

## 6.7 FISH AND WILDLIFE HABITAT

### 6.7.1 Introduction

The objectives and policies contained in this element address the need to preserve unique and important aquatic, fish and wildlife habitats, and plant communities for their biological resource and ecological values, as well as for their direct and indirect benefits to the citizens of Shasta County. The Fish and Wildlife Element incorporates requirements from the State-mandated Conservation and Open Space Elements found in Government Code Sections 65302(d) and 65560, respectively. Passages from the codes dealing with fish and wildlife resources are quoted below:

A conservation element for the conservation, development and utilization of natural resources including ...fisheries, wildlife,...and other natural resources... (Government Code Section 65302(d).

Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitats for fish and wildlife species; (and) areas required for ecologic and other scientific study purposes . . . (Government Code Section 65560(b)(1).

### 6.7.2 Findings

Viable and healthy fish and wildlife habitats and plant communities contribute significantly to aesthetic enjoyment, County-based recreation income, and scientific research. The degree to which this viability is maintained is one indicator of how well we are managing the impacts caused by our ever-growing human population. Natural habitat areas sufficient to maintain species diversity and which allow necessary corridors for seasonal species migration are also important to the preservation of ecological balances and environmental quality.

Important wildlife habitats in Shasta County include ten deer winter ranges which support migratory deer herds as well as other associated flora and fauna species; a key oak-woodland habitat in the Oak Run-Whitmore area; numerous riparian (streamside) communities; and wetland habitats associated with Big Lake, Fall River, and the Sacramento River corridor in the Sacramento Valley. The upper Sacramento River habitat corridor above Shasta Lake is another important wildlife habitat area. It has recovered from the River's near "biological sterilization" which occurred from the Southern Pacific Railroad's toxic spill into the River during July 1991. An estimated 25 animal species were subjected to significant population declines as a result of the spill.<sup>1</sup>

In 1984 the County adopted a General Plan that included three endangered and seven rare animal species known to inhabit Shasta County. At that time, endangered species in Shasta County included the Southern bald eagle, the American peregrine falcon, and the Bull trout while the seven species classified as rare included the wolverine, the Shasta salamander, the Sierra Nevada red fox, the rough sculpin, the Shasta crayfish, the greater sandhill crane, and the Swainson's hawk. One rare plant specie, *Orcuttia tenuis*, was also found in Shasta County. By 1998, Shasta County's list of endangered and threatened species lists 20 animals and 3 plant species. The Department of Fish and Game has concluded that the Bull trout, formerly listed as endangered, is now extinct in Shasta County.<sup>2</sup> Seven species are classified as endangered and another eight are classified as threatened. Table FW-1 provides a list of these species and indicates their respective status under both the State and Federal endangered species law. A brief description of the status classification system is included in Table FW-1.

There are also 13 species in the County which the Department of Fish and Game (DFG) has designated as "Species of Special Concern" (see Table FW-2). Although not listed under the Federal Endangered Species Act or the California Endangered Species Act, the species are of importance because their numbers are declining at a rate which could lead to listing in the future or they occur in historically low numbers and there are currently threats to their continued existence.

The greatest species declines during the 1980's occurred to populations of Winter-run chinook salmon and the Bank swallow. Both of these species, which are highly dependent upon the habitat quality of the Sacramento River, were not listed until after 1987.

**TABLE FW-1  
LISTED THREATENED AND ENDANGERED ANIMAL AND PLANT SPECIES**

<b>SPECIE NAME (SCIENTIFIC NAME)</b>		<b>STATUS</b>	
<b>ANIMAL SPECIES</b>	<b>GENERAL HABITAT</b>	<b>CA</b>	<b>US</b>
Sierra Nevada red fox ( <i>Vulpes vulpes necator</i> )	Subalpine and alpine	T	
Wolverine ( <i>Gulo gulo</i> )	Variable uplands	T	
Bald Eagle ( <i>Haliaeetus leucocephalus</i> )	Uplands near waterbodies	E	T
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	Most of County	E	
Swainson's hawk ( <i>Buteo Swainsoni</i> )	Most of County	T	
Greater sandhill crane ( <i>Grus Canadensis tabida</i> )	Upland wet meadows and marshes	T	
Bank swallow ( <i>Riparia riparia</i> )	Vertical banks of friable soil	T	
Shasta salamander ( <i>Hydromantes shastae</i> )	Limestone formations	T	
Winter-run chinook salmon ( <i>Onchorhynchus tshawytscha</i> )	Sacramento River	E	E
Spring-run chinook salmon ( <i>Onchorhynchus tshawytscha</i> )	Sacramento River	T	T
Fall-run chinook salmon ( <i>Onchorhynchus tshawytscha</i> )	Sacramento River		C
Late Fall-run chinook salmon ( <i>Onchorhynchus tshawytscha</i> )	Sacramento River		C

