

# AGENDA

**Stakeholder Committee Meeting  
Butte Regional HCP/NCCP  
Wednesday, August 13, 2008  
11:00am- 3:00pm  
BCAG Conference Room**

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## **Agenda Items:**

1. Introductions
2. Butte County General Plan - Board of Supervisors Preferred Land Use Alternative
3. Update on Other General Plan Processes
4. Conservation Measures for Basin CAZ's and Giant Garter Snake (Attachment #1)
5. Existing protected land categories – update on private easements
6. Spatial requirements of covered species and planning species (Attachments #2a-c)
7. Revised Biological Goals and Objectives (Attachment #3)
8. Meeting Notes from June 4, 2008 (Attachment #4)
9. Action Items and Next Meetings

## DRAFT Conservation Measures for Basin CAZs and Giant Garter Snake

*This handout presents a draft of conservation measures nested at three ecological scales (i.e., landscape-, natural community-, and species-levels) for the giant garter snake. Occurrences of the giant garter snake and distribution of its habitats are primarily located within the Sacramento River, Northern Rice, and Southern Rice CAZs (Basin CAZs). In addition to presenting draft conservation measures for the giant garter snake, this handout is intended to demonstrate the proposed structure for conservation measures and their relationships at the three ecological levels. The format proposed here would be applied to each of the remaining covered species.*

*Landscape conservation measures will be applied on a geographically broad scale (i.e., Planning Area-wide) to achieve multiple goals and objectives. These measures relate to overall design and assembly of the preserve system and are structured to benefit all natural communities and covered species, as well as to foster the conservation of biodiversity. Landscape-level measures address such parameters as preserve location, size, shape, composition, and connectivity; and ecological processes. These landscape-level measures are determined by the spatial needs of vegetation communities and associated species and management activities necessary to maintain a well-functioning preserve system.*

*Community-level measures apply to applicable natural and agricultural communities and include such parameters as vegetation management, habitat restoration, and enhancement of ecosystem function. Giant garter snake goals and objectives are expected to be met primarily through the implementation of community-level conservation measures. These community-level measures are determined by the habitat needs of giant garter snake and by actions required to conserve vegetation communities. Measures at this level conserve giant garter snake indirectly through conservation of its habitat.*

*Species-level conservation measures for giant garter snake are directed at compensating impacts of covered activities on giant garter snake habitat. Avoidance and minimization measures proposed for the giant garter snake are described following the description of species-level conservation measures. Monitoring for the effectiveness of conservation measures for conserving covered species will be described in the monitoring chapter of the Butte Regional HCP/NCCP document.*

## Landscape-level Conservation Measures

### Landscape-Level Goals and Objectives

**Goal LAND1:** Preserve and protect large landscapes with the range of physical and biological attributes necessary to sustain covered species abundance and habitat, to preserve native biodiversity, and to provide a sufficient range of conditions to accommodate future anticipated shifts in distributions of covered species and natural communities with climate change.

**Objective LAND1.1:** Establish a preserve system of protected lands in the Planning Area that brings protected status to an additional extent of covered natural communities at the identified minimum patch size:

Natural Community	Extent to Protect (acres)	Minimum Patch Size (acres)
Oak woodland		300 <sup>1</sup>
Oak Savanna		300 <sup>2</sup>
Grassland		400 <sup>3</sup>
Swale complex and vernal pools		400 <sup>4</sup>
Riparian forest and scrub		25
Riparian scrub		10
Agricultural land (irrigated crop and pasture)		160
Agricultural land (rice)		160
Emergent wetlands		No minimum.
Aquatic		

<sup>1</sup>Comprised of oak woodland or combined oak woodland and oak savanna patches.  
<sup>2</sup>Comprised of oak savanna or combined oak savanna and oak woodland patches.  
<sup>3</sup>Comprised of grassland or combined grassland and swale complex and vernal pools.  
<sup>4</sup>Comprised of swale complex and vernal pools or combined swale complex and vernal pools and grassland.

**Objective LAND1.2:** Protect \_\_ acres of suitable sites to provide for the potential future upslope migration of oak woodland and savanna communities in response to climate change.

**Goal LAND2:** Preserve continuous corridors of habitat along the east-west elevation gradient extending from the eastern boundary of the Planning Area to the major stream corridors in the valley bottom and along north-south corridor within the valley basin habitats.

**Objective LAND2.1:** In the Planning Area north of the City of Chico, protect a contiguous habitat corridor at least XXX feet wide along the east-west elevation

gradient between the foothills at the eastern boundary of the Planning Area and the Sacramento River at the western boundary of the Planning Area (across the Northern Cascade CAZ and Northern Orchard CAZ).

**Objective LAND2.2:** In the Planning Area south of the City of Chico and north of the City of Oroville, protect a contiguous habitat corridor at least XXX feet wide along the east-west elevation gradient between the foothills at the eastern boundary of the Planning Area and Butte Creek at the western boundary of the Planning Area (across the Southern Cascade CAZ and Northern Rice CAZ).

**Objective LAND2.3:** In the Planning Area south of the City of Oroville, protect a contiguous habitat corridor at least XXX feet wide along the east-west elevation gradient between the foothills at the eastern boundary of the Planning Area and the Feather River (across the Southern Sierra CAZ and eastern part of the Southern Orchard CAZ).

**Objective LAND2.4:** Protect a contiguous habitat corridor suitable for Giant Garter Snake movement at least XXX feet wide along the north-south gradient between the Llano Seco Unit of the Upper Butte Basin Wildlife Area (in the Sacramento River CAZ), across the Northern Rice CAZ, to the Little Dry Creek Unit of the Upper Butte Basin Wildlife Area, and to Gray Lodge Wildlife Area (in the Southern Rice CAZ).

**Goal LAND3:** Maintain and enhance connectivity among preserves to provide for the movement of native organisms among habitat areas and to facilitate genetic exchange among populations.

**Objective LAND3.1:** Protect corridors of habitat that provide linkages among preserved habitat areas within and adjacent to the Planning Area.

**Objective LAND3.2:** Improve habitat corridors that allow covered species and other native species to move into preserved habitats from adjacent lands and among habitat areas within preserved lands.

**Objective LAND3.3:** Maintain or improve upstream and downstream passage for covered and other native fish in Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Lindo channel, Little Chico Creek, Butte Creek, Little Dry Creek, and Feather River.

**Goal LAND4:** Maintain and rehabilitate ecosystem processes that support covered species and their habitats.

**Objective LAND4.1:** Protect watersheds and subwatersheds to the greatest extent possible to protect the quantity and quality of runoff to streams and wetlands.

**Objective LAND4.2:** Support implementation of water quality improvement programs that serve to reduce the loads of toxic contaminants into waters that support covered plants, amphibians, and fish and foodweb processes.

**Objective LAND4.3:** Restore floodplain processes along rivers and streams.

## **Conservation Measures**

To come.

## **Natural Community-level Conservation Measures**

*Note: additional conservation measures will be added to the natural communities below that support giant garter snake for other covered species that use the same natural communities. Conservation measures will also be added as appropriate for other natural communities that do not support giant garter snake to address the needs of other covered species.*

### **Agricultural Lands**

#### **Goals and Objectives**

**Goal AGLA1:** Maintain agricultural land cover types that support habitat for covered species and other wildlife, including migratory waterfowl, shorebirds, other waterbirds, and raptors.

**Objective AGLA1.1:** Annually maintain at least \_\_\_ acres of land in rice production distributed within the Planning Area as indicated in Table 5.

**Objective AGLA1.2:** Annually maintain at least \_\_\_ acres of irrigated pasture distributed within the Planning Area as indicated in Table 5.

**Objective AGLA1.3:** Annually maintain at least \_\_\_ acres of irrigated hayfields and corn/grain crops distributed within the Planning Area as indicated in Table 5.

**Objective AGLA1.4:** Implement farming practices on conserved agricultural lands to increase their value as habitat for covered species (e.g., temporary fallowing; plant tree borders or other hedge rows along field borders and roadsides, etc).

