CHAPTER 8

ENVIRONMENTAL RESOURCES

This chapter assesses the impacts of development under the *General Plan* on environmental resources. The issues addressed in this chapter are water resources, mineral resources, vegetation and wildlife resources, and air quality.

8.1 WATER RESOURCES

ENVIRONMENTAL SETTING

This section describes the impacts on water resources associated with development projected to occur under the *General Plan* through the year 2020. Detailed information about water resources is contained in Chapter 7 of the *Background Report*. Other water related issues, such as water supply and demand and storm drainage are discussed in Chapter 5 (Public Facilities and Services) of this *EIR*, and flooding issues are discussed in Chapter 9 (Health and Safety).

Groundwater Quality and Quantity

Groundwater quality in Yolo County is generally very good. Expensive water treatment systems are generally not necessary for municipal/domestic use because bacteria is low and the total dissolved solid (TDS) is acceptable.

Surface Water

The sources of surface water in the county are three natural water courses: the Cache Creek watershed, the Sacramento River watershed, and the Putah Creek Watershed. Some water from Cache Creek is supplied from Clear Lake and Indian Valley reservoir. Sacramento River water is supplied directly from the river, and under Bureau of Reclamation contracts through the Tehama-Colusa canal, and indirectly via the Colusa Drain in the form of return flow from irrigation in Colusa and Yolo Counties. Lake Berryessa (Putah Creek) water is supplied almost exclusively to Solano County.

The various sources of surface water are of suitable quality for agriculture and, except for the Colusa Basin Drain, all could be used, with appropriate treatment, for municipal supplies. With respect to the use of water supplies from Cache Creek for agriculture, boron is the single most significant constituent. The concentrations of boron vary depending upon the magnitude of flow in Cache Creek, since the concentration is affected primarily by dilution. Although the concentration of boron in the water supplies delivered by the Yolo County Flood Control and Water Conservation District could limit the range of crops that could be grown, it does not appear to have been a significant factor in crop selection in Yolo County.

Mercury continues to persist in Clear Lake and Cache Creek, as evidenced by data from the Regional Water Quality Control Board's toxic monitoring program.

The impacts to the City of Woodland's water supply and distribution system from development of the *General Plan's* Land Use Diagram is analyzed in Chapter 4 of this EIR. This section focuses on the issues of cumulative groundwater and surface water quality.

METHODOLOGY

This section describes the assumptions and thresholds of significance used to assess impacts to water quality that would be expected to occur by the year 2020 under the *General Plan*. The water analysis was conducted quantitatively as well as qualitatively, assessing the anticipated water effects on existing water resources from the development of the proposed land uses.

Assumptions

1. Adverse impacts to surface water quality are assumed to be directly related to increased surface water runoff from impervious surfaces which flush urban pollutants into surface waters. This is a long-term impact of urban development. An additional short-term impact is associated with runoff from construction activities.

2. The DWR and Yolo County are expected to continue monitoring the effects associates with potential groundwater subsidence associated with the Water Bank Program's water transfer agreements between the County and Conaway Ranch, Inc.

3. New development will comply with any future changes in discharge requirements.

Thresholds of Significance

As defined in Appendix G of the *CEQA Guidelines*, water resource impacts are considered significant if the project would substantially degrade water quality; contaminate a public water supply; substantially degrade or deplete groundwater resources; interfere substantially with groundwater recharge, or use water in a wasteful manner.

IMPLICATIONS OF THE LAND USE DIAGRAM

Surface Water Quality

Development under the Land Use Diagram could affect water resources through the short-term increase in pollutant discharges to surface waters resulting from construction and grading, and the long-term increases in discharges of pollutants resulting from the increased development and use of roadways, parking lots, corporation yards, landscaped areas, and other urban features.

Construction and grading activities from development could temporarily increase discharges to surface waters. Some increase in sediment discharge usually results from ground disturbances associated with construction and grading. The low erosion hazard characteristic of Woodland soils, however, should limit sediment runoff. Discharges to surface waters of other construction-related pollutants, including cement, oil, and solvents, are likely to be of greater significance.

Discharges of construction-related pollutants are greater during the rainy season than during the dry season. Construction activities in the immediate vicinity of waterways discharge greater amounts of pollutants than projects located further from waterways.

Development under the General Plan could also cause a long-term increase in pollutant discharges. Runoff from streets, parking lots, corporation yards, and landscaped areas typically contain pollutants such as oil, grease, heavy metals, pesticides, fertilizers, and sediment. Discharges of farm pollutants (e.g., herbicides,

insecticides, fertilizers, oil, and sediment) would decrease as farmland is development with urban uses, partially offsetting increased pollutants from urban runoff.

Groundwater

The effects on the overall groundwater supply are discussed in the "Water Supply and Delivery" section of Chapter 5. The potential for groundwater contamination from runoff is related to depth of the water table; the higher the water table, the simpler the percolation and transfer of contaminants through wells and other conduits.

Converting farmlands to urban uses will alter the kinds of pollutants that percolate to the aquifers underlying the city. Infiltration of farm chemicals, primarily from lands currently producing field crops and row crops, will be reduced. Urban contaminant discharges to groundwater could increase, however, as farmlands are developed. The potential for contamination of groundwater from urban sources would be greatest during construction and grading activities.