**TABLE FW-1  
LISTED THREATENED AND ENDANGERED ANIMAL AND PLANT SPECIES**

<b>SPECIE NAME (SCIENTIFIC NAME)</b>		<b>STATUS</b>	
Steelhead trout ( <i>Onchorhynchus mykiss</i> )	Sacramento River		T
Rough sculpin ( <i>Cottus asperimus</i> )	Pit River, Hat Creek, Fall River	T	
Shasta crayfish ( <i>Pacifastacus fortis</i> )	Shasta Creek, Hat Creek, Fall River	E	E
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	Northwest Shasta County		T
Valley elderberry longhorn beetle ( <i>Desmocerus californicus dimorphus</i> )	Valley foothill riparian		T
Vernal Pool Fairy Shrimp ( <i>Branchinecta lynchii</i> )	Stillwater Plains, vernal pools		T
Vernal Pool Tadpole Shrimp ( <i>Lepidurus packardi</i> )	Eastern Redding, vernal pools		T
Willow Flycatcher ( <i>Empidonac trailii</i> )	Riparian habitat	E	
Shasta Sideband Snail ( <i>Monadenia troglodytes</i> )	Limestone habitat		
<b>PLANT SPECIES</b>	<b>GENERAL HABITAT</b>	<b>CA</b>	<b>US</b>
Orcuttia tenuis (slender Orcutt grass)	Valley vernal pools	E	C
Boggs Lake hedge-hyssop ( <i>Gratiola heterosepala</i> )	Marshes and swamps (lake margins), vernal pools,/clay	E	
Greene's tuctoria ( <i>Tuctoria greenei</i> )	Vernal pools	R	E

**NOTES:** This table indicates both State (CA) and Federal (US) listed species. Federal listing is by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) under the Federal Endangered Species Act of 1973. The following status abbreviations apply to both State and Federal listings:  
**C** = Candidate: A native California species is a "candidate" when formally noticed as being under review by the Department of Fish and Game (DFG) or USFWS and NMFS to determine whether listing as a threatened or endangered species is warranted.

**T** =Threatened: A native California species is "threatened" when, although not presently threatened with extinction, it is likely to become an endangered species in the foreseeable future in absence of special protection and management efforts.

**E** = Endangered: A native California species is "endangered" when it is in serious danger of becoming extinct throughout all, or a significant portion of, its range due to one or more causes.

The California DFG has determined that the Bull trout is now extinct in Shasta County.

Source: California Department of Fish and Game, 2004

The many rivers, creeks, and lakes in Shasta County provide habitat for numerous fish species. The Fall, Pit, and McCloud Rivers support large populations of rainbow and brown trout, as do Burney, Hat, and Lava Creeks, and Baum, Crystal, and Eastman Lakes. The Sacramento River is famous for its large salmon and steelhead fisheries, plus excellent trout fisheries above and below Shasta Dam. However, these anadromous fisheries have been the subject of significantly-reduced numbers during the 1980's. The impacts on the upper Sacramento River resulting from the Southern Pacific toxic spill have already been mentioned. Other important game fish species found in Shasta County waters include black bass, crappie, blue gill, and catfish.

**TABLE FW-2  
STATE SPECIAL STATUS SPECIES OF SHASTA COUNTY - 2004**

<b>COMMON NAME</b>	<b>SPECIES NAME</b>	<b>CALIFORNIA STATUS</b>	<b>FEDERAL STATUS</b>
Bigeye marbled sculpin	<i>Cottus klamathensis marcrops</i>	Species of Special Concern	Not Listed
Black swift	<i>Cypseloides niger</i>	Species of Special Concern	Not Listed
Cascades frog	<i>Rana cascadae</i>	Species of Special Concern	Not Listed
Foothill yellow-legged frog	<i>Rana boylei</i>	Species of Special Concern	Not Listed
Hardhead	<i>Mylopharodon conocephalus</i>	Species of Special Concern	Not Listed
McCloud river redband trout	<i>Oncorhynchus mykiss ssp.2</i>	Species of Special Concern	Not Listed
Northwestern pond turtle	<i>Emys (=Clemmys) marmorata marmorata</i>	Species of Special Concern	Not Listed
Osprey	<i>Pandion haliaetus</i>	Species of Special Concern	Not Listed
Pacific fisher	<i>Martes pennanti pacifica</i>	Species of Special Concern	Not Listed
Pale big-eared bat	<i>Corynorhinus townsendii pallascens</i>	Species of Special Concern	Not Listed
Pit roach	<i>Lavinia symmetricus mitrulus</i>	Species of Special Concern	Not Listed
Tailed frog	<i>Ascaphus truei</i>	Species of Special Concern	Not Listed
Tricolored blackbird	<i>Agelaius tricolor</i>	Species of Special Concern	Not Listed

