

1 **A.10 WHITE-TAILED KITE (*ELANUS***  
 2 ***LEUCURUS*)**

3 **A.10.1 Legal and Other Status**

4 The white-tailed kite is designated as a state Fully Protected  
 5 species pursuant to California Department of Fish and Game  
 6 Code Section 3511. Nest sites are protected in California  
 7 under Fish and Game Code Section 3503.5.

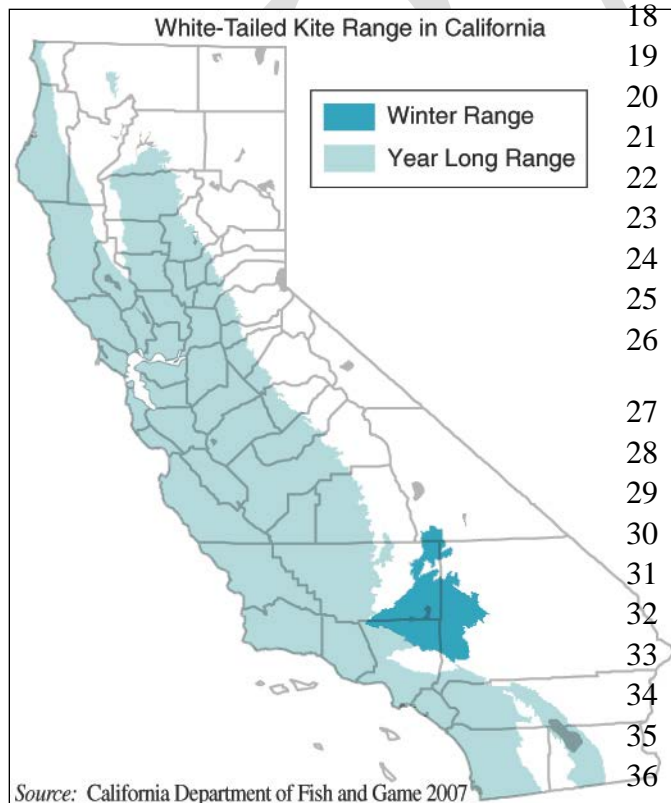


8 The white-tailed kite has no federal regulatory status;  
 9 however, the species is protected under the federal Migratory  
 10 Bird Treaty Act.

11 **A.10.2 Species Distribution and Status**

12 **A.10.2.1 Range and Status**

13 The white-tailed kite was threatened with extinction in North America during the early 1900s  
 14 (Eisenmann 1971). Until the 1960s, the species was declining throughout its North American  
 15 range, but it has since recovered in some areas. Its current distribution includes the east coast  
 16 and southeast United States, the southwest United States from Texas to California, and north to  
 17 Washington State, and from Mexico to South America (Dunk 1995). Relatively stable resident



18 populations occur in California, parts of  
 19 coastal Oregon and Washington, southern  
 20 Florida, southern Texas, and parts of  
 21 northern Mexico. White-tailed kite is  
 22 considered rare in the remaining portions  
 23 of its North American range. Range  
 24 expansion has also been noted in some  
 25 Central American areas (Eisenmann  
 26 1971).

27 Prior to the 1960s, California populations  
 28 were thought to be seriously declining,  
 29 likely due to habitat loss, shooting, and  
 30 possible egg collecting (Pickwell 1930,  
 31 Waian and Stendell 1970). Populations  
 32 and distribution increased from the 1940s  
 33 to the 1970s (Fry 1966, Waian and  
 34 Stendall 1970, Eisenmann 1971), due to  
 35 protection from shooting and possibly due  
 36 to increasing agricultural development,

1 which may have increased rodent habitat and expanded the foraging range of white-tailed kite  
2 (Eisenmann 1971, Small 1994). In the Sacramento Valley, white-tailed kite populations have  
3 increased significantly in irrigated agricultural areas where meadow vole (*Microtus californicus*)  
4 populations are found (Warner and Rudd 1975).

5 California is currently considered the stronghold for white-tailed kite in North America, with  
6 nearly all areas up to the western Sierra Nevada foothills and southeast deserts occupied (Small  
7 1994, Dunk 1995). It is a common to uncommon year-round resident in the Central Valley,  
8 other lowland valleys, and along the entire length of the coast (Dunk 1995).

9 Although white-tailed kite is likely resident throughout most of its breeding range, dispersal  
10 occurs during the non-breeding season, leading to a winter range expansion that includes most of  
11 California (Small 1994, Dunk 1995).

