

**California Wildlife Habitat Relationships System  
California Department of Fish and Game  
California Interagency Wildlife Task Group**

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## Cropland

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## Vegetation

**Structure**—Vegetation in this habitat includes a variety of sizes, shapes, and growing patterns. Field corn can reach ten feet while strawberries are only a few inches high. Although most crops are planted in rows, alfalfa hay and small grains (rice, barley, and wheat) form dense stands with up to 100 percent canopy closure. Most croplands support annuals, planted in spring and harvested during summer or fall. In many areas, second crops are commonly planted after harvesting the first. Wheat is planted in fall and harvested in late spring or early summer. Overwintering of sugar beets occurs in the Sacramento Valley, with harvesting in spring after the soil dries.

**Composition**—The 1982 crop report (California Department of Food and Agriculture 1983) recognized 200 crops in California that include 25 classified as orchard or vineyard for Wildlife Habitat Relationships (WHR) purposes. Cropland vegetation is grown as a monoculture, using tillage or herbicides to eliminate unwanted vegetation.

**Other Classifications**—Most vegetation classification systems include cropland in more general categories, such as Agriculture (California Department of Fish and Game 1966) or Urban/Agriculture (Parker and Matyas 1981).

## Habitat Stages

**Vegetation Changes**—Cropland habitats do not conform to normal habitat stages. Instead, cropland is regulated by the crop cycle in California. These habitats can either be annual or perennial, vary according to location in the state, and germinate at various times of the year. Crops such as milo, cotton, rice and lettuce are common annual plants, whereas alfalfa, asparagus, artichokes and strawberries are perennials. In addition, the crop rotation system is used extensively. The system rotates crop types (usually between annual and perennials) to conserve soil nutrients, thus maintaining soil productivity.

**Duration of Stages**—Most cropland types in California are annuals and are managed in a crop rotation system. Generally, the crop rotation system employs a combination of annual and perennial crops on a 5-7 year rotation. For example in the San Joaquin Valley, cotton will be planted and maintained for 3 years, following by 3 years of alfalfa and 1 year of grain. In Imperial and Ventura Counties crops are cultivated year-round. Double and triple cropping is a common practice in some areas. After the first crop is harvested, a second and sometimes a third crop is planted and harvested depending on species and

climate. For example, in Ventura County on the Oxnard plain, cool weather crops such as lettuce and cabbage are grown in the fall and winter followed by tomatoes, corn, and peppers in the spring and summer. Planting time frames vary as well with the majority of cropland habitats being planted in spring and harvested late summer and early fall. However, exceptions do exist (e.g. sugar beets) where crops are planted in the summer and harvested the following spring.

## Biological Setting

**Habitat**— Croplands occur in association with Orchard-Vineyard, Pasture (Irrigated), Residential-Park, and wildlife habitats such as riparian, chaparral, wetlands, desert, and herbaceous types.

**Wildlife Considerations**— Croplands are established on the State's most fertile soils, which historically supported an abundance of wildlife unequalled in other sites. Croplands have greatly reduced the wildlife richness and diversity of California. Many species of rodents and birds have adapted to croplands and are controlled by fencing, trapping, and poisoning to prevent excessive crop losses (California Department of Food and Agriculture 1975). Prior to establishing State and Federal wildlife refuges, waterfowl depredation of crops was extensive. That problem has been essentially eliminated; however, some species of waterfowl depend on waste rice and corn that remain in the fields after harvesting (California Department of Fish & Game 1983). Deer, elk, antelope, and wild pigs forage in alfalfa and grain fields and can cause depredation problems. Pheasants introduced to the cropland habitat have experienced recent population declines owing to changes in crop patterns and cultural practices for growing small grains. Changes include clean farming, double cropping, and chemical control of rice diseases and pests rather than leaving land fallow in alternate years. Except for insectivores, raptors, doves, and pheasants, avian wildlife that becomes numerous and uses crops before they are harvested are generally not welcome by growers. Wildlife such as waterfowl, sandhill cranes, and other species that use waste grains after harvest are usually not discouraged. Croplands flooded for weed control, leaching, irrigation, or waterfowl hunting serve as freshwater wetlands for a variety of associated wetland wildlife, including shorebirds, wading birds, and gulls.

## Physical Setting

Croplands are located on flat to gently rolling terrain. When flat terrain is put into crop production, it usually is leveled to facilitate irrigation. Rolling terrain is either dry farmed or irrigated by sprinklers. Soils often dictate the crops grown. Corn requires better soils than barley, which can grow on poor quality soils, and rice does well on clay soils not suitable for other crops. Leaching can remove contaminants in areas of high salt or alkali levels, making the soils highly productive. This has occurred extensively in the San Joaquin and Imperial Valleys. Climate also influences the type of crops grown. Only hardy crops such as potatoes, barley, and wheat do well in the short growing season in Klamath Basin; whereas, in the Imperial Valley, a variety of crops grow over an eleven

month, frost-free growing season.

## Distribution

There were over 5,768,100 acres of commercial cropland in California in 1983, located in every county but San Francisco (California Department of Food and Agriculture 1983). Hay was grown in nearly every county on more acreage than any other crop—1,480,000 acres. Cotton was second with 950,000 acres in the San Joaquin and Imperial Valleys. Wheat was third with 720,000 acres in all areas of the State except the north coast, 72 percent being produced in the Sacramento and San Joaquin Valleys (University of California 1983).

## Literature Cited

- California Department of Fish & Game. 1966. California fish and wildlife plan. California Department of Fish & Game, Sacramento.
- California Department of Fish & Game. 1983. A plan for protecting, enhancing, and increasing California's wetlands for waterfowl. California Department of Fish & Game, Sacramento.
- California Department of Food and Agriculture. 1975. Vertebrate pest control handbook. California Dep. Food and Agric., Sacramento.
- California Department of Food and Agriculture. 1983. California agriculture—1982. California Dep. Food and Agric., Sacramento.
- Parker, I. and W.J. Matyas. 1981. CALVEG: a classification of Californian vegetation. U.S. Dep. Agric., For. Serv. Reg. Ecol. Group, San Francisco.
- University of California. 1983. California field crops: location of production and trends in acreage, yields, and production. 1945-1981. Univ. Calif. Bull. 1910.