Source: Department of Fish and Game, Redding Office, 2004

### **Wildlife Resources**

There are ten deer winter ranges in Shasta County that occur in portions of all planning areas except the South Central Region (SCR) (refer to Figure FW-1).

The following critical wildlife resources are found in Shasta County. Bald eagles nest near Shasta Lake, Lake Britton, and along the Pit River. Shasta salamander inhabit limestone formations in Shasta County. The DFG has determined that the Bull trout is no longer found along reaches of the McCloud River.<sup>3</sup> Several habitat areas for the Northern Spotted Owl are identified in timbered areas in Shasta County.<sup>4</sup>

### **South Central Region (SCR)**

The most ecologically-significant community in the SCR area is the riparian woodland association found along the Sacramento River and its tributaries. This plant community provides habitat for many animals and plants. The presence of the riparian woodland association also helps prevent erosion of the Sacramento River banks. The reach of the Sacramento River in Shasta County is also an important anadromous fish spawning corridor. Many Sacramento River tributaries are also important spawning and rearing areas for anadromous fish as well as resident trout, even though some may go dry during the summer. High sustained river flows controlled by operations at Shasta and Keswick Dams, however, scour the river bottom eroding essential gravel beds and preventing effective spawning on the river bottom. Further, presence of these dams restricts the movement of gravel down river, thus severely limiting supplies to the south. Anadromous fish populations are also threatened by the removal of riparian vegetation, irrigation diversions, heavy metals from the Spring Creek area, sedimentation from erosion, and changes in water temperatures due to a variety of river uses. Further, bank protection activities, such as rock riprap designed to prevent erosion of alluvial soils, often adversely affects fish and wildlife habitats as well as the natural beauty of the waterway. The combined, or cumulative, impacts of lost habitat and habitat quality along the Sacramento River has been responsible for the endangered listing of two species, namely the Winter-run chinook salmon and bank swallow.

In general, any cause for the disruption of watercourse ecosystems will reduce the habitat diversity of the surrounding region. Cumulative impacts of urbanization can have serious adverse impacts on water resources not only of Shasta County but of the entire Sacramento River basin as well. If properly understood and managed, however, it may be possible to provide ample water supplies, protect water quality and fish and wildlife habitat, and still meet the needs of a growing population in the County.

### **Northeast Shasta County**

The DFG has expressed concern regarding problems confronting the Day Bench deer herd. Based on a two-year study completed in 1989 of deer movement, migration corridors, fall and spring holding areas, summer ranges, and seasonal habitat requirements, the DFG has developed land use recommendations for each of the three counties (Shasta, Lassen, Modoc) which support this large herd.

Since the Day Bench area of the Northeast Shasta Planning Area has experienced a great number of land divisions, the DFG has recommended that no further divisions take place. According to DFG officials, the few remaining large parcels are extremely valuable to deer as they shield deer populations/habitat from the potentially negative impacts of human disturbance.