#### 12 **A.10.2.2 Distribution and Status in the Plan Area**

13 The California Natural Diversity Database reports few records of white-tailed kite in Butte  
14 County; however, the species has been reported in various environmental documents, birders  
15 notes, and from a variety of other official and unofficial sources (see Figure A-10). The species  
16 is known to occur along the Sacramento River, Feather River, Butte Creek, Big Chico Creek, and  
17 at Gray Lodge Wildlife Area, and various other locales throughout most of Butte County, from  
18 the Sierra Nevada foothills to the Sacramento River. While the area likely supports more nesting  
19 pairs than were present prior to the 1960s, it is still considered uncommon throughout much of  
20 Butte County. The species is expected to occur in low densities throughout much of the Plan  
21 Area.

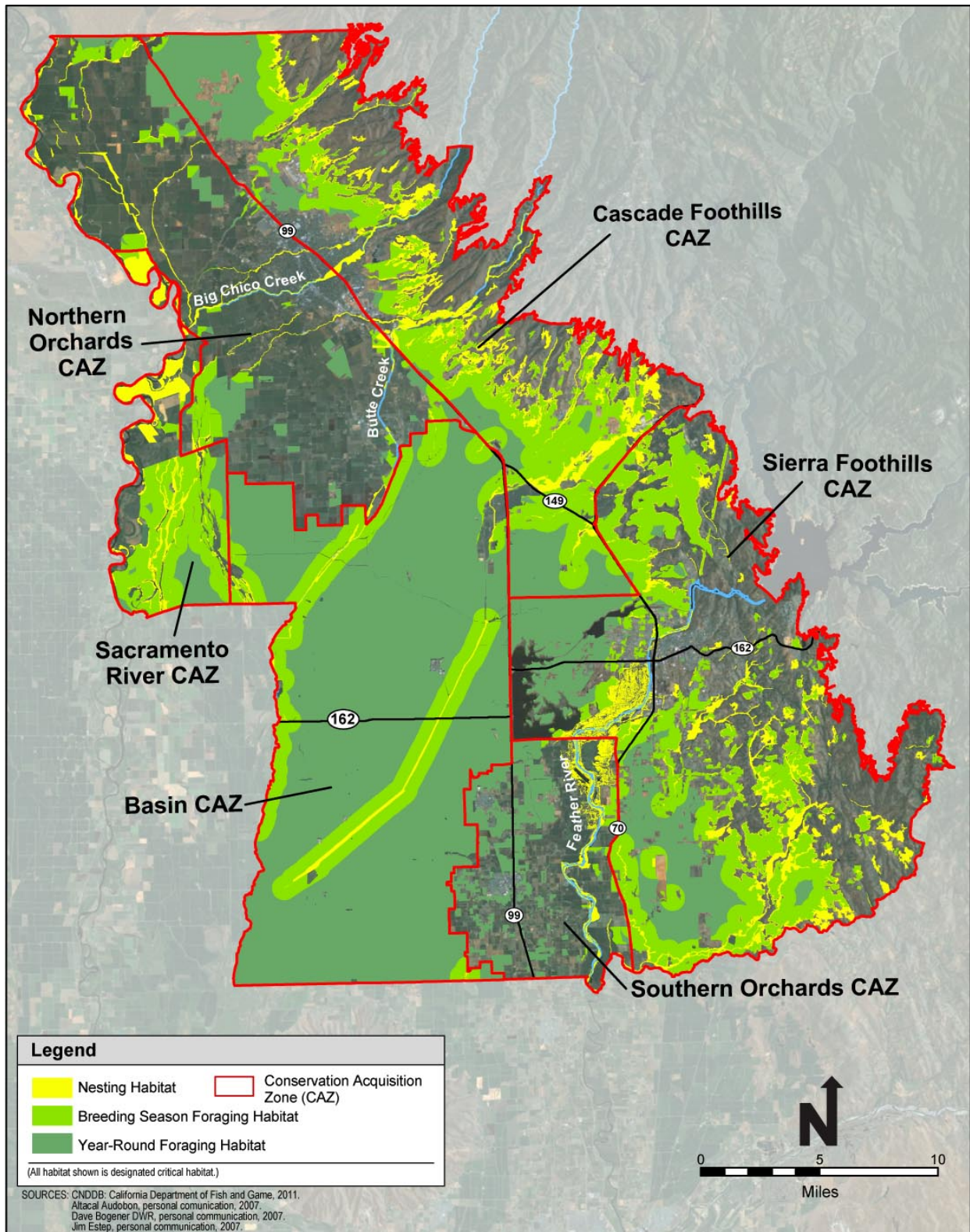
#### 22 **A.10.3 Habitat Requirements and Special Considerations**

