N	17E	N 14	MDf		WS
5N	17E	SW 18	WTM	282-174	
5N	17E	19	*		SNF
5N	17E	20	*		SNF
5N	17E	SE 23	SO		GG
5N	17E	SW 26	MRI	382-193	
5N	17E	NE 26	SO		GG
5N	18E	34	SO		GG
5N	20E	S 2	WTM	282-286	
5N	20E	SW 3	LAK, WTM	382-29	
5N	20E	SW 7	WTM	382-61	
5N	20E	10	WTM	382-29	
5N	20E	N 11	WTM	282-286	
5N	20E	NW 17	WTM	382-63	
5N	20E	S 17	WTM	382-63	
5N	20E	NE 18	WTM	382-63	
5N	20E	SE 18	WTM	382-63	
6N	16E	NE 24	OGC	282-178	

Location			Habitat,		
T	R	Sec	Use-Area	Photo #	Other Source
6N	16E	SE 34	SO		GG
6N	16E	35	SO		GG
6N	16E	SE 35	WTM	182-195	
6N	16E	SW 35	MRI	182-195	
6N	17E	SE 1	OGC	382-201	
6N	17E	SW 10	WTM	282-197	
6N	17E	NW 14	WTM	382-199	
6N	17E	SE 14	WTM	382-199	
6N	17E	SW 14	WTM	382-199	
6N	17E	NE 16	WTM	282-197	
6N	17E	NW 16	WTM	282-197	
6N	17E	19	SO		GG
6N	17E	NW 26	WTM	382-199	
6N	17E	SW 30	WTM	282-178	
6N	17E	SW 33	WTM	282-201	
6N	17E	SW 33	MDf		WS
6N	20E	E 28	WTM	382-31	

Abbreviations for TARGET USE-AREAS

*	Confidential TARGET USE-AREA within this section: consult with Department of Fish and Game.
BE	Bald eagle: habitat area used regularly
CH	Cooper's hawk: nesting site
GH	Great blue heron: colonial nesting site
GO	Great gray owl: habitat area used regularly
LO	Long-eared owl: nesting territory
MD	Migratory deer: concentration area
MDf	Migratory deer: fawning area
RD	Resident deer: concentration area
SO	Spotted owl: nesting territory
WD	Wood duck: nesting site
WF	Willow flycatcher: nesting territory

Abbreviations for TARGET HABITATS

LAK	Lake, reservoir, or pond
WTM	Wet meadow
MRI	Montane riparian woodland
OGC	Old-growth coniferous forest

Abbreviations for Sources of Information[1]

GG = Gordon Gould, Nongame Wildlife Section, California Department of Fish and Game, Sacramento

JW = Jon Winter, independent biologist, Santa Rosa, CA

RS = Ron Schlorff, Nongame Wildlife Section, California Department of Fish and Game, Sacramento

SG = Stephen L. Granholm, Holton Associates, Berkeley, CA

SNF = Stanislaus National Forest wildlife sightings cards

WS = William E. Snyder, Chief Forester, Louisiana-Pacific Corporation, Standard, CA

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[1] For references (cited by author and date), see Appendix H in Wildlife Handbook.

APPENDIX H

REFERENCES, LITERATURE CITED, AND ADDITIONAL DATA SOURCES ON WILDLIFE OF TUOLUMNE COUNTY

REFERENCES AND LITERATURE CITED

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ADDITIONAL DATA SOURCES ON WILDLIFE OF TUOLUMNE COUNTY

- Soil-Vegetation Maps: Prepared in 1975-78 by the State Cooperative Soil-Vegetation Survey, these maps show soil types and vegetation on all "non-urban" private lands at 1" = 2000'. These also include ratings charts for browse value of trees and shrubs for deer.

- California Natural Diversity Data Base: Species location maps and Element Occurrence Summaries. Up-to-date maps and computer print-outs can be ordered at any time from the Data Base, administered by the Department of Fish and Game in Sacramento.

- 1978 Tuolumne County Wildlife Report: describes nine vegetation/ habitat types on private lands, along with associated species. Based on USFS information and prepared by County Planning Staff.

- Deer: maps of the Stanislaus, Yosemite, and Tuolumne deer herds showing migration corridors, holding areas, winter range, summer range, and fawning areas. Prepared by the Department of Fish and Game.

- Deer: additional references on deer-cattle interactions and movements of radio-collared deer in Tuolumne County. Available at the Planning Department.

- Fish: information on species composition for Woods, Sullivan, and some of Curtis Creek. Prepared by the Department of Fish and Game. Available at the Planning Department.

- Other wildlife data available from Stanislaus National Forest (which includes information on adjacent private lands and inholdings):

  -- Maps of spotted owl territories and potential territories
  -- Sightings cards for many wildlife species
  -- Maps showing several classes of streams
  -- Results of furbearer surveys

- Tuolumne County Planning Department: biological sections of environmental impact reports on previous projects.