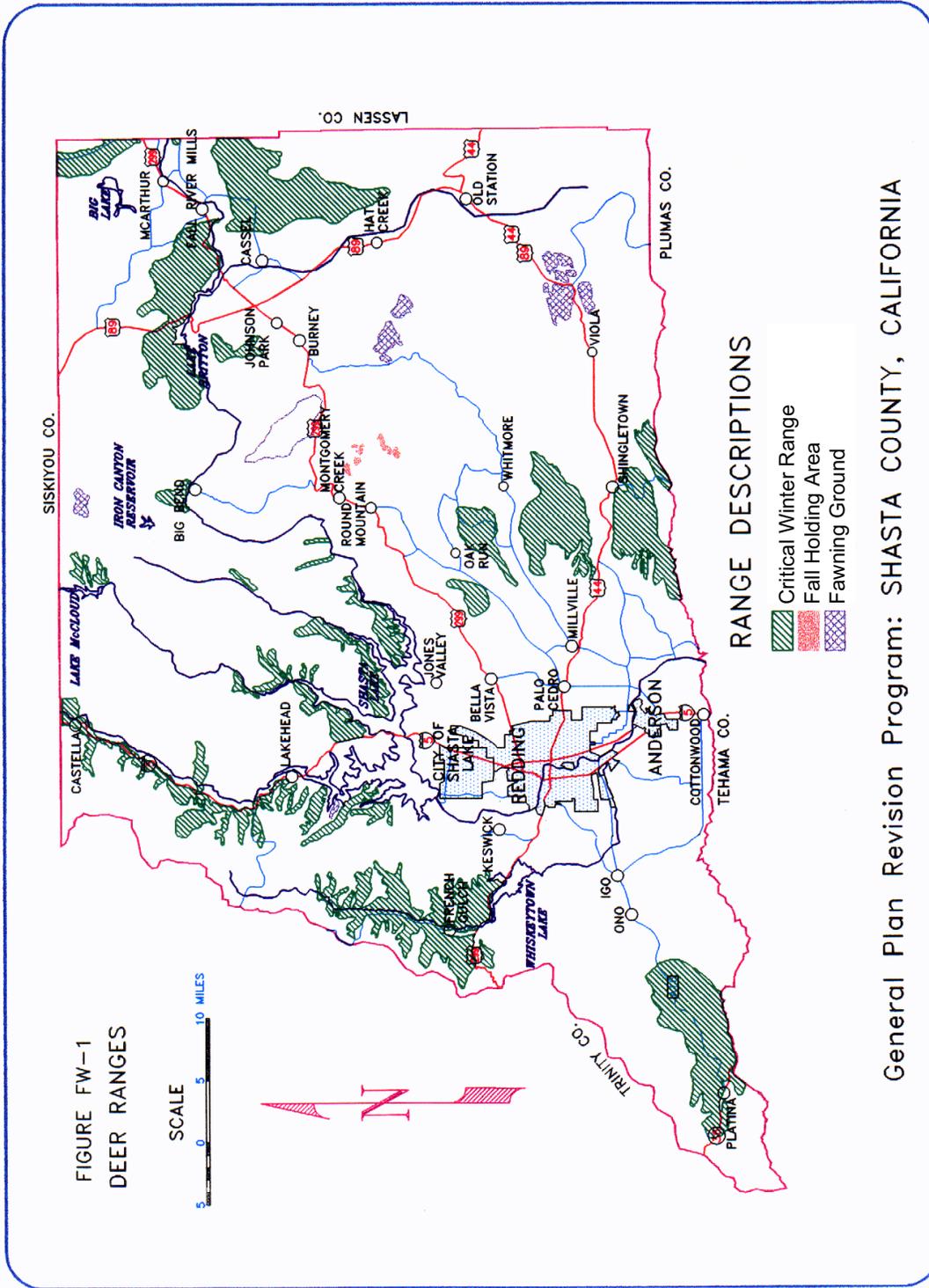
The General Plan designates the Day Bench area as NH-RB-C, which is Natural Resource Protection-Habitat, combined with a Rural Residential B and the Clustering designation. This designation identifies the critical habitat but permits a rural residential density of one dwelling per five acres as long as the proposal is clustered to protect the habitat. While this designation is expected to have some negative impacts on deer migratory patterns and/or habitat quality, these impacts can be reduced by design measures addressing the size and location of lots created by subdivisions, the siting of structures on lots, and the size and placement of fencing and other barriers.

Design measures appropriate to development and subdivision proposals are best determined on a case-by-case basis in which the project proponent works closely with the Department of Fish and Game. Particular attention should be given to the clustering of dwelling units on small lots so that large lots may be created and kept undeveloped for habitat purposes.

The Fall River-Big Lake Wetlands supports numerous springs which eventually give rise to Big Lake, Tule River, and Little Tule River, all of which converge to form Fall River. These waterways are lined with riparian vegetation intermixed with meadows and lowland marshes, creating an excellent fish and wildlife habitat. The Fall River Valley itself is Shasta County's most important waterfowl nesting area, providing habitat for over 400 pair of ducks and 135 pair of Canadian Geese annually. Approximately 88 bird species and 67 mammalian species have been identified in this region, and the Fall River itself has been rated as one of the best trout rivers in California, primarily due to exceptional water quality conditions.