GENERAL PLAN POLICY RESPONSE

The *Policy Document* includes policies and implementation measures to address impacts to surface water and groundwater resources associated with development under the *Land Use Diagram.*

Water Resources

7.A.1. The City shall cooperate with Yolo County in the conservation of Cache Creek for the protection of its water resources and its open space qualities. To this end, the City shall oppose the introduction of new potential sources of pollutants to Cache Creek.

7.A.2. The City shall monitor any activities that may degrade the aquifers of Cache Creek as it impacts City water supply and shall support the maintenance of high water quality in Cache Creek.

7.A.3. The City shall cooperate with other jurisdictions in jointly studying the potential for using surface water sources to balance the groundwater supply so as to protect against aquifer overdrafts and water quality degradation.

7.A.4. The City shall help protect groundwater resources from overdraft by promoting water conservation and groundwater recharge efforts.

7.A.5. The City shall continue to require the use of feasible and practical best management practices (BMPs) to protect receiving waters from the adverse effects of construction activities and urban runoff.

7.A.6. The City shall encourage the protection of floodplain lands and where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access and recreation.

These policies call for the protection of groundwater and surface water through City efforts and participation in regional efforts.

IMPACTS

New development under the *General Plan* would increase urban runoff to surface and groundwater. Policies and programs of the *General Plan*, however, provide for mitigation of runoff from development projects, including the use of Best Management Practices and development of a storm drainage ordinance to address the quality of runoff from the storm drainage system in Woodland. In addition, state and federal water quality regulations will help minimize these impacts. The impact of new development on surface and groundwater quality is, therefore, considered less-than-significant.

MITIGATION MEASURES

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

8.2 MINERAL RESOURCES

ENVIRONMENTAL SETTING

Current mineral extraction operation in the vicinity of Woodland involves aggregate (sand and gravel) mining on Cache Creek north of the city. The *Background Report* describes the location and extent of known and potential mineral extraction sites in area, concluding that there is no mining currently within the Planning Area.

METHODOLOGY

This section describes the assumptions and thresholds of significance used to determine impacts to mineral resources.

Assumptions

Significant deposits of minerals are identified in Yolo County as MRZ-2, as defined by the Surface Mining and Reclamation Act (SMARA).

Thresholds of Significance

Impacts associated with mineral resource extraction are considered significant if development under the *General Plan* would: (a) result in substantial conflict between existing mineral extraction operations and newly urban or suburban land uses; (b) result in substantial conflict between new mineral extraction operations and existing urban or suburban land uses; or (c) substantially reduce the availability of significant mineral deposits in the county.

IMPLICATIONS OF THE LAND USE DIAGRAM

There are no designated mineral resource zones in the Planning Area, therefore, the *General Plan* would have no effect on mineral resources.

GENERAL PLAN POLICY RESPONSE

Because the Planning Area contains no areas of important mineral resources, the plan includes no policies concerning mineral resources.

IMPACTS

Because no areas with mineral resources would be developed under the *General Plan*, development under the *General Plan* would have no significant impact on mineral resources.

MITIGATION MEASURES

No mitigation is required since the *General Plan* would have no impact on mineral resources. The *General Plan* could be modified, however, to support countywide efforts to protect mineral resources.

8.3 VEGETATION AND WILDLIFE RESOURCES

This section describes the impacts on biological resources resulting from development under the *General Plan*. Specifically, this section focuses on the expected impacts on the biotic habitats and their native plants and animals.

ENVIRONMENTAL SETTING

The Woodland Planning Area's biological resources are described in Chapter 7 of the *General Background Report*. The information in that report and the following summary is based on information contained in a *Draft Yolo County Habitat Conservation Plan* (HCP), January 1995, prepared by EIP Associates, located on file at the City of Woodland Community Development Department, 300 First Street in Woodland.

The primary goal of the *Yolo County HCP* is the conservation of state and federally listed threatened or endangered species, or Category 1 candidate species for such status, that may occur within the spheres of influence of the eight urban areas of the county where future growth is anticipated.

Target Species

One objective of the *HCP* is to conserve uncommon taxa of native Californian flora and fauna known from Yolo County *before* they become listed as threatened or endangered by the State of California or the U.S. Department of the Interior. Therefore, a broad definition of species that *might* be considered for inclusion in the *HCP* was adopted. These potential "target species" of flora and fauna were defined to include species, subspecies, or varieties of plants and animals that fell into one or more of the following categories:

Flora (Plants)

1. Taxa officially listed as threatened or endangered by the State of California or the U.S. Department of the Interior (California Department of Fish and Game 1994a; 50 C.F.R. § 17.12 (1994));

2. Candidate taxa in Categories 1 and 2 for listing as threatened or endangered by the state or federal governments (California Department of Fish and Game 1994a; 58 Fed.51,144 (1993));

3. Taxa which meets the criteria for listing, even if not currently included on any list, as described in the *State CEQA Guidelines* §15380 (State of California, Governor's Office of Planning and Research 1992);

4. Taxa listed in the California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994);

5. Taxa that is biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation;

6. Population(s) in California that may be peripheral to the majority of a taxon's range, but are threatened with extirpation in California; and

7. Taxa closely associated with a habitat type that is declining in California at a high rate (e.g., wetlands, riparian habitats, native grasslands, vernal pools).