**Table 5. Annual Agricultural Land Objectives by CAZ and UPA (acres)**

CAZ/UPA	Rice Land	Irrigated Pasture	Irrigated Hayfields and Corn/Grain Crops
Northern Orchards CAZ			
Northern Cascade CAZ			
Southern Cascade CAZ			
Sacramento River CAZ			
Northern Rice CAZ			
Northern Sierra CAZ			
Thermalito CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards CAZ			
Gridley-Biggs UPA			
Southern Rice CAZ			

## Conservation Measures

The Planning Area is dominated by agricultural land use practices with irrigated agriculture accounting for 250,434 acres or 44% of the total Planning Area. Non-irrigated rangeland is addressed under conservation measures for the grassland natural community. Rice and orchards (mostly almonds and walnuts) dominate the irrigated agricultural land use. Orchards and vineyards do not provide important habitat for any of the covered species or for wildlife in general and are not a focus of the conservation strategy. In contrast, rice lands provide habitat for an array of wildlife, including several covered species. A key component of the conservation strategy is to provide incentives to growers/landowners to maintain a substantial portion of the Butte Basin agricultural lands in continued use for rice growing.

Preservation of the working landscape of rice in the Basin CAZs is a focus of the conservation strategy particularly for conservation of giant garter snake, bald eagle, American peregrine falcon, greater sandhill crane, and tricolored blackbird.

Preservation of the working landscape of non-rice/orchards/vineyards irrigated crops (e.g., hay, row, grain crops) is a focus of the conservation strategy for Swainson's hawk, greater sandhill crane, giant garter snake, white-tailed kite, and western burrowing owl.

**AGLA CM1: Establish a Rice Lands Preservation Program.** The Implementing Entity will establish, fund, and operate a Rice Lands Preservation Program. The goal of the Program will be to ensure that specified amounts of land are in rice production in any given year that support habitat for giant garter snake, bald eagle, American peregrine falcon, greater sandhill crane, and tricolored blackbird. Rice land would be preserved within the following CAZs: Southern Rice, Northern Rice, Sacramento River, Northern Orchards, Southern Orchards, Southern Sierra, Thermalito, and Southern Cascade. Minimum requirements for rice land preservation in each of these CAZs are provided in Table 5. Under the Program, the Implementing Entity will monitor planned rice

production each year. Should monitoring indicate that rice lands might fall below the target for any given CAZ, the Implementing Entity would use funds to provide economic incentives to meet land use targets. For example, the Implementing Entity may enter into annual contracts with growers considering switching to another crop and pay the difference in anticipated crop value if the grower keeps the field in rice production. If sufficient conservation easements (in-perpetuity) and fee title protection of rice lands and other lands suitable for giant garter snake within a given CAZ meet the target for that CAZ, then this Program would no longer be necessary for the CAZ.

Rice lands are primarily under private ownership and are expected to remain in rice production for at least the foreseeable future. While acquisition of preserves will establish core conservation areas that may be enhanced as giant garter snake habitat, maintaining a large proportion of the surrounding rice-growing landscape is essential in providing sufficient habitat to sustain populations. Under the Rice Lands Preservation Program, the Implementing Entity will work directly with the farming community to provide economic incentives, if needed, to ensure that sufficient rice production is occurring within the conservation area each year.

**AGLA CM2: Enter into In-Perpetuity Conservation Easements for Rice Lands.**

The Implementing Entity would purchase in-perpetuity conservation easements with willing landowners to maintain their lands in rice production, including associated water conveyance and drainage infrastructure, to provide habitat for covered species. The minimum contiguous extent of rice land brought under easement with one or more landowners (or contiguous with existing preserves) must be at least 320 acres. Conservation easements should specify the range of rice farming and other land management practices (e.g., canal/drain maintenance activities) permitted on easement lands. The easement would allow only for changes in land use that resulted in restoration of a mosaic of open water, wetland, and upland habitat suitable for giant garter snake.

Implementation of this measure will provide for the establishment of core preserves that will be maintained and enhanced as needed for the benefit of giant garter snake and other associated covered species in perpetuity. This network of protected lands will provide the land-base framework through which other related conservation measures will be based.

**AGLA CM3: Enter into Short-Term Conservation Easements for Rice Lands.**

The Implementing Entity would purchase conservation easements for terms of not less than 5 years with willing landowners to maintain their land in rice production, including associated water conveyance and drainage infrastructure, to provide habitat for covered species. The minimum contiguous extent of rice land brought under easement with one or more landowners (or contiguous with existing preserves) must be at least 320 acres. Conservation easements should specify the range of rice farming and other land management practices (e.g., canal/drain maintenance activities) permitted on easement lands over the term of easements.

Implementation of this measure will provide the second tier of core preserve management. These areas would be protected over the shorter term, but allow for flexibility in the distributional pattern of protected giant garter snake habitat within the conservation area over time.

**AGLA CM4: Enter into In-Perpetuity Conservation Easements for non-rice/orchard/vineyard irrigated crops.** The Implementing Entity would purchase in – perpetuity conservation easements with willing landowners to maintain their lands in hay, grain, or row crops to provide habitat for covered species. The minimum contiguous extent of irrigated cropland brought under easement with one or more landowners (or contiguous with existing preserves) must be at least 300 acres. Conservation easements should specify the range of crop types permitted on easement lands as well as restrictions on pesticide use and other land management practices. The easement will also specify the requirement for and timing of a land management plan.

**AGLA CM5: Coordinate with State and Federal Agencies to Ensure Appropriate Agricultural Land Use Management on Protected Lands.** A total of \_\_\_ acres of non-rice irrigated cropland are protected on state and federal refuges. The Implementing Entity would coordinate with the applicable state or federal wildlife agencies to assess land use practices and ensure that goals and objectives are compatible and oriented toward managing the land for covered species.

Overall, 87.6 percent of this agricultural type is currently protected under state or federal ownership or through existing conservation easements with private landowners. To meet Objective GGSN2, these protected lands should be maintained in cover types suitable for giant garter snake upland aestivation and movement habitat. The Implementing Entity should coordinate with the applicable state and federal agencies to review land use practices and compatibility with existing goals and objectives for wildlife conservation.

## **Wetland Communities**

### **Goals and Objectives**

**Goal WETL1:** Maintain and enhance functional wetland communities to benefit covered species and biodiversity. [*Note: Goals and objectives for vernal pools and swale complexes are provided in the goals and objectives for grassland communities.*]

**Objective WETL1.1:** Protect \_\_\_ acres of existing unprotected emergent wetlands distributed within the Planning Area as indicated in Table 4.

**Objective WETL1.2:** Protect seeps and emergent wetlands by protecting \_\_\_ acres of unprotected grassland, oak savanna and oak woodland communities that support seeps and small patches of emergent wetland.

**Objective WETL1.3:** Maintain \_\_ acres of existing managed wetlands as wetlands distributed within the Planning Area as indicated in Table 4.

**Objective WETL1.4:** Enhance \_\_ acres of emergent wetland distributed within the Planning Area as indicated in Table 4.

**Objective WETL1.6:** Restore \_\_ acres of high quality emergent wetland for every acre of emergent wetland removed as a result of implementing covered activities.

**Objective WETL1.7:** Restore \_\_ acres of high quality seasonal or perennial wetland distributed for every acre of managed wetland removed as a result of implementing covered activities (i.e., a X:1 compensation ratio).

## **Conservation Measures**

A total of 31,996 acres of emergent wetland and managed wetland are present in the Planning Area, representing 5.7 percent of all natural communities present in the Planning Area.

The strategy for preservation of wetlands is aimed at meeting the conservation needs of the western spadefoot toad, northwestern pond turtle, giant garter snake, bald eagle, American peregrine falcon, greater sandhill crane, and tricolored blackbird.

**WETL CM1: Purchase in-fee or Enter into Conservation Easements for Wetland Habitats.** The Implementing Entity would purchase in-fee or in-perpetuity conservation easements with willing landowners to protect wetland communities, including emergent marsh, managed wetlands, and willow scrub wetlands. The minimum contiguous extent of wetland habitat purchased or brought under conservation easement with one or more landowners (or contiguous with existing preserves) is 10 acres. Acquisitions or conservation easements must include the necessary water rights to maintain wetland habitats and specify management practices designed to maintain or restore wetlands.

Although limited in extent, there are unprotected wetland habitats within the giant garter snake conservation area. Some of these are dispersed throughout the rice-growing region. These habitats represent high value breeding, foraging, and cover habitat for giant garter snakes and provide important wetland refugia in areas where these habitats are limited. Conservation easements to protect, enhance, and restore wetland habitats distributed throughout the conservation area would provide an important core network of wetlands interspersed within the rice-growing region and would help to expand giant garter snake distribution within the conservation area.