23 White-tailed kite inhabit low elevation, open grasslands, savanna-like habitats, agricultural areas,  
24 wetlands, and oak woodlands (Dunk 1995). They usually nest in trees with a dense canopy, but  
25 nest trees can vary from single, isolated trees to trees within large woodlands. Factors that  
26 influence nest site selection and nesting distribution include habitat structure (usually a dense  
27 canopy) and prey abundance and availability (primarily the association with meadow vole),  
28 while the association with specific vegetation types (e.g., riparian, oak woodland, etc.) seems to  
29 be less important (Erichsen 1995, Dunk 1995).

30 Territory size is regulated ultimately by prey abundance, though kites may respond more directly  
31 to the abundance of interspecific and intraspecific competitors (Dunk 1995). Reported average  
32 territory sizes are 4 to 53 acres (1.6–21.5 hectares [ha]) (Dunk and Cooper 1994), 47 to 130 acres  
33 (19–52 ha) (Waian 1973), and 42 to 297 acres (17–120 ha) (Henry 1983). Some ranges may  
34 overlap, and foraging may be limited to a small portion of the total area (Henry 1983).  
35 Communal roosts are used during the nonbreeding season (Waian and Stendell 1970).

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Figure A-10. White-Tailed Kite Modeled Habitat

### 1 **A.10.3.1 Nesting**

2 White-tailed kite nests have been documented in a variety of tree species, including valley oak  
3 (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), willow (*Salix* spp.), live oak  
4 (*Quercus wislizenii*), boxelder (*Acer negundo*), ornamental trees including olive and pine trees,  
5 and occasionally in tall shrubs (Dixon et al 1957, Dunk 1995). Nest trees appear to be selected  
6 on the basis of structure and security, and therefore usually have a dense canopy or are within a  
7 dense group of trees, such as riparian forest or oak woodland. Kites occasionally use isolated  
8 trees, but this is relatively rare. Most nests in the Sacramento Valley are found in  
9 oak/cottonwood riparian forests, valley oak woodlands, or other groups of trees and are usually  
10 associated with compatible agricultural foraging habitat, such as pasture and hay crops,  
11 compatible row and grain crops, or natural vegetation such as seasonal wetlands and annual  
12 grasslands (Erichsen 1995).

13 White-tailed kites often nest in close association with other nesting kites and with other raptors,  
14 including Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), and red-  
15 shouldered hawk (*Buteo lineatus*), particularly in riparian habitats of the Sacramento Valley.

### 16 **A.10.3.2 Foraging**

17 While a variety of foraging habitat types are used, those that support larger and more accessible  
18 prey populations are most suitable. The presence of meadow voles is strongly correlated with  
19 the presence and abundance of white-tailed kites (Stendell 1972). As a result, population cycles  
20 of meadow voles can also influence nesting and wintering abundance of kites. Preferred cover  
21 types include alfalfa and other hay crops, irrigated pastures, and some cultivated habitats,  
22 particularly sugar beets and tomatoes, both of which can support relatively large populations of  
23 voles (Estep 1989) and which have been highly correlated with kite nest site densities (Erichsen  
24 1995). Dry pastures, annual grasslands, rice stubble fields, and occasionally orchards, are also  
25 used by kites as foraging habitat (Erichsen (1995).

26 Winter foraging habitat is similar to breeding season foraging habitat, particularly the association  
27 with agricultural habitats and vole populations. However, there is less association with riparian  
28 forests and woodlands.

## 29 **A.10.4 Life History**

### 30 **A.10.4.1 Seasonal Patterns**

31 Although considered a resident throughout most of its breeding range, white-tailed kite dispersal  
32 occurs during the nonbreeding season and results in some range expansion during winter.  
33 Stendell (1972) believed the white-tailed kite to be resident, yet becomes nomadic during periods  
34 of low prey abundance. While population changes and local and regional movements seem to be  
35 somewhat predictable based on vole and other rodent cycles, in northern California it is unknown

1 whether this constitutes a migration movement or nomadic response to changes in the prey  
2 populations (Dunk and Cooper 1994).