Fauna (Animals)

1. Taxa officially listed as threatened or endangered by the State of California or the U.S. Department of the Interior (14 Cal. Code Regs. §670.5; 50 C.F.R. §17.11 (1994);

2. Candidate taxa in Categories 1 and 2 for listing as threatened or endangered by state or federal governments (California Department of Fish and Game 1994b; 59 Fed. Reg. 58,982 (1991));

3. Taxa classified as "fully protected" pursuant to the following sections of the Fish and Game Code of California: §3511 (birds); §4700 (mammals); §5050 (amphibians and reptiles); and §5515 (fish);

4. Taxa protected pursuant to the federal Bald Eagle Protection Act (16 U.S.C. §668);

5. Taxa which meet the criteria for listing, even if not currently included on any list, as described in the *State CEQA Guidelines* §15380 (State of California, Governor's Office of Planning and Research 1992);

6. Taxa classified by the California Department of Fish and Game as "Species of Special Concern" (California Department of Fish and Game);

7. Taxa that are biologically rare, very restricted in distribution, or declining throughout their range, but not currently threatened with extirpation;

8. Population(s) in California that may be peripheral to the major portion of a taxon's range, but are threatened with extirpation in California; and

9. Taxa closely associated with a habitat type that is declining in California at a high rate (e.g., wetlands, riparian habitats, native grasslands, vernal pools).

Based on a screening process, the *HCP* identifies 29 target taxa in Yolo County that may be impacted by future land use activities. Table 8-1 lists these 29 species by scientific name, common name, and associated habitat. Some of these taxa are known from only a single locality in the Sacramento Valley or Delta regions of Yolo County (e.g., palmate bird's-beak); other species are more widespread (e.g., Swainson's hawk).

TABLE 8-1 Habitat descriptions for target HCP species.

Scientific Name	Common Name	Habitat Description
Lepidium latipes var. *heckardii*	Heckard's peppergrass	Alkaline flats in valley grassland
Atriplex depressa	Brittlescale	Playas or clay soils in valley grassland
Atriplex joaquiniana	San Joaquin saltbush	Alkali meadows and flats with alkali or clay soils
Astragalus tener var. *tener*	Alkali milkvetch	Adobe playas and vernal flats in the Central Valley
Cordylanthus palmatus	Palmate bird's-beak	Valley sink scrub and alkali grassland on saline-alkaline soils
Neostapfia colusana	Colusa grass	Vernal pools; typically deep pools
Tuctoria maconata	Crampton's tuctoria	Vernal pools; typically deep pools
Branchinecta conservatio	Conservancy fairy shrimp	Vernal pools and temporary ponded waters without fish
Branchinecta longiantenna	Longhorn fairy shrimp	Vernal pools and temporary ponded waters without fish
Branchinecta lynchi	Vernal pool fairy shrimp	Vernal pools and temporary ponded waters without fish
Lepidrus packardi	Vernal pool tadpole shrimp	Vernal pools and temporary ponded waters without fish
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	Riparian and elderberry savannah
Ambystoma californiense	California tiger salamander	Oak woodland and annual grassland with ground squirrel and pocket gopher burrows in association with vernal pools or stream courses
Scaphiopus hammondi	Western spadefoot	Open treeless grasslands or mixed woodland and grassland with temporary ponds or intermittent streams
Clemmys marmorata marmorata	Northwestern pond turtle	Streams, rivers, ponds, lakes, and marshes with deep pools and cover
Thamnophis gigas	Giant garter snake	Freshwater emergent wetlands and agricultural water systems with cover
Phalacrocorax auritus	Double-crested cormorant	Dead tree branches offshore, considerable lengths of water
Plegadis chihi	White-faced ibis	Dense, shallow, fresh emergent wetland; alfalfa
Accipiter cooperii	Cooper's hawk	Dense tree stands or partly woodland habitat
Buteo swainsoni	Swainson's hawk	Large, valley oak woodlands, large individual oaks; riparian trees; alfalfa, grassland, and annual field crops
Circus cyaneus	Northern harrier	Non-forested grasslands, marshes and prairies; alfalfa and annual field crops

TABLE 8-1 (continued). Habitat descriptions for target HCP species.

Scientific Name	Common Name	Habitat Description
Grus canadensis	Greater sandhill crane	Open, wet meadows and marshes; fields with cereal grain crops, corn stubble, irrigated pastures, rice stubble
Coccyzus americanus	Western yellow-billed cuckoo	Riparian areas, willow trees or walnut orchards, next to riparian zones
Asio flammeus	Short-eared owl	Grasslands, marshes, meadows, agricultural fields
Athene cunicularia hypugea	Western burrowing owl	Deserts, open grasslands, prairies, savannah with ground squirrel burrows
Riparia riparia	Bank swallow	Steep sides of river banks, borrow pits, road cuts adjacent to open water, croplands and grasslands
Lanius ludovicianus	Loggerhead shrike	Open habitats with scattered shrubs, trees, posts, fences, utility poles, or other perches.
Agelaius tricolor	Tricolored blackbird	Fresh water marshes and croplands.
Dendroica petechia brewsteri	California yellow warbler	Riparian deciduous habitats: cottonwoods, willows, alders, and other shrubs and trees of low stature and open-canopy riparian woodland

Biotic Habitats

A critical element in the development of the *HCP* was the identification and description of the habitat types that may be impacted by future land use activities. Habitats are defined by physical and biological attributes. These biological and physical attributes are typically represented by specific plant communities. Thus, a habitat type is defined as a group of plant communities that have similar environmental requirements.