**WETL CM2: Enter into Conservation Easements with Water and Irrigation Districts to Preserve and Enhance Wetland Habitats along Canals.** The

Implementing Entity would purchase in-perpetuity conservation easements from local water and irrigation districts that own and operate water conveyance facilities to allow for and maintain emergent wetland habitats along the periphery of permanent water conveyance canals. The easement would specify the extent to which wetland vegetation can persist along canals while not interrupting water conveyance requirements.

The network of canals and irrigation channels throughout the rice-growing region of the Butte Basin comprises the primary breeding, cover, and dispersal habitat for giant garter snakes in that area. Permanent water flows and emergent wetland vegetation along the perimeter of these canals are essential in maintaining suitable habitat (e.g., cover, basking, prey base, etc.) for giant garter snakes. These canals represent the primary avenues for dispersal and the most important breeding and foraging habitats for giant garter snakes within an agricultural landscape. Conservation easements that provide protection and opportunities for wetland enhancement along large permanent water conveyance canals (without affecting water conveyance capability) will be an important tool in managing and maintaining this population.

## **Aquatic Communities**

A total of 2,506 miles of stream channels, 487 stock ponds, and 8,307 acres of open water provide aquatic habitat for covered species. The strategy for preservation of aquatic communities is aimed at meeting the conservation needs of the Chinook salmon, Central Valley steelhead, Sacramento splittail, green sturgeon, river lamprey, foothill yellow-legged frog, western spadefoot toad, northwestern pond turtle, giant garter snake, bald eagle, and American peregrine falcon.

## **Goals and Objectives**

**Goal AQUA1:** Maintain and enhance functional aquatic communities to benefit covered species and biodiversity.

**Objective AQUA1.1:** Protect \_\_\_ acres of existing unprotected grassland and oak savanna and woodland communities that support stock ponds suitable for native amphibian breeding.

**Objective AQUA1.2:** Protect \_\_\_ linear miles of existing unprotected reaches of Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Lindo Channel, Little Chico Creek, Butte Creek, Little Dry Creek, and Feather River.

**Objective AQUA1.3:** Restore ponds and associated emergent wetlands within the Basin Landform (Southern Rice, Northern Rice, Sacramento River CAZs) suitable for giant garter snake habitat on preserved lands.

**Objective AQUA1.4:** Reduce loads of contaminants in protected streams that may be toxic to aquatic biota.

**Objective AQUA1.5:** Improve water temperature and overhead and instream cover conditions along \_\_ linear miles of protected streams.

**Objective AQUA1.6:** Remove or modify in-stream structures that pose a barrier to the upstream and downstream movement of covered and other native fish species to provide for the passage of fish.

**Objective AQUA1.7:** Remove \_\_ linear feet of armored channel banks along Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Lindo Channel, Little Chico Creek, Butte Creek, Little Dry Creek, and Feather River to restore erosional and depositional processes and improve the supply of spawning gravels.

**Objective AQUA1.8:** Enhance protected stock ponds to improve habitat structure and hydrologic conditions for covered species.

## **Conservation Measures**

**AQUA CM1: Establish Agreements with Water and Irrigation Districts to Maintain Appropriate Water Flows in Permanent Water Conveyance Canals.** The Implementing Entity would work with water and irrigation districts that own, operate, and maintain water conveyance facilities to ensure that appropriate flows are present to support the requirements of covered species.

To maintain giant garter snake use, water flows in water conveyance canals must be maintained at appropriate levels. Reducing flows can restrict movement and isolate individuals and populations. Over time, this limits reproductive potential and reduces dispersal capabilities. Maintaining suitable water flows during the active period of the year will facilitate movement and with implementation of habitat protection and enhancement measures will potentially expand the distribution and population of giant garter snakes within the Basin CAZs.

## **Species-Level Conservation Measures**

### **Giant Garter Snake**

#### **Goals and Objectives**

**Goal GGSN1:** Maintain or increase the abundance and distribution of giant garter snake.

**Objective GGSN1.1:** Maintain \_\_ acres of existing rice lands and associated water conveyance ditches in rice production distributed within the Planning Area as described in Table 16.

**Objective GGSN1.2:** Maintain \_\_ acres of existing irrigated croplands that support giant garter snake habitat in land cover types that support habitat distributed within the Planning Area as described in Table 16.

**Objective GGSN1.3:** Protect \_\_ acres of existing unprotected managed wetlands, emergent wetlands, and willow scrub that support giant garter snake habitat distributed within the Planning Area as described in Table 16.

**Objective GGSN1.4:** Maintain the connectivity of \_\_ linear miles of waterways that are currently connected to rice lands and patches of managed wetlands, emergent wetlands, willow scrub, and irrigated cropland that support giant garter snake habitat distributed within the Planning Area as described in Table 16.

**Objective GGSN1.5:** Restore \_\_ acres of managed wetlands, emergent wetlands, and willow scrub that support giant garter snake habitat within 8km of existing giant garter snake habitat distributed within the Planning Area as described in Table 16.

**Table 16. Giant Garter Snake Habitat Objectives by CAZ and UPA**

CAZ/UPA	Maintained Rice Land Habitat (acres)	Irrigated Croplands Maintained as Habitat <sup>1</sup> (acres)	Protected Wetland and Willow Scrub Habitat (acres)	Protected Waterways (linear miles)	Restored and Enhanced Habitat (acres)
Northern Orchards CAZ					
Northern Cascade CAZ					
Southern Cascade CAZ					
Sacramento River CAZ					
Northern Rice CAZ					
Southern Sierra CAZ					
Thermalito CAZ					
Southern Orchards CAZ					
Gridley-Biggs UPA					
Southern Rice CAZ					

<sup>1</sup>Maintained irrigated croplands include irrigated croplands that may be converted to other land cover types that support giant garter snake habitat under the HCP/NCCP.

**Conservation Strategy and Relationship to Landscape- and Community-Level Conservation Measures**

The general strategy for giant garter snake conservation is to establish a system of preserves linked to existing protected lands to form a network of protected areas outside the area where new urban growth will be covered under the HCP/NCCP.

Giant garter snake is one of the primary influences in the design of agricultural and wetland-associated preserves. Associated primarily with emergent wetland habitats along natural and artificial watercourses, the species also uses managed wetlands and flooded rice fields as well as adjacent upland habitats. Within Butte County, optimal habitat includes perennial creeks with emergent vegetation but lacking a dense riparian overstory and artificial water conveyance channels that support emergent vegetation within a landscape dominated by managed wetland or rice farming. Other irrigated cropland types, such as irrigated pastures and grain fields, may also provide cover and dispersal habitat, particularly when near suitable aquatic habitat. Within the Plan Area, this condition exists primarily in the Butte Basin in the southwest corner of the Plan Area.

The giant garter snake is known to occur in the Plan Area, with nearly all reported occurrences in the southwestern corner of the Plan Area. While few recent surveys have been conducted, the species is considered extant throughout most of southwestern Butte County.

Giant garter snake habitat exists predominantly within three CAZs: Sacramento River, Northern Rice, and Southern Rice. These three contiguous areas include 90.1 percent of the rice lands (108,291.8 acres) and 87.3 percent of the managed and emergent wetland habitats (30,180.4 acres) in the Plan Area. In addition, all but one of the reported GGS sightings in CNDDDB occurs within these three CAZs. Eric Hansen (pers. comm.) notes that few if any records occur east of Highway 99 in Butte County and that no definitive records occur east of Highway 70. Thus, the giant garter snake conservation strategy includes establishing conservation goals within the Sacramento River, Northern Rice, and Southern Rice CAZs.

The giant garter snake conservation area (as defined above) represents the northernmost and northeastern-most extent of giant garter snake habitat east of the Sacramento River. North of the Northern Rice CAZ, the landscape is dominated by orchard farming along with urbanization and grassland habitats. While watercourses extended into this area, because there is no connectivity with any other suitable landscape, this area was excluded from the conservation strategy. Vegetation types (e.g., rice, managed wetlands) considered suitable for giant garter snake also occur east Highway 99 and east of Highway 70 in the Southern Orchards CAZ. However, there are no records of giant garter snake occurrence in these areas, they are considered isolated from the Butte Basin population, and/or were relatively small patches of habitat separated by either Highway 99 or Highway 70, both potential barriers to movement. Thus, these areas were also excluded from the conservation strategy.