### 3 **A.10.4.2 Reproduction**

4 The breeding season occurs from about January to October with peak activity occurring from  
5 May through August (Dunk 1995). Nests are loosely piled sticks and twigs that are lined with  
6 grass, straw, or rootlets. The nest is placed near the top of a dense oak, willow, or other tree;  
7 usually 20 to 65 feet (6 to 20 meters [m]) above ground in trees that vary from 10 to 164 feet (3  
8 to 50 m) in height (Dixon, et al. 1957). Females lay a clutch of four eggs, with a range of three  
9 to six eggs. The female is the only parent that incubates and also performs most of the brooding,  
10 while the male provisions the female and nestlings. Eggs are incubated for about 28 days.  
11 Young fledge in 35 to 40 days following hatching, with the peak fledging period occurring from  
12 May to June (Erichsen 1995).

### 13 **A.10.4.3 Foraging Behavior and Diet**

14 White-tailed kites typically hunt from a central perch over areas as large as 1.1 square miles (3  
15 square kilometers [km]) (Warner and Rudd 1975), but foraging usually occurs within 0.3 square  
16 miles (0.8 km) from the nest during the breeding season (Hawbecker 1942). While kites are not  
17 particularly territorial, the nest site and the immediate surrounding area are defended against  
18 crows and other raptors (Pickwell 1930, Dixon et al. 1957), and small defended wintering  
19 territories of about 0.04 square miles (0.10 km) have been documented (Bammann 1975).

20 Voles are the main prey of white-tailed kite, but they also other small, diurnal mammals, and  
21 occasionally birds, insects, reptiles, and amphibians. Small mammal prey comprises 95 percent  
22 of the kite diet (Dunk 1995). Kites forage in undisturbed, open grasslands, meadows, farmlands  
23 and emergent wetlands, ungrazed grasslands, fence rows and irrigation ditches adjacent to grazed  
24 lands (Dunk 1995). It soars, glides, and hovers less than 100 feet (30 m) above the ground while  
25 searching for prey and hunts almost exclusively by hovering from 16 to 82 feet (5 to 25 m) in the  
26 air, with hovering bouts lasting up to 60 seconds. During this time, kites scan the ground  
27 searching for prey and watching for potential competitors or predators. Hovering ends in a dive  
28 to the ground for prey, flight to another location, soaring, interacting with another bird, or flight  
29 to the perch (Warner and Rudd 1975).

## 30 **A.10.5 Threats**

### 31 **A.10.5.1 Urbanization/Fragmentation**

32 Urbanization, including residential and commercial development and infrastructure development  
33 (roads and oil, water, gas, and electrical conveyance facilities), is one of the principal causes of  
34 continuing white-tailed kite habitat loss and is a continuing threat to remaining populations,  
35 particularly in rapidly urbanizing areas in the Sacramento Valley. Urbanization permanently  
36 removes habitat and results in the permanent abandonment of nesting territories. Proximity to

1 urban areas also influences kite occurrence. While there are a few examples of kites nesting and  
2 roosting in urban areas, in general, the species is intolerant of noise and human activities and will  
3 abandon nesting areas that are subject to high levels of human disturbances. Kites are also  
4 sensitive to habitat fragmentation. Low density urbanization or isolation of habitats, even if  
5 relatively large patches remain undisturbed, also leads to territory abandonment.

#### 6 **A.10.5.2 Agricultural Crop Conversion**

7 White-tailed kite populations are closely associated with rodent abundance and accessibility,  
8 which can be influenced by crop patterns. Kite populations have recovered to some extent in  
9 California due in part to the expansion of compatible agricultural types. Conversion to crop  
10 patterns that do not support sufficient rodent prey or that restrict accessibility to prey can result  
11 in the abandonment of traditionally active territories.

#### 12 **A.10.6 Relevant Conservation Efforts**

13 Few conservation efforts have been undertaken to conserve white-tailed kite populations, and the  
14 lack of state or federal listing limits the extent of regulatory influence. However, conservation of  
15 white-tailed kite would be aided by filling current data gaps regarding population status and  
16 trends, migration, dispersal from nesting sites, and other aspects of annual movements

17 Protection of white-tailed kite usually occurs at the local project level pursuant to the California  
18 Environmental Quality Act (CEQA). While project level mitigation may address protection of  
19 active sites and avoidance of take of this fully protected species, they do not address  
20 conservation or protection at a regional level.