The *HCP* identifies and describes habitat types found in Yolo County, including the Woodland Planning Area. These habitat types were defined by analyzing the physical and biological characteristics of specific locations as well as climatic cycles, natural disturbances, and plant community secession. The five primary habitat types identified in Yolo County include: Riparian, Wetland, Woodland, Grassland, and Agricultural. These primary habitats are broken down into subcategories based on variations in the habitat such as soil series and the characteristics unique to the habitat type. Table 8-2 lists the 29 target species identified for the *HCP* according to their associated habitat types and subtypes.

TABLE 8-2 OCCURRENCE OF TARGET HCP SPECIES AMONG HABITAT TYPES

Occurrence of target HCP species among habitat types

Common Name and Scientific Name	Riparian Habitats			Wetland Habitats				Woodland Habitats					Agricultural Habitats			
	Stream Courses	Valley Oak Riparian	Riparian Forests	Marshes	Vernal Pools	Ponds/ Lakes/ Open Waters	Alkaline Sinks	Oak Woodlands	Scattered Oaks in Agriculture	Wooded Savannahs	Elderberry Savannahs	Grassland Habitats	Alfalfa and Pastures	Annual Field Crops	Vineyards and Orchards	Rice
Heckard's peppergrass *Lepidium latipes* var. *heckardii*							▲					▲				
Brittlescale *Atriplex depressa*							▲									
San Joaquin saltbush *Atriplex joaquiniana*							▲									
Alkali milkvetch *Astragalus tener* var. *tener*					▲		▲									
Palmate bird's-beak *Cordylanthus palmatus*							▲									
Colusa grass *Neostapfia colusana*					▲											
Crampton's tuctoria *Tuctoria macronata*					▲											
Conservancy fairy shrimp *Branchinecta conservatio*					▲											
Longhorn fairy shrimp *Branchinecta longiantenna*					▲											
Vernal pool fairy shrimp *Branchinecta lynchi*					▲											
Vernal pool tadpole shrimp *Lepidrus packardi*					▲											
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*		▲	▲					▲	▲	▲	▲					
California tiger salamander *Ambystoma californiense*	▲				▲	▲		▲				▲				
Western spadefoot *Scaphiopus hammondi*					▲	▲				▲		▲				

TABLE 8-2 OCCURRENCE OF TARGET HCP SPECIES AMONG HABITAT TYPES

(continued). Occurrence of target HCP species among habitat types.

Common Name and Scientific Name	Riparian Habitats			Wetland Habitats				Woodland Habitats				Grassland Habitats	Agricultural Habitat			
	Stream Courses	Valley Oak Riparian	Riparian Forests	Marshes	Vernal Pools	Ponds/ Lakes/ Open Waters	Alkaline Sinks	Oak Woodlands	Scattered Oaks in Agriculture	Wooded Savannahs	Elderberry Savannahs		Alfalfa and Pastures	Annual Field Crops	Vineyards and Orchards	Rice
Western pond turtle *Clemmys marmorata marmorata*	▲			▲		▲		▲				▲				
Giant garter snake *Thamnophis gigas*	▲			▲		▲										▲
Double-crested cormorant *Phalacrocorax auritus*						▲										
White-faced ibis *Plegadis chihi*				▲									▲			
Cooper's hawk *Accipiter cooperi*		▲	▲	▲												
Swainson's hawk *Buteo swainsoni*		▲	▲						▲	▲		▲	▲	▲		▲
Northern harrier *Circus cyaneus*				▲								▲	▲	▲		▲
Greater sandhill crane *Grus canadensis*				▲								▲	▲	▲		▲
Yellow-billed cuckoo *Coccyzus americanus*		▲	▲												▲	
Short-eared owl *Asio flammeus*				▲								▲	▲	▲		▲
Western burrowing owl *Athene cunicularia hypugea*												▲				
Bank swallow *Riparia riparia*	▲					▲						▲	▲	▲	▲	▲
Loggerhead shrike *Lanius ludovicianus*										▲		▲	▲	▲		
Tricolored blackbird *Agelaius tricolor*				▲									▲			
California yellow warbler *Dendroica petechia brewsteri*			▲													
Total occurrences	4	4	5	8	9	6	5	3	2	4	1	11	8	6	2	6

The following describes the five types of habitat found in Yolo County and the vicinity of the Woodland Planning Area.

Riparian Habitat

In accordance with the Latin root of the word "riparian" (*ripa*, meaning bank), riparian habitat includes the entire range of vegetation types and other special elements (such as sand or mud) associated with the watercourses of Yolo County.

In contrast to some other familiar definitions of riparian habitats, riparian habitat is defined to incorporate not only vegetation and other elements that are observed at any one time, but also the continual process of localized habitat change that characterizes riparian areas. The recession of annual or flood-stage high waters often leaves behind newly exposed substrate, such as vertical eroded banks or bars of gravel, sand, and silt. The latter may be colonized by either herbaceous or woody vegetation that alters streamflow and erosion patterns as it grows and matures. These hydrologic changes may either enhance the growth of existing vegetation, or may destabilize or drown the root systems of mature trees. Death of branches or whole trees may create nest cavities for certain birds, perching snags for others, or downed dead logs or slash that provide habitat for other wildlife of several groups. Any given riparian area has the potential for supporting various specific riparian habitat types in the future.