On the south and west, the conservation area is contiguous with other giant garter snake habitats, mainly rice fields and managed wetland landscapes, and known extant giant

garter snake populations. Thus, the conservation area is contiguous with the giant garter snake range to the south and west and represents the northeastern-most extent of the species' range.

While maintaining large rice land and managed wetland landscapes are important to sustain populations, connectivity of suitable aquatic habitats (e.g., natural streams and water conveyance channels) is essential to link protected areas, provide connectivity with unprotected agricultural areas and facilitate movement of snakes within the Plan Area and contiguous suitable habitats outside of the Plan Area. Butte Basin rice farming is supported by a network of permanent water delivery canals (e.g., Cherokee Canal, Ashley Lateral Canal, Western Canal, Watt Lateral Canal, etc.) and natural drainages (e.g., Butte Creek, Little Dry Creek, etc.). Smaller irrigation channels feed off of these permanent canals.

As noted, the general conservation approach for giant garter snake involves establishing a network of preserves throughout the Sacramento River, Northern Rice, and Southern Rice CAZs (i.e., giant garter snake conservation area), maintaining connectivity between the preserves with natural or permanent artificial watercourses, maintaining suitable aquatic and wetland habitat along these watercourses, and establishing a program to maintain target acreages of active rice, other irrigated cropland, and managed wetland throughout the conservation area.

A large portion of the conservation area is currently protected as DFG or USFWS refuges or through conservation easements on private lands. Of the 20,154.4 acres of managed and emergent wetland on the Southern Rice CAZ, 14,632.8 acres (72.6) are currently protected and are expected to be maintained as wetland habitat. Fewer acres of managed and emergent wetland occur on the Northern Rice CAZ (2,323.1 acres), but 1,101.8 (47.4%) is protected. Of the 7,702.9 acres of managed and emergent wetland habitat in the Sacramento River CAZ, 7,290.4 acres (94.6%) is protected. Rice lands are mostly privately held lands; however, there are some lands that are protected through conservation easement or are state or federal refuge lands.

Preservation of rice lands in the Butte Basin is a focus of the conservation strategy for giant garter snake. As indicated, the conservation area for giant garter snake includes the Sacramento River, Northern Rice, and Southern Rice CAZs, which incorporate 90.1 percent of the rice-growing land with the Planning Area. Preservation of other irrigated cropland (e.g., hay, row, and grain cropland) that is adjacent to managed wetlands is a secondary focus of the conservation strategy for giant garter snake. Within the giant garter snake conservation area (e.g., Sacramento River, Northern Rice, Southern Rice CAZs), the majority of this type occurs in the Sacramento River CAZ.

The Planning Area includes 34,578.3 acres of wetland communities considered suitable for giant garter snake (i.e., managed wetland, emergent wetland, willow scrub). Of this total, 30,180 acres (87.3 percent) occurs within the giant garter snake conservation area (Sacramento River, Northern Rice, and Southern Rice CAZs). Of this, 23,025 acres (76.3

percent [and a total of 67 percent of wetland habitats within the Plan Area]) is currently protected under state or federal ownership or under conservation easements on private land and is managed for the benefit of wildlife and wetland conservation.

Because a significant amount of existing wetland habitat is currently protected within the conservation area, the focus of wetlands conservation related to giant garter snake will include the preservation and enhancement of remaining unprotected wetland habitats and the protection, enhancement, and restoration of wetland habitats along drainages.

The giant garter snake conservation area includes 94.6 linear miles of connected waterways, much of which is currently or has potential to support giant garter snake breeding, foraging, and movement habitat. These waterways provide the necessary connectivity between occupied areas and are essential for dispersal and genetic exchange.

As described in conservation measures AGLA CM 1-CM5, WETL CM 1 and 2, and AQUA CM1, the conservation strategy for giant garter snake includes preservation of a total of \_\_\_ acres of rice lands, other irrigated croplands, emergent wetlands, managed wetlands, and aquatic communities that support giant garter snake habitat. As described under LAND CM X, preserved giant garter snake habitats will be configured to provide for the preservation of movement corridors to provide connectivity among habitat areas and dispersal pathways.

#### **GGSN CM1: Compensate for the Loss of Giant Garter Snake Habitat**

If impacts of implementing covered activities on giant garter snake habitat cannot be avoided, compensation for temporary and permanent losses of habitat will be provided in accordance with USFWS guidelines (USFWS 1999).

#### **Avoidance and Minimization Measures**

The following avoidance and minimization measure is designed to avoid and minimize direct impacts on the giant garter snake that may be associated with implantation of covered activities and conservation measures.

#### **GGSN AMM1: Implement Avoidance and Minimization Measures.**

The following represent standard measures to avoid and minimize potential impacts to GGS as a result of covered activities.

- 1) All construction activity involving disturbance of GGS habitat (e.g., grading, excavation, dredging, etc.) is restricted to the period between May 1 and October 1. This is the active period for GGS and direct mortality is lessened because snakes are more likely move and avoid danger.

- 2) All herbicide application for control of vegetation along channel banks is restricted to the period between October 2 and April 30.
- 3) Irrigation ditches that have been approved for excavation or filling shall be completely dewatered for at least 15 consecutive days prior to the excavation or filling.
- 4) Confine channel clearing to the minimal area necessary to facilitate construction activities. Flag and designate areas of GGS habitat to be avoided within or adjacent to the project area "Environmentally Sensitive Areas". This area shall be avoided by all construction personnel.
- 5) Confine movement of heavy equipment to existing roadways and operate excavation equipment from the top of banks to the extent possible to minimize habitat disturbance.
- 6) When working near flooded fields and canals during the summer, vehicle speed shall be kept below 15 MPH in areas where the line of site is obstructed and below 25 MPH where it is not obstructed to avoid hitting giant garter snakes.
- 7) When mowing fields near streams or canals, workers shall start on the side furthest from the water to work the snakes toward the water, cutting the swath along the water last will allow the snakes to maintain cover and escape.
- 8) Construction personnel shall receive USFWS-approved worker environmental awareness training. This training instructs workers to recognize giant garter snake and its habitats and what to do if a giant garter snake is encountered during construction activities.
- 9) If a live giant garter snake is found during construction activities, immediately notify the USFWS and the project's biological monitor. The biological monitor, or his/her assignee, shall do the following:

Stop construction in the vicinity of the snake. Monitor the snake and allow the snake to leave on its own. The monitor shall remain in the area for the remainder of the work day to make sure the snake is not harmed or if it leaves the site, does not return. Escape routes for GGS should be determined in advance of construction and snakes should always be allowed to leave on their own. If a giant garter snake does not leave on its own within 1 working day, further consultation with USFWS is required.

- 11) Upon locating dead, injured or sick threatened or endangered wildlife species, the Permittees or their designated agents must notify within 1 working day the Services' Division of Law Enforcement or the Sacramento Fish and Wildlife

- Office. Written notification to both offices must be made within 3 calendar days and must include the date, time, and location of the finding of a specimen and any other pertinent information.
- 12) After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. If this material is situated near undisturbed GGS habitat and is scheduled to be removed between October 1 and April 30, it shall be inspected by a qualified biologist to assure that GGS are not using it as hibernaculae. Restoration work shall include replanting species removed from banks or with emergent vegetation in the active channel.
  - 13) No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed on a project site when working within 200 feet of snake aquatic or rice habitat. Possible substitutions include coconut coir matting, tactified hydroseeding compounds, or other material approved by the wildlife agencies.