21 Regional conservation efforts have focused on the development and implementation of habitat  
22 conservation plans/natural community conservation plans. Such regional conservation  
23 approaches can be an effective tool to manage and sustain white-tailed kite populations if they  
24 protect sufficient suitable and occupied habitat. These approved and proposed plans include the  
25 San Joaquin County Multi-species Habitat Conservation and Open Space Plan, the South  
26 Sacramento County Habitat Conservation Plan, the Yolo County Natural Heritage Program Plan,  
27 and the Bay Delta Conservation Plan.

#### 28 **A.10.7 Species Habitat Suitability Model**

##### 29 **A.10.7.1 Nesting Habitat**

30 Nesting habitat for the white-tailed kite includes the following:

- 31 • Cottonwood-willow riparian forest, valley oak riparian forest, and dredger tailings with  
32 riparian;
- 33 • Undeveloped/undisturbed land cover types that fall within the Cherokee Canal (the area  
34 between the two levees);

- 1 • Blue oak woodland, mixed oak woodland, and interior live oak woodland land cover  
2 types in the Plan Area within 100 feet of adjacent patches of grassland, grassland with  
3 vernal swale complex, irrigated cropland, rice, and irrigated pasture land cover types that  
4 are at least 27 acres; and
- 5 • Blue oak savanna with a minimum patch size of 27 acres or patches that are adjacent to  
6 grassland, grassland with vernal swale complex, irrigated cropland, irrigated pasture, rice,  
7 and managed wetlands that are at least 27 acres.

#### 8 **A.10.7.2 Assumptions**

9 White-tailed kites nest in a variety of woodland habitat types. Primary nesting habitat on the  
10 valley floor includes all riparian forest and scrub habitats regardless of width or density. On the  
11 valley floor, kites also nest in isolated trees along irrigation canals, wind breaks and other tree  
12 rows, roadside trees, and in trees around rural residences (Erichsen 1995). With the exception of  
13 habitat along the Cherokee Canal, these potential nesting sites are not captured in the habitat  
14 model if their spatial extent is smaller than the minimum HCP/NCCP land cover type mapping  
15 unit. Consequently, this model may not encompass every possible nesting site. The extent of  
16 nesting habitat that is not captured by the model is considered to be relatively small compared to  
17 the extent of nesting habitat that is captured by the model.

18 Kites also nest at higher foothill elevations and can be found throughout the eastern portion of  
19 the Plan Area where available foraging habitat exists. Kites will nest in a variety of woodland  
20 habitats at higher elevations, but are restricted to areas that support sufficient open grassland or  
21 pastureland foraging habitat. In these areas, kites nest along the edges of woodlands (assumed to  
22 be within 100 feet) at the woodland-grassland interface and avoid the interior. A minimum patch  
23 size to represent suitable foraging habitat associated with higher elevation woodland nesting  
24 habitat is not available. As a surrogate for establishing this threshold, the average kite territory  
25 size of 27 acres in northern California is used (Dunk 1995).

#### 26 **A.10.7.3 Year-Round Foraging Habitat**

27 White-tailed kite foraging habitat includes grassland, grassland with vernal swale complex,  
28 vernal pool, altered vernal pool, managed wetland, irrigated cropland, irrigated pasture, and rice  
29 land cover types.

#### 30 **A.10.7.4 Assumptions**

31 During the nonbreeding season, kites are not confined to the limits of breeding territories and can  
32 be found throughout the Plan Area where they will forage in the land cover types listed above.

### 1 **A.10.7.5 Breeding Season Foraging Habitat**

2 White-tailed kite breeding season foraging habitat includes grassland, grassland with vernal  
3 swale complex, vernal pool, altered vernal pool, managed wetland, irrigated cropland, irrigated  
4 pasture, and rice land cover types located within one-half mile of nesting habitat.

### 5 **A.10.7.6 Assumptions**

6 During the breeding season, kites forage on the same land cover types as they do year-round, but  
7 generally restrict their foraging territories to an approximately 1 square mile area around the nest  
8 (Warner and Rudd 1975). To date, very few white-tailed kite nest sites have been reported for  
9 Butte County and no nest site occurrences are shown on the map.

### 10 **A.10.8 Recovery Plan Goals**

11 Currently there is no recovery plan for the white-tailed kite.

### 12 **A.10.9 References**

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