A wide variety of angling opportunities are available in the Northeast Shasta Planning Area with warm water species in Lake Britton, specially managed wild trout fisheries in the Pit River below Lake Britton and in lower Hat Creek, hatchery trout fisheries in middle and upper Hat Creek, and remote lake fisheries in the Thousand Lakes Wilderness Area, to name a few.

The Northeast Shasta Planning Area also supports populations of the Southern bald eagle and the American osprey. The osprey has been federally designated as a sensitive specie, yet this bird has not been listed as either endangered or threatened in California. A large concentration of osprey nests are located in the northeast region of the planning area surrounding Ahjumawi Lava Springs State Park. Wolverines have also been sighted in the vicinity of Pit River woodland and in the southwest corner of the planning area.



## **Resource Protection Strategies**

There are a number of emerging and new concerns for Shasta County's biological resources that must be faced as it moves into the twenty-first century. It will be important for the County to properly identify these concerns and their issues so that appropriate strategies are developed for protection of the affected resources. The following section provides background information and a discussion of key issues.

### **1. Fisheries and Riparian Habitat Management for the Sacramento River**

In early 1989 the California Resources Agency published a major report on the status and planning needs for anadromous fisheries and riparian habitat on the Sacramento River south of Keswick Dam to the Feather River.<sup>5</sup> The main focus of the report was how to reverse declines of chinook salmon and steelhead trout populations. This report included management recommendations for a number of Shasta County waterways, including the Sacramento River; Battle, Clear, and Cottonwood Creeks; as well as diversion methods by the Anderson-Cottonwood Irrigation District (ACID).

The Federal Central Valley Project Improvement Act (PL 102575) was enacted in 1992 and provides for restructuring of the water project to increasingly account for fish and wildlife habitat in the Sacramento River below Shasta Lake. A number of habitat improvement programs in the river and its tributaries are to be financed by the Act which parallel the Upper Sacramento River Fisheries and Riparian Habitat Management Plan.

### **2. Protection of Waterway Corridors**

Concern for the protection of riparian habitat along important waterway corridors has increased in the SCR vicinity as rapid growth continued in the planning area. In 1990, the Department of Fish and Game and the County, along with the cities, began an interagency effort to identify and map riparian resources of key waterways needing protection in lowland Shasta County. This effort became known as the "Stream Corridor Protection Program." In 1994, the Department of Fish and Game prepared and distributed copies of stream maps and protection recommendations for use by local agencies when establishing specific protective measures as described in policy FW-d. These measures have proved useful in recommending development conditions for projects in or near sensitive waterway corridors.

### **3. Protection of Wetland Resources**

Wetlands contain high-value wildlife habitat and their protection in Shasta County is of growing importance as the area's population expands. Major areas of important wetland resource include east and south of the Redding and Anderson areas in the SCR planning area and in the Fall River Valley. The Department of Fish and Game began a mapping and identification program of seasonal wetlands, otherwise called vernal pools, located in the eastern Redding planning area during 1992. Both the County and the City of Redding are participating with State and Federal agencies to better identify the vernal pools in the SCR area with the intent of developing an area-wide mitigation program in the future. As a result of this ongoing effort, three significant vernal pool complexes have been identified: Stillwater Plains, Millville Plains, and Swede Creek Plains.

In order to be consistent with the practices of the United States Fish and Wildlife Service and the Department of Fish and Game, it is recommended that the following definition of "Wetlands" be used:

“Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes:

1. At least periodically, the land supports predominantly hydrophytes (i.e., plants adapted to survival in the extreme conditions of a wetland environment);
2. The substrate is predominately undrained hydric soil;
3. The substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

The lower limit of a wetland is established at a depth of two meters (6.6 feet) below water; however, if emergents, shrubs, or trees grow beyond this depth at any time, then the deepwater edge of such vegetation is the boundary. Any one or more of these characteristics will categorize the area to be evaluated as a wetland.<sup>6</sup>

The Department of Fish and Game has a no-net loss policy and has established recommendations for their protection. The County, from time to time, consults with the Department of Fish and Game whenever development projects present wetlands issues and utilizes these recommendations to assure protection of wetland areas. Federal standards for protection (setbacks or buffer zones) have also been developed to protect against impacts. Where habitat for federally-listed crustacean is present, the U.S. Fish and Wildlife Service considers project activities within 250 feet of potential or known habitat for these specific as having a potential indirect effect on the species. If a project includes plans to place fill material into a wetland, permits are required from the U.S. Army Corps of Engineers and the California Central Valley Regional Water Quality Control Board. When unavailable losses of wetland habitat are permitted, State and Federal agencies have worked together in developing mitigation banks where purchase of “wetland credits” may offset the losses.<sup>7</sup>