**REVISED DRAFT**

**Conservation Preserve Design Spatial Criteria for Covered Bird Species**

*Note to Stakeholder Committee: This handout provides draft proposed spatial criteria for covered bird species based on the partially filled-in sample of the framework table discussed at the May 7, 2008 Stakeholder Committee meeting. Spatial criteria will be included in the conservation strategy to identify key spatial criteria important to covered species to be used in developing the developing spatial preserve design criteria.*

<b>Proposed Covered Species</b>	<b>Preserve Minimum Patch Size/Configuration<sup>1</sup></b>	<b>Preserve Connectivity<sup>2</sup></b>
<p>Bald eagle  <i>Haliaeetus leucocephalus</i></p>	<p>Minimum patch size for nesting habitat should be at least 30 acres. This corresponds with the USFWS' National Bald Eagle Management Guidelines maximum buffer requirement for bald eagle nest site protection (660 feet from nests) (USFWS 2007). Nesting habitat patch size is highly variable suggesting that use of nesting habitat is not necessarily a function of patch size, but instead related to nest tree structure, proximity to foraging habitat, proximity to other nesting bald eagles, and disturbance. Thus, the maximum buffer distance was used as a minimum patch size.</p> <p>Minimum patch size for preserving terrestrial foraging habitats should be at least 500 acres. This is based on reported territory sizes, and particularly Stalmaster (1987) who suggested 1-2 square km (approximately 500 acres [2 square km]). Territory size is used here to establish a minimum patch size for foraging habitat because territories are defended in part to ensure sufficient food resources to raise young.</p> <p>Preservation of aquatic foraging habitats should focus on preserving the entire length of streams that support anadromous fish.</p>	<ul style="list-style-type: none"> <li>▪ Preserve nesting habitat along the Feather River, Sacramento River, Big Chico Creek, Butte Creek, and adjacent to Lake Oroville that are at least 660 feet (USFWS 2007) from sources of human disturbance that could be sufficient to adversely affect nesting success.</li> <li>▪ Restore/create nesting habitat on lands that are adjacent to aquatic foraging habitats, such as Lake Oroville, the forebay and the afterbay.</li> <li>▪ Conservation of foraging habitat should focus on preserving agricultural lands and wetlands that also provide foraging habitat for wintering waterfowl.</li> </ul>

<p>Swainson's hawk  <i>Buteo swainsoni</i></p>	<p>Minimum patch size for preserving foraging habitat should be 830 acres. This represents the smallest home range size of recorded home ranges in the Sacramento Valley (Estep 1989).</p> <p>Minimum patch size for riparian nesting habitat is the same as recommended for western yellow-billed cuckoo (25 acres).</p> <p>Minimum patch size for other nesting habitats is the same as recommended for white-tailed kite (150 acres).</p>	<ul style="list-style-type: none"> <li>▪ Give priority to foraging habitat areas that are within 1 mile of nesting habitat. This roughly corresponds to the minimum home range size (830 acres). However, Swainson's hawks regularly travel to more distant foraging habitats depending on seasonal changes in prey availability and accessibility (Estep 1989).</li> <li>▪ Preserves should be contiguous with other suitable agricultural lands at a minimum of 2,760 acres, the mean home range size of Swainson's hawks in the Sacramento Valley (Estep 1989).</li> <li>▪ Focus on preserving lands that include potential nesting habitat (e.g., woodland patches, riparian, tree rows, isolated trees) or have potential for enhancement of both nesting and foraging values.</li> </ul>
<p>Greater sandhill crane  <i>Grus canadensis tabida</i></p>	<p>Minimum patch size for preserving winter roosting/foraging habitat should be 160 acres. This corresponds with the size of a large intact agricultural parcel. During winter, cranes are found almost exclusively in agricultural fields (rice, corn, wheat, alfalfa) within open agricultural landscapes. They are sensitive to human disturbances and thus will not typically be found in small agricultural patches. The sizes of nocturnal roost sites are highly variable (1-300 acres [Littlefield and Ivey 2000]). Littlefield and Ivey (2000) recommend roost sites of at least 100 acres.</p>	<ul style="list-style-type: none"> <li>▪ Preserve foraging habitats within 2 miles of roosting habitat (Littlefield 1993, Littlefield and Ivey 2000).</li> <li>▪ Preserve roosting habitats that are at least 0.25 miles from sources of human disturbance that could be sufficient to cause abandonment of roost sites. This distance is recommended by Littlefield and Ivey (2000) for hunting restrictions.</li> </ul>

<p>California black rail  <i>Laterallus jamaicensis coturniculus</i></p>	<p>Minimum patch size of emergent wetland habitats that can be used by black rails is 0.5 acres (The California Black Rail Project 2004).</p>	<ul style="list-style-type: none"> <li>▪ Give priority to preserving occupied habitat areas and unoccupied habitat areas that are located within 3.7 miles of occupied habitat areas (This distance corresponds with the distance between occupied sites in Yuba County (Aigner et al. 1995).</li> <li>▪ Preserve small patches of existing habitat within larger preserved patches of grassland, pastureland, and seasonal wetland.</li> </ul>
<p>Western yellow-billed cuckoo  <i>Coccyzus americanus occidentalis</i></p>	<p>At least 25 acres (Gaines 1974) of mature cottonwood/willow riparian forest in a linear configuration along drainages. Habitat patches should be at least 330 feet wide and at least 990 feet long (Gaines 1974), with preservation priority given to patches greater than 50 acres and with widths over 660 feet (defined as suitable habitat by Laymon and Halterman [1989]).</p>	<ul style="list-style-type: none"> <li>▪ Preserved habitat should be located within drainages that generally provide continuous canopy cover along its length to promote movement. Does not require continuous breeding habitat, but at least cover and roosting habitat.</li> </ul>
<p>Bank swallow  <i>Riparia riparia</i></p>	<p>At least 17 feet of open, vertical, and erodable channel bank supporting soils that provide suitable nesting substrate (Garrison 1989).</p>	<ul style="list-style-type: none"> <li>▪ Focus preservation within channel reaches that currently support nesting colonies to provide for the ongoing replacement of existing nesting habitat that is lost as channels meander and erode.</li> </ul>
<p>White-tailed kite  <i>Elanus leucurus</i></p>	<p>Minimum patch size of 150 acres, which roughly corresponds to average territory size (Dunk 1995).</p>	<ul style="list-style-type: none"> <li>▪ Prioritize preservation of foraging habitat that is located within 0.5 mile of nesting habitat.</li> </ul>
<p>Western burrowing owl  <i>Athene cunicularia hypugea</i></p>	<p>Burrowing owl home range sizes are highly variable (14 to 481 acres [Bates 2006]). Mean home range in California reported by Gervais et al (2000) was 467 acres. Based on these ranges, minimum patch size is 400 acres.</p>	<ul style="list-style-type: none"> <li>▪ Give priority to occupied habitats and grassland habitats that support healthy ground squirrel populations.</li> <li>▪ Preserve burrowing owl habitats adjacent to existing habitat areas.</li> </ul>

<p>Yellow-breasted chat <i>Icteria virens</i></p>	<p>Minimum patch size of 10 acres (territory size ranges from 0.2 to 10 acres [Zeiner et al. 1990, Gaines 1974]).</p>	<ul style="list-style-type: none"> <li>Preserve drainages with existing continuous woody riparian cover or that could be restored to provide continuous cover to provide for movement and expanding distribution.</li> </ul>
<p>Tricolored blackbird <i>Agelaius tricolor</i></p>	<p>Patches of emergent wetland tule/cattail or riparian scrub (e.g., blackberry brambles) of at least 0.5 acre in size (Beedy 1989).</p>	<ul style="list-style-type: none"> <li>Preserve habitat areas within 75 feet of a water source and 0.5 mile of wetland, irrigated pasture, alfalfa, or other land cover types that produce large numbers of insects.</li> </ul>
<p>Peregrine Falcon <i>Falco peregrinus</i></p>	<p>Minimum nesting habitat requirements are rock outcrops, cliff faces, and rimrock with near vertical slopes that are at least 30 feet in height (Wheeler 2003).</p> <p>Foraging occurs over a wide territory (up to a 15 mile radius from the nest [Hays and Milner 1999]), but typically forages in specific areas that congregate waterfowl or shorebird prey. In this respect the peregrine is an opportunistic foraging and the minimum patch size for specific bird concentration areas has not been determined. For purposes here, use a 40 acre minimum patch size for specific foraging sites.</p>	<ul style="list-style-type: none"> <li>No connectivity criteria are proposed because 1) peregrine falcons can forage over a distance from nesting habitat located along the eastern edge of the Planning Area that is greater than the extent of the Planning Area and 2) nesting habitat is defined by fixed geologic features.</li> </ul>
<p><sup>1</sup>Minimum patch size/shape that should be preserved to provide meaningful habitat value for the species.</p> <p><sup>2</sup>Connectivity requirements such as proximity to other patches of species habitat, proximity to other patches of specific land cover types, movement corridors.</p>		