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By Edna M. Bowcutt
Clerk of the Board of Supervisors

RESOLUTION

OF THE BOARD OF SUPERVISORS OF THE COUNTY OF TUOLUMNE

WHEREAS, the County has adopted a 1996 General Plan by Resolution No. 223-96; and

WHEREAS, the General Plan includes Implementation Program 4.J.a which provides for the future creation and adoption of a Biological Resources Conservation Handbook; and

WHEREAS, the 1980 General Plan contained a Wildlife Handbook that has served since its adoption through Resolution No. 303-87 and as amended from time to time, as the source of wildlife impact mitigation measures for discretionary projects subject to the California Environmental Quality Act (CEQA); and

WHEREAS, until the adoption of a Biological Resources Conservation Handbook, the County desires to continue to provide an accepted, known, and predictable source of mitigation measures when considering environmental impacts to wildlife from development proposals such as that contained in the Wildlife Handbook; and

WHEREAS, through the adoption of Resolution 230-96, the County designated the Wildlife Handbook as the interim Biological Resources Conservation Handbook to address impacts to wildlife and its habitat from development projects seeking approval in compliance with the 1996 General Plan; and

WHEREAS, the Wildlife Handbook contains provisions for optional methodologies for identifying impacts to biological resources and selecting mitigation measures for those impacts as contained therein; and

WHEREAS, on December 2, 1997, the Board of Supervisors adopted Resolution No. 261-97 amending Implementation Program 4.J.a of the 1996 General Plan to eliminate the reference to the optional use of the Tuolumne County Wildlife Handbook in identifying impacts to biological resources and formulating mitigation measures from the General Plan but to retain such provisions in the existing Wildlife Handbook and future Biological Resources Conservation Handbook; and

WHEREAS, the Board of Supervisors desires to clarify the provisions in the Wildlife Handbook for optional methodology for identifying impacts to biological resources and selecting mitigation measures for those impacts;

NOW THEREFORE IT IS RESOLVED that the Tuolumne County Wildlife Handbook is hereby amended to clarify the existing provisions for the optional methodology for identifying impacts to biological resources and selecting mitigation measures for those impacts as contained therein as follows:

A. Replace the first paragraph of Chapter I, Section A on Page I-1 relating to the purpose of the Wildlife Handbook with the following:

CHAPTER I

INTRODUCTION

A. Purpose of the Wildlife Handbook

This Wildlife Handbook is designed to assist County planning staff in evaluating impacts of proposed projects on wildlife, developing fair and consistent mitigation measures, and monitoring these impacts and mitigation measures over time. Designed to accompany a set of 20 Wildlife Maps, it will enable planners to use those maps, in conjunction with other data and site visits, to make effective decisions involving wildlife. More specifically, the handbook specifies priorities and reasonable objectives for wildlife protection in the County. It then presents a practical approach for developing mitigation measures that will help to achieve those objectives. This is just one approach that can be used by developers in complying with the California Environmental Quality Act (CEQA) and other related State and Federal regulations concerning potential impacts on biological resources. The developer has the option to use the contents of this handbook in evaluating such impacts associated with the proposed project and in developing appropriate mitigation measures or to perform a site and project specific study to determine potential impacts and, if necessary, to formulate a mitigation plan for those impacts in accordance with applicable State and Federal law.

B. Replace the fist paragraph of Chapter II, Section A on Page II-2 relating to the use of maps and inventory with the following:

A. Use of Maps and Inventory

HA prepared wildlife maps and compiled all available data on wildlife, fish, and their habitats on private lands in Tuolumne County to help the County make more effective decisions regarding wildlife. This expanded data base will make it possible to adopt priorities and appropriate levels of protection for various types of wildlife areas, consistent with the reality of continued development. It will permit the County to provide strong protection for the most valuable wildlife areas and attempt to channel development into the less valuable areas. In addition, the maps will allow landowners, developers, and planners to predict the constraints to development posed by wildlife resources on specific parcels; however, developers have the option to use this data in evaluating potential impacts to wildlife and other biological resources associated with proposed projects and in developing appropriate mitigation measures or to prepare a site specific study in accordance with applicable State and Federal law. Finally, it will make possible a more consistent wildlife mitigation policy and clarify the protections required under the California Environmental Quality Act (CEQA).

C. Revise Chapter IV, Section A.1 on Page IV-2 relating to the process for evaluating potential impacts on wildlife and other biological resources and selecting mitigation measures to read as follows:

A. Description of Process

1. General Approach

For all the types of projects described in Chapter III (Section C), County staff shall conduct a Wildlife Evaluation to assess the impacts on wildlife and assign appropriate mitigation measures, if required. This process shall consist of an Office Evaluation, Site Inspection, and if necessary, additional Field Studies and selection of appropriate mitigation measures from those presented in Chapter III.

The developer has the option to use this process in evaluating potential impacts to wildlife and other biological resources associated with the proposed project and in developing appropriate mitigation measures or to perform a site and project specific study to determine potential impacts and, if necessary, to formulate a mitigation plan in accordance with applicable State and Federal law.

IT IS FURTHER RESOLVED that the signatures of the members of this Board of Supervisors on this resolution shall constitute the endorsement of the approved and adopted amendments to the Tuolumne County Wildlife Handbook.

ADOPTED BY THE BOARD OF SUPERVISORS OF THE COUNTY OF TUOLUMNE ON DECEMBER 16, 1997.

AYES:	1st Dist Rotelli	NOES:	4	Dist Thornton
	2nd Dist Rowtree			Dist
	3rd Dist Marks	ABSENT:		Dist None
	4th Dist ~	ABSTAIN:		Dist
	5th Dist Pland			Dist None

Larry Rotelli
CHAIRMAN OF THE BOARD OF SUPERVISORS

Attest: Edna M. Bowcutt
Clerk of the Board

No. 270-97

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