#### 4. Protection of Oak Woodlands from Large-Scale Firewood Cutting and Other Clearing

As population pressures have increased in the region, so has the rate and extent of the loss of oak woodlands in the County. These woodlands provide important food and shelter to many valley and upland animal species. Both large-scale commercial firewood cutting and land development have contributed to losses of these woodlands. Concerns over these losses have led to discussion of the need for regulating tree cutting in rural residential and non-timber resource lands and how not to repeat the same mistakes of hardwood overcutting that has occurred in certain areas of the Sierra Nevada and Coast Range foothills to the south of Shasta County.

In 1995, the County, in cooperation with the Department of Fish and Game, formulated a set of voluntary guidelines regarding firewood cutting. These guidelines provide suggestions for developers on how to minimize impacts to oaks in development project, when harvesting firewood and removing trees as a component of range management.

#### 5. Development of a Clear Creek Parkway and Habitat Corridor

Clear Creek from Whiskeytown Dam downstream to its confluence with the Sacramento River provides a number of unique opportunities for parkway development and fisheries habitat restoration. Because of controlled water releases from Whiskeytown Dam, proper management of this resource could provide an important anadromous fishery resource. If the Bureau of Reclamation were to provide flow regimes that allow cold water flows all year, a significant Spring-run chinook salmon fishery could be developed.<sup>8</sup> However, any effort to restore or enhance a Clear Creek fishery will have to occur in concert with efforts to reduce sedimentation and its potential in the lower watershed, particularly in areas of decomposed granite. Studies for water flow and habitat improvements are being conducted by State agencies.<sup>9</sup> Also, Clear Creek provides one of the few areas within the SCR urbanized area where parkway development remains attractive and feasible. The Bureau of Land Management's Resource Plan for its Redding district provides support for such integrated resource planning for Clear Creek.<sup>10</sup>

## 6. Avoiding Fragmentation and Isolation of Habitats

Studies of wildlife movement have traditionally focused on long-distance travelers, such as migratory birds and fish. However, biologists are accumulating evidence which suggests that much of our remaining wildlife population is being trapped within what amounts to a collection of habitat islands, cut off from migration routes and historic range patterns by roads, fences, dams, buildings, agricultural fields, clear-cut, and other human activities. Recognition of this "island" effect is one of the principles used to define areas for migratory deer herds in the General Plan. Avoidance of habitat fragmentation and isolation needs to be recognized and expanded to include other habitat planning efforts, as well.

Another important feature of streams and their associated riparian habitat is that unbroken riparian corridors provide required travel ways for wildlife. Protection of these areas will reduce habitat fragmentation and the isolation of wildlife populations.

## 7. Restoration of Middle Creek and Other Watershed Improvement Efforts

Middle Creek is an important seasonal tributary to the Sacramento River just upstream from the City of Redding and below Keswick Dam. However, the Middle Creek drainage basin, which contains a large area with very steep slopes and decomposed granite soils, has been subject to much increased development pressure since the mid- to later-1980's. As a result of poor erosion control practices during and after development, Middle Creek has been subjected to large volumes of sedimentation which have greatly reduced this stream's importance as a key spawning stream for Sacramento River trout. Sediment from Middle Creek is now threatening the Sacramento River, itself, and, although efforts have been made to contain some of the sedimentation, much greater effort will be needed in restoring this basin and the Middle Creek fishery.

Efforts to improve watersheds have resulted in the formation of Coordinated Resource Management and Planning Groups (CRMPs). The CRMPs identify problems and develop management processes to address a variety of concerns within various watersheds. These groups consist of voluntary members which include private property owners and a variety of public resource managers. The first CRMP addressed concerns in the Middle Creek watershed. Subsequently, a CRMP was formed to address concerns in the Clear Creek watershed. The Clear Creek CRMP is grant funded from the Salmon Initiative and the Central Valley Improvement Act.

Additional CRMPs have been formed by groups concerned about Battle Creek, the McCloud River, and Sulfur Creek. In addition, a number of watershed groups have been formed to address issues within other watersheds including Cottonwood Creek, Bear Creek and Cow Creek.<sup>11</sup>

The Sacramento River from the south Redding City limits to the Tehama County line is experiencing development pressure and impacts from human activities. A river corridor protection program similar to a CRMP could set up guidelines to maintain and enhance water quality, riparian and wildlife habitat, as well as to maintain its economic and County lifestyle significance.