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**REVISED DRAFT**

**Conservation Preserve Design Spatial Criteria for Covered Reptiles, Amphibians, Fish, and Invertebrates**

*Note to Stakeholder Committee: This handout provides draft proposed spatial criteria for covered reptile, amphibian, fish, and invertebrate species based on the partially filled-in sample of the framework table discussed at the May 7, 2008 Stakeholder Committee meeting. Spatial criteria will be included in the conservation strategy to identify key spatial criteria important to covered species to be used in developing the developing spatial preserve design criteria.*

<b>Proposed Covered Species</b>	<b>Preserve Minimum Patch Size/Configuration <sup>1</sup></b>	<b>Preserve Connectivity<sup>2</sup></b>
<p>Giant garter snake <i>Thamnophis gigas</i></p>	<p>Wylie et al. (2002) reported home ranges ranging from 17 to 234 acres in Colusa County. E. Hansen in: ICF Jones &amp; Stokes (2008) reports annual movements of between 0.42 to 0.78 miles along canals in the Natomas Basin. For this species, home range size is less relevant than connectivity of suitable aquatic habitat, which is essential. Minimum patch size should be 320 acres (using a movement distance of 0.5 miles (0.5 miles squared = 320 acres) and should include suitable linear aquatic habitat with connectivity throughout the larger region and adjacent suitable habitat, particularly rice fields.</p>	<ul style="list-style-type: none"> <li>▪ Connectivity of aquatic habitats (e.g., streams or canals) is essential to sustaining populations.</li> <li>▪ Suitable upland aestivation habitat is required immediately adjacent to aquatic habitat (banks, levees, edges, or open uncultivated lands).</li> <li>▪ Adjacency with rice lands is preferred.</li> </ul>
<p>California red-legged frog <i>Rana aurora draytonii</i></p>	<p>Primarily aquatic, but migratory movements to aestivation sites can exceed 1 mile. Migration routes are thought to be long-established historic migratory pathways (USFWS 2002), but in general, dispersal distances are thought to depend on the availability of suitable habitat. Fellers (2005) reports that most migration distances are less than 1,640 feet. Using this distance, minimum patch size should be 200 acres surrounding suitable aquatic habitat.</p>	<ul style="list-style-type: none"> <li>▪ Preserve drainages and adjacent upland habitats within 1,640 feet of drainages that provide connectivity among breeding habitats (e.g., stock ponds), serve as movement corridors, and provide aestivation habitat.</li> <li>▪ Preserve grassland and savanna habitats within 1,640 feet of breeding habitat to provide habitat for dispersal and aestivation.</li> </ul>

Proposed Covered Species	Preserve Minimum Patch Size/Configuration <sup>1</sup>	Preserve Connectivity <sup>2</sup>
California horned lizard <i>Phrynosoma coronatum frontale</i>	Wone and Beauchamp (2003) calculated a maximum home range of 15 acres. In order to provide minimum movement and dispersal potential, minimum patch size should be 40 acres, which also corresponds with a small parcel size in open grassland or chaparral communities.	Preserves should be contiguous with larger protected grassland, chaparral, or savannah communities on the eastern edge of the Plan Area.
Northwestern pond turtle <i>Clemmys marmorata marmorata</i>	Average home range size for adult male is 2.5 acres (Bury 1972). Average nesting distance from water is approximately 100-feet and average distance to upland refugia is 164 feet (Rathbun et al. 2002). Minimum patch size should be 2.5 acres of suitable aquatic habitat (stream or pond/lake) with a minimum 200-foot upland buffer around the perimeter.	Preserves along stream courses should have sustainable permanent water flows and are free of significant upstream disturbances including toxins, streamside development, and other sources of potential upstream habitat degradation.  Pond or lake preserves should be contiguous with open grassland or other natural land habitats to facilitate dispersal.
Western spadefoot <i>Scaphiopus hammondii</i>	Stebbins (1972) suggests individual home ranges of about 1 acre. However, Semlitsch and Brodie (2003) suggest that spadefoot uses an area that can extend an average 1,207 feet from aquatic habitat. Using this distance, the minimum circular patch size should be 105 acres.	Preserves must include suitable aquatic breeding habitat (streams with pools, vernal pools, ponds) and adjacent open natural lands, mainly vernal pool grasslands, but also other grasslands, chaparral, riparian, and savannah communities.  Preserves should be contiguous with other protected grasslands, chaparral, riparian, or savannah habitat in order to retain larger landscapes suitable to sustain populations and allow for dispersal.
Foothill yellow-legged frog <i>Rana boylei</i>	Minimum patch sizes for this species have not been established. Fellers (2005) states that the home range of foothill yellow legged frogs is largely unknown and that movements along streams are fairly modest in terms of distance traveled. Home ranges have been calculated for mountain yellow-legged frog but are highly variable (Vrendenburg et al. 2005). The species is highly aquatic and generally not associated with adjacent upland habitats other than along the immediate edges of streams.	<ul style="list-style-type: none"> <li>▪ Preserve aquatic stream habitat and adjacent riparian and upland habitats extending at least 50 feet from the stream.</li> <li>▪ Preserves should be along streams that are otherwise protected along their length. Movements and dispersal occur within the stream corridor.</li> </ul>

Proposed Covered Species	Preserve Minimum Patch Size/Configuration <sup>1</sup>	Preserve Connectivity <sup>2</sup>
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	<p>Minimum habitat patch sizes for splittail habitat have not been established. Functional floodplain spawning and rearing habitat, however, can be provided by relatively small patches of floodplain. Based on this assessment, floodplain areas of at ___ acres should provide a substantial level of splittail production.</p> <p>Preserved patches of channel margin habitat supporting overhead and instream cover should be at least ___ linear feet.</p>	<ul style="list-style-type: none"> <li>▪ Focus preservation on floodplain habitats that maintain or can be altered to maintain hydrologic connectivity to main river channels.</li> <li>▪ Topography of inundated floodplains should avoid stranding of splittail.</li> <li>▪ Must be connected to mainstem Sacramento River with adequate flows for fish passage.</li> <li>▪ Preserved reaches should not include diversions that entrain splittail.</li> </ul>
Central Valley steelhead <i>Oncorhynchus mykiss</i>	<p>Minimum habitat patch sizes for steelhead habitat have not been established. Functional floodplain rearing habitat, however, can be provided by relatively small patches of floodplain. Based on this assessment, floodplain areas of at ___ acres should provide sufficient area to support rearing steelhead.</p> <p>Preserved patches of channel margin habitat supporting overhead and instream cover should be at least ___ linear feet.</p> <p>Spawning habitat should encompass at least ___ linear feet of stream channels supporting spawning gravels.</p>	<ul style="list-style-type: none"> <li>▪ Focus preservation on floodplain habitats that maintain or can be altered to maintain hydrologic connectivity to main river channels.</li> <li>▪ Topography of inundated floodplains should avoid stranding of steelhead.</li> <li>▪ Must be connected to mainstem Sacramento River with adequate flows for fish passage.</li> <li>▪ Preserved reaches should not include diversions that entrain steelhead.</li> </ul>

Proposed Covered Species	Preserve Minimum Patch Size/Configuration <sup>1</sup>	Preserve Connectivity <sup>2</sup>
<p>Central Valley spring run Chinook salmon <i>Oncorhynchus tshawytscha</i></p>	<p>Minimum habitat patch sizes for Chinook salmon habitat have not been established. Functional floodplain rearing habitat, however, can be provided by relatively small patches of floodplain. Based on this assessment, floodplain areas of at ___ acres should provide sufficient area to support rearing steelhead.</p> <p>Preserved patches of channel margin habitat supporting overhead and instream cover should be at least ___ linear feet.</p> <p>Spawning habitat should encompass at least ___ linear feet of stream channels supporting spawning gravels.</p>	<ul style="list-style-type: none"> <li>▪ Focus preservation on floodplain habitats that maintain or can be altered to maintain hydrologic connectivity to main river channels.</li> <li>▪ Topography of inundated floodplains should avoid stranding of Chinook salmon.</li> <li>▪ Must be connected to mainstem Sacramento River with adequate flows for fish passage.</li> <li>▪ Preserved reaches should not include diversions that entrain Chinook salmon.</li> </ul>
<p>Sacramento River winter run Chinook salmon <i>Oncorhynchus tshawytscha</i></p>	<p>Minimum habitat patch sizes for Chinook salmon habitat have not been established. Functional floodplain rearing habitat, however, can be provided by relatively small patches of floodplain. Based on this assessment, floodplain areas of at ___ acres should provide sufficient area to support rearing steelhead.</p> <p>Preserved patches of channel margin habitat supporting overhead and instream cover should be at least ___ linear feet.</p>	<ul style="list-style-type: none"> <li>▪ Focus preservation on floodplain habitats that maintain or can be altered to maintain hydrologic connectivity to main river channels.</li> <li>▪ Topography of inundated floodplains should avoid stranding of Chinook salmon.</li> <li>▪ Must be connected to mainstem Sacramento River with adequate flows for fish passage.</li> <li>▪ Preserved reaches should not include diversions that entrain Chinook salmon.</li> </ul>