The dynamic occurrence of sand and silt bars is accentuated by variability in the flooding regime. During periods of drought, as a consequence of natural metamorphosis of the stream channel morphology or as a result of flood control practices, channel banks or silt and sand bars may become vegetated over time and disappear as a microhabitat within a riparian system until a flood event occurs, redistributing the necessary sediment or creating scoured banks. Where a riparian area lacks a target species' habitat today, it might provide that habitat in 30 to 50 years.

Riparian habitat includes the following habitat subtypes: Stream Course; Valley Oak Riparian; and Riparian Forests.

Wetland Habitat

Wetland habitat types include natural wetland areas (whether rainfall or spring-supported), modified creeks and drainageways, irrigation and drainage ditches, excavated either in previously dry land or in wetlands, and various artificial impoundments, whether supplied with water by pumping or passively (flood control basins).

For the purposes of the *HCP*, wetlands are defined on a strictly functional basis, as habitats that are seasonally subject to either ponding or soil saturation. Accordingly, this habitat includes many areas that do not fall under federal wetland jurisdiction, which requires the presence of vegetation, soils, and natural hydrology that are characteristic of wetlands. On the other hand, it does not include all areas where hydrophytic vegetation occurs, unless they are also regularly characterized by saturation.

Because *HCP* habitat types are defined for the purpose of multi-species habitat conservation, the definition of wetland habitat as used in this report differs from other commonly used definitions in two main respects. First, it does not include marginally hydrophytic moist grasslands such as wildrye or Mediterranean barley grasslands, which have habitat values much more akin to untilled upland grassland or fallow agricultural land. "Facultative" species, such as grasses, are defined by the U.S. Fish and Wildlife Service as being found in wetlands in only about half of their occurrences (Reed 1988); they are nevertheless regarded as hydrophytic

in the context of federal wetland determination methodology (U.S. Army Engineer Waterways Experiment Station). Second, wetland habitat does include some areas whose topography or hydrology is artificial (that is, results from excavation or irrigation), as long as the areas in question offer wetland habitat values for target HCP species.

One regionally scarce habitat type that occurs within areas potentially subject to development, and which is critical to several HCP taxa, is very difficult to assign unequivocally to a defined HCP habitat type: saline/alkaline sinks. This habitat type intergrades almost imperceptibly between wetland and grassland, and some of its exposures within Yolo County are presently subject to agricultural activities. Inundation is rare or very limited in aerial extent, although saline soils may be subject to seasonal saturation. Moreover, the vegetation of this unusual habitat type varies from halophytic plants with little tolerance of saturation to species recognized as obligate wetland species by Reed (1988). Because the target species that are found on saline/alkaline soils are predominantly hydrophytic ones, for the present purposes, saline/alkaline sinks or playas are considered as a type of wetlands habitat.

Many wetland classification systems differentiate between perennial and seasonal habitat types, and between open water, submersed vegetation, and emergent vegetation. Recognition of these differences is important in determining habitat values, as some species require perennial water and others reproduce only in seasonal or ephemeral waters. However, different types may also occur within a single small wetland area. For example, a perennial water or wetland area may be surrounded by wetland vegetation supported by seasonal saturation. For this reason, one broadly defined habitat type with subtypes is defined for the mapping and analysis in the *HCP*.

Wetland habitat includes the following habitat subtypes: Marshes, Vernal Pools, Ponds/Lakes/Open Waters, and Alkaline Sinks.

Woodland Habitats

Woodland habitats include a continuously varying series of habitat types dominated, in height if not in areal cover, by trees. These types vary from closed-canopy oak forest, to open woodland (with canopy cover between approximately 10 and 70 percent), to savannah (conventionally defined as having canopy cover of 10 percent or less). For simplicity, and in recognition of their common biological values, large mature planted trees are also considered woodland habitat. Such trees occur as windrows or along roadways, as clumps of trees planted in agricultural or rangeland settings, and individual trees occurring within other non-wooded habitat types or urban areas.

Woodland habitat includes the following subtypes: Oak Woodlands; Scattered Oaks in Agriculture; Wooded Savannahs; and Elderberry Savannah.

Grassland Habitats

Within Yolo County, grasslands occur almost exclusively on slopes steeper than two percent. It is likely that some areas have been tilled in the past, but are no longer regularly cultivated. Areas of ruderal vegetation that have been or are regularly tilled are included within agricultural lands, as tilling reduces the habitat value of such lands for certain species, just as it probably increases their values for other species.

At present, the majority of grassland in Yolo County is more or less heavily used as livestock pasture.

Agricultural Habitats

Agricultural lands are intensively used lands that may have supported other habitat types in the historical past. Many of their habitat values overlap with those of less intensively modified lands categorized as other habitat types. For example, many of the habitat values of rice fields and other cultivated lands that are regularly subject to inundation are similar to those of wetlands, which many ricelands formerly were. Dry-farmed or briefly flood-irrigated croplands used to grow cereal crops, tomatoes, or particularly alfalfa, share or exceed some of the habitat values of grasslands. Nevertheless, for conservation purposes, it is necessary to map regularly cultivated lands separately from other non-urbanized lands.

Agricultural habitats include the following habitat subtypes: Alfalfa and Pasture; Annual Field Crops; Vineyards and Orchards; and Rice.