Additional resource protection can be provided through the purchase of valuable habitat through fee title ownership or the purchase of development rights through conservation easements.

## 8. Rivers and Streams with Wild and Scenic River Characteristics

The Bureau of Land Management has identified a number of Shasta County rivers and streams that possess the characteristics required for Federal wild and scenic rivers.<sup>12</sup> Although these waterways were identified because of their relationship to BLM lands, acknowledgment of their habitat values is important to the Fish and Wildlife Element. These identified waterways include the following reaches:

- Battle Creek: Ponderosa Way Bridge to mouth.
- Beegum Creek: Source to confluence of Middle Fork Cottonwood Creek.
- Clear Creek: Whiskeytown Dam to Clear Creek Road Bridge.
- North Fork Cottonwood Creek: From Platina Road crossing upstream for ten miles.
- Middle Fork Cottonwood Creek: National Forest boundary downstream to Platina Road crossing near Hundred Dollar Gulch.
- Sacramento River: Balls Ferry Bridge downstream to Seven Mile Creek in Tehama County.

The Shasta-Trinity National Forest Resource Management Plan also identifies several Shasta County streams as containing wild and scenic characteristics, including the Upper and Lower McCloud River and the Upper Sacramento River.<sup>13</sup> Land use controls within critical wildlife habitat areas are designed to be no more restrictive than necessary to protect the resource.

In all areas designated on the land use maps as Natural Resource Protection-Habitat (N-H), except portions of the Day Bench area, the maximum residential density is indicated on the map. However, if a proponent chooses to cluster development and incorporate other habitat protection features, he may be able to double the density. For example, a developer with 200 acres located in an area designated for one dwelling per 40 acres would be able to create 5 parcels if he chooses not to cluster. If he clusters and provides other mitigations that reduce the impacts created by the additional density to the same level of impacts created by the 40-acre parcels, he may double his density up to 10 dwellings.

In the portions within the Day Bench area designated N-H-RB-C, a residential density of one dwelling unit per five acres is permitted provided that the development is clustered and it incorporates design features that protect the habitat.

### **6.7.3 Objectives**

- FW-1 Protection of significant fish, wildlife and vegetation resources.
- FW-2 Provide for a balance between wildlife habitat protection and enhancement and the need to manage and use agricultural, mineral extraction, and timber land resources.

### **6.7.4 Policies**

- FW-a Significant wildlife habitat resources, as discussed in the Plan text, when not otherwise classified as Timberland (T), Cropland (A-C), or Grazing (A-G) shall be classified on the General Plan maps as Natural Resources Protection-Habitat (N-H).

In all areas designated N-H, except the Day Bench area, residential units may be permitted at a density of one dwelling unit per the acreage indicated on the land use map. If a project proponent agrees to cluster residential units, up to a 100 percent density bonus may be permitted if the parcels are clustered to the degree necessary to reduce the negative impacts on wildlife habitat to a level that does not exceed the level that would be created by the non-clustering option discussed above. When the clustering option is utilized, the clustered parcels shall be sited to reduce the impacts on critical habitat elements such as wildlife watering sites, mineral springs, key thermal cover areas, roost sites, and nest concentrations. The balance of the land shall remain in open space. Modifications to the open space areas shall only be allowed for habitat enhancement and forest management.

In the Day Bench area, designated NH-RB-C, the wildlife habitat is the primary designation, but the RB combining designation also recognizes that rural residential development may be permitted at a maximum density of one dwelling per five acres, as long as the residences are clustered. The Clustering (C) designation requires clustering. The residential clustering, along with other habitat protection criteria, is required to the degree necessary to mitigate the impacts that development may have on the habitat to below a level of significance. Recreation uses may also be conditionally permitted when identified significant adverse impacts on the habitat resource are mitigated.

FW-b Recognition that classification of some fish, wildlife, and vegetation resources designated and used as Timberlands, Mineral Resource, Croplands, or Grazing lands does, in most cases, protect habitat resources. However, if there is a conflict, the timber, mineral extraction, or agricultural land use classifications mentioned above shall prevail in a manner consistent with State and Federal laws.

FW-c Projects that contain or may impact endangered and/or threatened plant or animal species, as officially designated by the California Fish and Game Commission and/or the U. S. Fish and Wildlife Service, shall be designed or conditioned to avoid any net adverse project impacts on those species.