Proposed Covered Species	Preserve Minimum Patch Size/Configuration <sup>1</sup>	Preserve Connectivity <sup>2</sup>
<p>Central Valley fall/late-fall run Chinook salmon <i>Oncorhynchus tshawytscha</i></p>	<p>Minimum habitat patch sizes for Chinook salmon habitat have not been established. Functional floodplain rearing habitat, however, can be provided by relatively small patches of floodplain. Based on this assessment, floodplain areas of at least __ acres should be to provide sufficient area to support rearing steelhead.</p> <p>Preserved patches of channel margin habitat supporting overhead and instream cover should be at least __ linear feet.</p> <p>Spawning habitat should encompass at least __ linear feet of stream channels supporting spawning gravels.</p>	<ul style="list-style-type: none"> <li>▪ Focus preservation on floodplain habitats that maintain or can be altered to maintain hydrologic connectivity to main river channels.</li> <li>▪ Topography of inundated floodplains should avoid stranding of Chinook salmon.</li> <li>▪ Must be connected to mainstem Sacramento River with adequate flows for fish passage.</li> <li>▪ Preserved reaches should not include diversions that entrain Chinook salmon.</li> </ul>
<p>Green sturgeon <i>Acipenser medirostris</i></p>	<p>Minimum habitat patch sizes for green sturgeon habitat have not been established. Preserved patches of channel margin habitat supporting overhead and instream cover should be at least __ linear feet.</p>	<ul style="list-style-type: none"> <li>▪ Must be connected to mainstem Sacramento River with adequate flows for fish passage.</li> <li>▪ Preserved reaches should not include diversions that entrain green sturgeon.</li> </ul>
<p>River lamprey <i>Lampetra ayresi</i></p>	<p>Minimum habitat patch sizes for river lamprey habitat have not been established. Preserved patches of channel margin habitat supporting overhead and instream cover should be at least __ linear feet.</p> <p>Spawning habitat should encompass at least __ linear feet of stream channels supporting spawning gravels.</p>	<ul style="list-style-type: none"> <li>▪ Must be connected to mainstem Sacramento River with adequate flows for fish passage.</li> <li>▪ Preserved reaches should not include diversions that entrain river lamprey.</li> <li>▪ Preserved spawning habitat should be should be located near channel margins with sandy substrates that support ammocoete habitat.</li> </ul>
<p>Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i></p>	<p>Minimum habitat patch size for a beetle is a single shrub. USFWS guidelines for replacing habitat for a single removed elderberry shrub require 1,800 square feet of area for restoration (USFWS 1999).</p>	<ul style="list-style-type: none"> <li>▪ Focus preservation on areas that provide a gradient of habitat conditions that support elderberry extending from woody riparian to adjacent oak savanna.</li> </ul>

Proposed Covered Species	Preserve Minimum Patch Size/Configuration <sup>1</sup>	Preserve Connectivity <sup>2</sup>
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	A vernal pool supporting habitat (typically greater than 500 sq ft) and its watershed.	<ul style="list-style-type: none"> <li>Preserve the integrity of subwatersheds that support vernal pools.</li> </ul>
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	A vernal pool supporting habitat and its watershed.	<ul style="list-style-type: none"> <li>Preserve the integrity of subwatersheds that support vernal pools.</li> </ul>
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	A vernal pool supporting habitat and its watershed.	<ul style="list-style-type: none"> <li>Preserve the integrity of subwatersheds that support vernal pools.</li> </ul>

<sup>1</sup>Minimum patch size/shape that should be preserved to provide meaningful habitat value for the species.

<sup>2</sup>Connectivity requirements such as proximity to other patches of species habitat, proximity to other patches of specific land cover types, movement corridors.

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**REVISED DRAFT**  
**Conservation Preserve Design Criteria for Planning Species**

*Note to Stakeholder Committee: This handout is an updated version of the partially filled-in framework table provided for discussion at the May 7, 2008 Stakeholder Committee meeting. Preserve design criteria will be included in the conservation strategy to identify key spatial criteria important to planning species (representative of specific natural communities) to be used in developing the developing spatial preserve design criteria that address covered species habitat requirements.*

<b>Proposed Planning Species</b>	<b>Natural Communities Addressed by the Species</b>	<b>Preserve Minimum Size/Configuration</b>	<b>Preserve Connectivity</b>	<b>Covered Species Habitat Needs Provided For</b>
Black-tailed deer (migratory herds – mid-elevation foothills and higher elevations)	Oak woodlands and savanna, Also includes stream corridors and foothill riparian habitats.	As a species that migrates through the study area, large patch sizes would be required to manage habitat for deer. Mule deer home ranges are large and variable in size (96 – 7,112 acres [Kie et al 2002]). Minimum patch size for purposes of managing this landscape should be correspondingly large. Preserved patches should be at least 300 acres and contiguous with other protected habitat areas to allow for unobstructed movement through the plan area.  The location and configuration should be based on proximity to high resident deer use areas or known migratory routes.	Connectivity of suitable deer habitat through the planning area is essential for migratory herds. Prioritize preservation of habitat areas that provide connectivity with other habitat areas to provide movement corridors for resident and migratory herds.	<ul style="list-style-type: none"> <li>▪ White-tailed kite</li> <li>▪ Swainson’s hawk</li> <li>▪ Yellow-breasted chat</li> <li>▪ California red-legged frog</li> <li>▪ California horned lizard</li> <li>▪ Foothill yellow-legged frog</li> <li>▪ Valley elderberry longhorn beetle</li> </ul>

<p>White-fronted goose (covers wintering waterfowl, including northern pintail as recommended by the Science Advisors)</p>	<p>Foraging habitat consists of rice, irrigated pasture, irrigated cropland, and managed wetland</p>	<p>Optimal minimum patch size for foraging habitat is 250 acres based on the area required to minimize effects of human disturbance (Delta Wetlands Project HEP model, unpubl.). Recommend minimum patch size of 160 acres which provides near optimal disturbance minimization values and corresponds to a standard agricultural land parcel.</p>	<p>To facilitate protection of large intact agricultural and wetland landscapes for waterfowl and related species, prioritize acquisitions to create multiple management units of at least 500 contiguous acres (this doubles the optimum patch size as per the Delta Wetlands Project HEP model).</p>	<ul style="list-style-type: none"> <li>▪ Swainson’s hawk</li> <li>▪ Bald eagle</li> <li>▪ Peregrine falcon</li> <li>▪ Greater sandhill crane</li> <li>▪ Western burrowing owl</li> <li>▪ Tri-colored blackbird</li> <li>▪ Giant garter snake</li> <li>▪ California black rail</li> </ul>
<p>Western yellow-billed cuckoo</p>	<p>Cottonwood-willow riparian forest</p>	<p>At least 25 acres (Gaines 1974) of mature cottonwood/willow riparian forest in a linear configuration along drainages. Habitat patches should be at least 330 feet wide and at least 990 feet long (Gaines 1974), with preservation priority given to patches greater than 50 acres and with widths over 660 feet (defined as suitable habitat by Laymon and Halterman [1989]).</p>	<p>Preserved habitat should be located within drainages that generally provide continuous canopy cover along its length to promote movement. Does not require continuous breeding habitat, but at least cover and roosting habitat.</p>	<ul style="list-style-type: none"> <li>▪ Swainson’s hawk</li> <li>▪ White-tailed kite</li> <li>▪ Bald eagle</li> <li>▪ Valley elderberry longhorn beetle</li> <li>▪ Bank swallow</li> </ul>