Habitat and Species in Woodland Planning Area

Figure 8-1 shows the distribution of habitat types within and surrounding the Woodland Planning Area. The map in Figure 8-1 was prepared by the Yolo County Community Development Agency based on information collected in conjunction with the *Habitat Conservation Plan* program. The map shows only two habitat types within the Planning Area. Riparian and grassland habitat are found just outside but not within the Planning Area. Woodland habitat in the form of scattered oaks in agriculture and wooded savannahs is found in the southern part of the Planning Area, but only in pockets too small to map given the scale of Figure 8-1.

The predominate habitat type found in the Woodland area is agriculture, accounting for the vast majority of land subject to development under the *General Plan*. The other important habitat type found in the Planning Area is wetlands in the forms of alkaline sinks, vernal pools, and ponds/lakes/open waters. Alkaline sinks cover a fairly small area in the northeast industrial area, but account for a fairly large area in the southeast part of the Planning Area. Within this area, the City's wastewater treatment ponds, adjacent industrial wastewater treatment facility, and a small area of the old landfill appear as ponds/ lakes/open water habitat. Vernal pools have been mapped in conjunction with alkaline sinks in several areas near the intersection of County Roads 102 and 25.

Due to the presence of agricultural, wetland, and woodland habitat, most of the species listed in Table 8-2 are potentially found within the Woodland Planning Area.

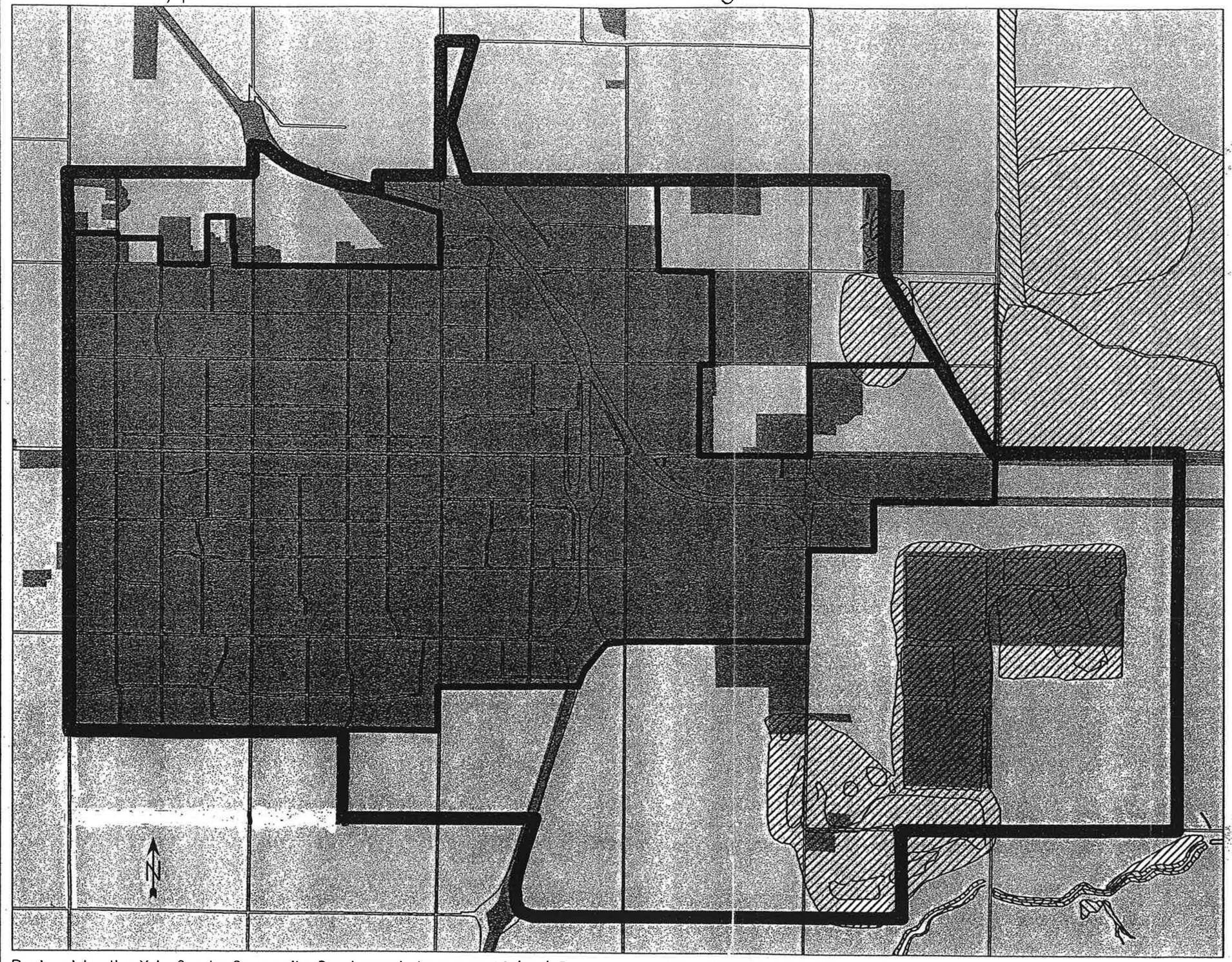
METHODOLOGY

This section describes the assumptions and thresholds of significance used to evaluate impacts on the biological resources within Woodland's Planning Area resulting from development under the General Plan Land Use Diagram.