FW-d The significant river and creekside corridors of Shasta County shall be designated on the General Plan maps. The primary purpose of this designation is to protect the riparian habitats from development and from adverse impacts from conflicting resources uses. The purpose is also to encourage open space and recreation (policy OSR-e). Mapping of significant waterway corridors in areas designated as resource protection lands is not required since it is assumed that resource land uses will also act to protect such waterway corridors. Riparian habitat protection along the significant river and creekside corridors, as designated on the plan maps shall be achieved, where appropriate, by the following measures:

- regulation of vegetation removal.
- design of grading and road construction to restrict sediment input to all streams.
- establishment of a development set-back.
- the siting of structures, including clustering.
- recreation plans for the Sacramento River, Clear Creek, and other feasible waterway resources.

FW-e Salmon spawning gravel in the following rivers and creeks shall be protected:

**Sacramento River:** Keswick Dam to Shasta-Tehama County line.

**Battle Creek:** Mouth to the mouth of South Fork Battle Creek.

**Cow Creek:** Mouth to: Powerhouse on South Cow Creek; the mouth of Coal Gulch on Old Cow Creek; the mouth of Dry Clover Creek on Clover Creek; the mouth of Tracy Creek on Oak Run Creek; the mouth of Salt Creek on Little Cow Creek.

**Cottonwood Creek:** Mouth to west line of Section 6, T.29N., R.5W., M.D.B.& M.

**Bear Creek:** Mouth to the Highway 44 bridge.

**Clear Creek:** Mouth to Whiskeytown Dam.

**Churn Creek:** Mouth to Redding City limits.

**Stillwater Creek:** Mouth to the Highway 299E bridge.  
**Olney Creek:** Mouth to mouth of Tadpole Creek.  
**Anderson Creek:** Mouth to Interstate 5.

- FW-f The County should encourage and support efforts by State and Federal agencies that implement the Upper Sacramento River Fisheries and Riparian Habitat Management Plan.
- FW-g The County shall encourage the Department of Fish and Game to prepare periodic biological assessments regarding the overall effectiveness of waterway protection efforts under the Stream Corridor Protection Program.
- FW-h The County shall encourage efforts to develop tree protection standards which focus on the County's differing land use types, namely; lowland urban, upland urban, rural residential and resource lands. Urban tree protection standards shall focus on landscaping that promotes energy conservation and design aesthetics, as opposed to preserving native vegetation.
- FW-i An interagency plan should be encouraged for developing a parkway and wildlife habitat corridor along Clear Creek. The County should support and encourage planning and non-County funding sources which implement this parkway corridor.
- FW-j Efforts to restore the Middle Creek drainage basin, Clear Creek watershed basin, Battle Creek, Cow Creek, and other Sacramento River tributary watersheds shall be supported by the County.
- FW-k The County should support efforts to develop a Stream Corridor Protection Plan along the Sacramento River from the south Redding City limits to the Tehama County line.

Footnotes:

1. Personal communication with Gary Stacey, Department of Fish and Game, 9-20-91; Also see Natural Resource Damage Assessment Plan, Sacramento River: Cantara Spill, Shasta and Siskiyou Counties, Draft, California Department of Fish and Game, October 1991.
2. Personal communication with Tom Stone, Department of Fish and Game, January 13, 1998.
3. Ibid, pg.2.
4. Northern Spotted Owl Draft Environmental Impact Statement (California), Spotted Owl Habitat Areas, United States Forest Service, 1991
5. Upper Sacramento River Fisheries and Riparian Habitat Management Plan, State Resources Agency, January, 1989 (Prepared pursuant SB 1086 - Nielsen)
6. Wetlands, Part I, Department of Fish and Game, 1994, pg. 3.
7. Letter from Donald Koch, Department of Fish and Game, Redding, CA, May, 2004, pg. 3.
8. Redding Resource Management Plan, Bureau of Land Management, 1991, pg. 3-64.
9. Redding Resource Management Plan, Bureau of Land Management, March, 1991, Appendix A
10. Draft Forest Land and Resource Management Plan, Shasta-Trinity National Forest, February, 1990, page 2-8.
11. Letter from Donald Koch, Department of Fish and Game, Redding, CA, May, 2004, pg. 4.
12. Redding Resource Management Plan, Bureau of Land Management, 1991, pg. 3-64.
13. Redding Resource Management Plan, Bureau of Land Management, March, 1991, Appendix A