Assumptions

For the purposes of this analysis several assumptions have been made about the kinds of future development expected to occur in Woodland, the effects of such growth on the area's biological resources, and the role the Yolo County *Habitat Conservation Plan* will play in assessing and mitigating potential impact to biotic resources. These assumptions are as follows:

Habitat Types Within the Woodland Planning Area



Habitat Types

- Agricultural
- Wetland
- Riparian

- Planning Area
- City Limit
- Major Roads
- Urban Areas

Scale in Miles

0 1/2 1

1 : 32 000

Figure 8–1

Produced by the Yolo County Community Development Agency – 10/11/95

Data Sources: DWR, EIP Associates, Jones & Stokes Associates, Yolo County

1. Impacts to wildlife species are assumed to be directly correlated with the loss of the plant and aquatic communities that provide their primary habitat. The conversion of these communities to residential, commercial, and industrial development, therefore, will result in the loss of associated wildlife species.

2. Urban development within the Urban Limit Line is assumed to eliminate most aquatic habitats and naturally occurring vegetation, and the native wildlife occurring in them. These losses would result from site grading, road building, infrastructure installation, filling or other damage to wetlands, and direct wildlife loss or disturbance by construction activities and human habitation. Any remaining fragments of an undeveloped habitat would be isolated from larger areas of contiguous habitat and would have substantially lower biological values than those prevailing before the development of new growth areas.

3. While the *Yolo County Habitat Conservation Plan* is scheduled for adoption in 1996 by Yolo County and by the City of Woodland, intending to establish a regional program for the mitigation of cumulative impacts to biotic resources, this plan has not yet been completed nor adopted. Specifically, this will address the issue of the cumulative loss of habitat and habitat subtype necessary to preserve sensitive target species, and the establishment of permanent regional solutions to problems that cannot be effectively mitigated on a project by project basis. Since this action cannot be guaranteed by this project, however, impacts are assessed without assumption of adoption of the HCP.

Thresholds of Significance

According to Appendix G of the *CEQA Guidelines*, a project's effects on biotic resources will be considered significant if the project will:

(a) substantially affect a rare or endangered species of animal or plant or the habitat of the species;

(b) interfere substantially with the movement of any resident or migratory fish and wildlife species;

(c) substantially diminish habitat for wildlife or plants.

For the purposes of this *EIR*, an impact on biological resources is considered significant if adoption or implementation of the *General Plan* would eliminate habitat of any of the 29 target species identified in the *Yolo County Habitat Conservation Plan.*

IMPLICATIONS OF THE GENERAL PLAN LAND USE DIAGRAM

Existing City Limits

Continued development within the Southeast Area Specific Plan area would convert agricultural habitat to urban development.

Northwest Industrial Area

The northwest industrial area north of Kentucky Avenue and west of East Street contains three subtypes of agricultural habitat: annual field crops, alfalfa and pastures, and vineyards and orchards. The first two of these are habitat for the following *HCP*- listed target species: white-faced ibis, Swainson's hawk, northern harrier, greater sandhill crane, short-eared owl, bank swallow, loggerhead shrike, and tri-colored blackbird.

Development of the vacant and underutilized parcels in the northwest industrial area would eliminate virtually all of the existing agricultural habitat within this area.

Northeast Industrial Area

The northeast industrial area north and east of I-5 contains three subtypes of agricultural and wetlands habitat: annual field crops; alkaline sinks; and ponds/lakes/open water. These are habitat for the following *HCP*-listed species: heckard's peppergrass, brittlescale, San Joaquin saltbush, alkali milkvetch, palmate bird's-beak, western pond turtle, giant garter snake, double-breasted cormorant, Swainson's hawk, northern harrier, white-faced ibis, and tri-colored blackbird. Development of the vacant and underutilized parcels in the northeast industrial area would eliminate virtually all existing agricultural and wetlands habitat within this area.

Southern Residential Expansion Area

The southern residential expansion area between County Roads 98 and 102 contains seven subtypes of agricultural, woodland, and wetlands habitats: annual field crops, alfalfa and pastures, vineyards and orchards, alkaline sinks, vernal pools, wooded savannahs, and scattered oaks in agriculture. These are habitat for all *HCP*-listed species identified above plus the following: colusa grass, crampton's tuctoria, conservancy fairy shrimp, long horn fairy shrimp, vernal pool fairy shrimp, California tiger salamander, and western spadefoot.

Development of vacant parcels under the Land Use Diagram would eliminate much of the above listed habitats and would eliminate all the remaining vineyards and orchards habitat, alfalfa and pastures, and vernal pools in the area.

GENERAL PLAN POLICY RESPONSE

The *General Plan Policy Document* includes the following policies concerning biological resources:

Fish and Wildlife Habitat

7.B.1. *The City shall participate in the countywide Habitat Conservation Plan to mitigate the impacts of growth projected under the General Plan on wildlife habitats in the Woodland area.*

7.B.2. *Until the countywide Habitat Conservation Plan is adopted, prior to approval of discretionary development permits involving parcels within a significant ecological resource area, the City shall require, as part of the environmental review process, a biotic resources evaluation of the site by a wildlife biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of federally- or state-listed rare, threatened, or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources, and will identify feasible measures to mitigate such impacts or indicate why mitigation is not feasible. In approving any such discretionary development permit, the City shall determine the feasibility of the identified mitigation measures.*

Significant ecological resource areas shall, at a minimum, include the following:

a. Any habitat for federally- or state-listed rare, threatened or endangered animals or plants.
b. Large areas of non-fragmented natural habitat

c. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.

7.B.3. In connection with the countywide Habitat Conservation Plan, the City shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations.

7.B.4. The City shall require that development in areas known to have particular value for wildlife be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.

7.B.5. The City shall encourage the control of residual pesticides to prevent potential damage to water quality, vegetation, and wildlife.

7.B.6. The City shall support preservation of the habitats of federally- or state-listed rare, threatened, endangered, and/or other special status species. Federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species' habitats.

7.B.7. The City shall cooperate with, encourage, and support the plans of other public agencies to acquire fee title or conservation easements to privately-owned lands in order to preserve important wildlife corridors and to provide habitat protection of California Species of Concern and state- or federally-listed rare, threatened, or endangered plant and animal species.

7.B.8. The City shall support and cooperate with efforts of other local, state, and federal agencies and private entities engaged in the preservation and protection of significant biological resources from incompatible land uses and development. Significant biological resources include endangered, threatened, or rare species and their habitats, wetland habitats, wildlife migration corridors, and locally-important species/communities.

7.B.9. The City shall support the management efforts of the California Department of Fish and Game to maintain and enhance the productivity of important fish and game species by protecting identified critical habitat for these species from incompatible suburban, rural residential, or recreational development.

7.2 In conjunction with Yolo County and other cities in the county, the City shall adopt the countywide Habitat Conservation Plan to mitigate the impacts of projected growth on plant and wildlife habitats in the Woodland area.

Vegetation

7.C.1. The City shall participate in the countywide Habitat Conservation Plan to mitigate the impacts of growth projected under the General Plan on vegetation habitats in the Woodland area.

7.C.2. The City shall encourage landowners and developers to preserve natural vegetation in visually-sensitive areas and along important transportation corridors.

7.C.3. The City shall require developers to use native and compatible non-native species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of permits or for project mitigation.

7.C.4. The City shall support the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

7.C.5. The City shall ensure that landmark trees and major groves of native trees are preserved and protected. In order to maintain these areas in perpetuity, protected areas shall also include younger vegetation with suitable space for growth and reproduction.

7.C.6. The City shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects, including those identified by the countywide Habitat Conservation Plan.

7.C.7. The City shall encourage the conservation of sufficiently large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife.

7.C.8. The City shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient catchment, and wildlife habitats. Such communities shall be restored or expanded, where possible and as appropriate.

7.C.9. The City shall require that new development preserve natural woodlands to the maximum extent possible.

7.C.10. The City shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.

7.C.11. The City shall require that new development avoid, as much as possible, ecologically-fragile areas (e.g., areas of rare or endangered species of plants, alkali sinks, riparian areas). Where feasible, these areas should be protected through public acquisition of fee title or conservation easements to ensure protection.

Open Space for the Preservation of Natural Resources

7.D.1. The City shall support the preservation and enhancement of natural land forms, natural vegetation, and natural resources as open space to the maximum extent feasible. The City shall, where appropriate, permanently protect as open space areas of natural resource value, including wetlands preserves, riparian corridors, woodlands, and floodplains.

7.D.2. The City shall require that new development be designed and constructed to preserve significant stands of vegetation and any areas of special ecological significance as open space to the maximum extent feasible.

7.D.3. The City shall support the maintenance of open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement, and sustain ecosystems.

7.D.4. Where it does not conflict with wastewater treatment requirements and public safety, the City shall consider allowing areas at the wastewater treatment plant site to function as plant and wildlife habitat and, where feasible, shall provide public access to these areas.

7.D.5. The City shall encourage the development of natural open space areas at the regional, community, and neighborhood parks.

7.D.6. The City shall serve as the steward of public open space and ensure that the use and maintenance of the open space is carried out in an environmentally responsible manner.

7.D.7. The City shall plan and establish natural open space parkland as a part of the overall City park system.

7.D.8. The City shall manage, enhance, and improve the City's tree cover as a valuable community resource.

7.D.9. The City shall investigate the benefits of annexing to the Resource Conservation District.

IMPACTS

Development of vacant and substantially vacant land under the *General Plan* will eliminate a substantial amount of habitat for target species identified in the *Yolo County Habitat Conservation Plan*. The primary vehicle for addressing this habitat loss will ultimately be the policies and programs of the *HCP*. The *HCP* is being designed specifically to address the cumulative loss of habitat through a range of mitigation programs. Woodland is actively participating in developing this plan, and expects to adopt the plan, along with Yolo County and the other cities in the county, sometime in 1996. The *General Plan Policy Document* requires the City to participate in the *HCP* (Policy 7.B.1). While adoption of the *HCP* by Woodland and the other jurisdictions cannot be assured and the policies and programs included in the plan cannot be determined at this point, the *General Plan Policy Document* includes several other policies to address habitat loss. In particular, Policy 7.B.2 would require evaluation and mitigation of habitat loss in connection with any City discretionary permit approval pending adoption of the *HCP*. This would be particularly important in the south residential expansion area where all new development will occur pursuant to a specific plan to be approved by the City.

Assuming the policies and programs of the *General Plan* and adoption of the *HCP*, the impact of the *General Plan* on biological resources would be less than significant. Given the uncertainty concerning adoption of the *HCP*, however, the cumulative impacts of the plan on biological resources must still be considered potentially significant.

MITIGATION MEASURES

Other than adoption of the HCP, no additional feasible mitigation measures are identified that could guarantee the reduction of this cumulative impact to a less-than-significant level.