American badger	Grasslands, vernal pool grasslands	Variable home range of between 395 to 2,100 acres (Messick and Hornocker 1981).  Minimum patch size is 400 acres to correspond with the lower home range estimate from Messick and Hornocker 1981).	Connectivity is essential for home range and dispersal movements and to facilitate protection of badger population.  Set connectivity goals to create multiple intact contiguous preserves of 1,200 acres to meet the average home range estimate (Messick and Hornocker 1981).	<ul style="list-style-type: none"> <li>▪ Western spadefoot</li> <li>▪ Vernal pool fairy shrimp</li> <li>▪ Vernal pool tadpole shrimp</li> <li>▪ Conservancy fairy shrimp</li> <li>▪ California horned lizard</li> <li>▪ California red-legged frog</li> <li>▪ Tri-colored blackbird</li> <li>▪ White-tailed kite</li> <li>▪ Swainson's hawk</li> <li>▪ Bald eagle</li> <li>▪ Peregrine falcon</li> </ul>
Yellow-breasted chat <i>Icteria virens</i>	Riparian scrub	Minimum patch size of 10 acres for a breeding territory (territory size ranges from 0.2 to 10 acres [Zeiner et al. 1990, Gaines 1974]). Recommend minimum preserved patch size of 20 acres.	Preserve drainages with existing continuous woody riparian cover or that could be restored to provide continuous cover to provide for movement and expanding distribution.	<ul style="list-style-type: none"> <li>▪ California red-legged frog</li> <li>▪ Foothill yellow-legged</li> <li>▪ Valley elderberry longhorn beetle</li> </ul>
Hitch/hardhead	Undisturbed low elevation streams	To come. Criteria could include length of channel reach, percent of canopy overhanging channel, and extent of pools and runs within preserved reaches.	To come.	<ul style="list-style-type: none"> <li>▪ Foothill yellow-legged frog</li> </ul>

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Messick, J.P.; Hornocker, M.G. 1981. Ecology of the badger in southwestern Idaho. Wildlife Monographs 76: 1-53.

**PRELIMINARY DRAFT**  
**Butte Regional HCP/NCCP Biological Goals and Objectives**

**Landscape-Level Goals and Objectives**

**Goal L1:** Preserve and protect large landscapes with the range of physical and biological attributes necessary to sustain covered species abundance and habitat, to preserve native biodiversity, and to provide a sufficient range of conditions to accommodate future anticipated shifts in distributions of covered species and natural communities with climate change.

**Objective LAND1.1:** Establish a preserve system of protected lands in the Planning Area that brings protected status to an additional extent of covered natural communities at the identified minimum patch size:

Natural Community	Extent to Protect (acres)	Minimum Patch Size (acres)
Oak woodland		300 <sup>1</sup>
Oak Savanna		300 <sup>2</sup>
Grassland		400 <sup>3</sup>
Swale complex and vernal pools		400 <sup>4</sup>
Riparian forest and scrub		25
Riparian scrub		10
Agricultural land (irrigated crop and pasture)		160
Agricultural land (rice)		160
Emergent wetlands		No minimum.

<sup>1</sup>Comprised of oak woodland or combined oak woodland and oak savanna patches.  
<sup>2</sup>Comprised of oak savanna or combined oak savanna and oak woodland patches.  
<sup>3</sup>Comprised of grassland or combined grassland and swale complex and vernal pools.  
<sup>4</sup>Comprised of swale complex and vernal pools or combined swale complex and vernal pools and grassland.

**Objective LAND1.2:** Protect \_\_ acres of suitable sites to provide for the potential future upslope migration of oak woodland and savanna communities in response to climate change.

**Goal L2:** Preserve continuous corridors of habitat along the east-west elevation gradient extending from the eastern boundary of the Planning Area to the major stream corridors in the valley bottom and along north-south corridor within the valley basin habitats.

**Objective LAND2.1:** In the Planning Area north of the City of Chico, protect a contiguous habitat corridor at least XXX feet wide along the east-west elevation gradient between the foothills at the eastern boundary of the Planning Area and the Sacramento River at the western boundary of the Planning Area (across the Northern Cascade CAZ and Northern Orchard CAZ).

**Objective LAND2.2:** In the Planning Area south of the City of Chico and north of the City of Oroville, protect a contiguous habitat corridor at least XXX feet wide along the east-west elevation gradient between the foothills at the eastern boundary of the Planning Area and Butte Creek at the western boundary of the Planning Area (across the Southern Cascade CAZ and Northern Rice CAZ).

**Objective LAND2.3:** In the Planning Area south of the City of Oroville, protect a contiguous habitat corridor at least XXX feet wide along the east-west elevation gradient between the foothills at the eastern boundary of the Planning Area and the Feather River (across the Southern Sierra CAZ and eastern part of the Southern Orchard CAZ).

**Objective LAND2.4:** Protect a contiguous habitat corridor suitable for Giant Garter Snake movement at least XXX feet wide along the north-south gradient between the Llano Seco Unit of the Upper Butte Basin Wildlife Area (in the Sacramento River CAZ), across the Northern Rice CAZ, to the Little Dry Creek Unit of the Upper Butte Basin Wildlife Area, and to Gray Lodge Wildlife Area (in the Southern Rice CAZ).

**Goal L3:** Maintain and enhance connectivity among preserves to provide for the movement of native organisms among habitat areas and to facilitate genetic exchange among populations.

**Objective LAND3.1:** Protect corridors of habitat that provide linkages among preserved habitat areas within and adjacent to the Planning Area.

**Objective LAND3.2:** Improve habitat corridors that allow covered species and other native species to move into preserved habitats from adjacent lands and among habitat areas within preserved lands.

**Objective LAND3.3:** Maintain or improve upstream and downstream passage for covered and other native fish in Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Lindo channel, Little Chico Creek, Butte Creek, Little Dry Creek, and Feather River.

**Goal L4:** Maintain and rehabilitate ecosystem processes that support covered species and their habitats.

**Objective LAND4.1:** Protect watersheds and subwatersheds to the greatest extent possible to protect the quantity and quality of runoff to streams and wetlands.

**Objective LAND4.2:** Support implementation of water quality improvement programs that serve to reduce the loads of toxic contaminants into waters that support covered plants, amphibians, and fish and foodweb processes.

**Objective LAND4.3:** Restore floodplain processes along rivers and streams.

### **Natural Community-Level Goals and Objectives**

#### **Oak Woodland and Savanna Communities**

**Goal OWSA1:** Maintain and enhance functional oak woodland and savanna communities to benefit covered species and biodiversity.

**Objective OWSA1.1:** Protect \_\_ acres of existing unprotected blue oak savanna of minimum patch size of 300 acres in combination with other oak habitats that are distributed within the Planning Area as indicated in Table 1.

**Objective OWSA1.2:** Protect \_\_ acres of existing unprotected blue oak, interior live oak, and mixed oak woodlands of minimum patch size of 300 acres distributed within the Planning Area as indicated in Table 1.

**Objective OWSA1.3:** Preferentially protect existing unprotected oak woodland and savanna that include water sources (i.e., intermittent and permanent stream channels, seeps, stock ponds).

**Objective OWSA1.4:** Manage (including adaptive management) oak woodlands and savanna to improve the likelihood for the natural regeneration of oaks where the capacity for natural regeneration has been impaired.

**Goal OWSA2:** Design the preserve system to protect lands that could convert to oak woodland and savanna communities in the future with climate change.

**Objective OWSA2.1:** Protect \_\_ acres of existing unprotected suitable sites upslope of existing oak woodland communities to accommodate shifting oak species distributions in response to climate change.

**Table 1. Oak Woodland and Savanna Community Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat
Northern Cascade CAZ	

Southern Cascade CAZ	
Northern Sierra CAZ	
Oroville UPA	
Southern Sierra CAZ	

**Grassland Communities**

**Goal GRLA1:** Maintain and enhance functional grassland communities, including swale complexes and vernal pool wetlands, to benefit covered species and biodiversity.

**Objective GRLA1.1:** Protect \_\_ acres of unprotected grassland (including grassland with swale complexes and vernal pools) of minimum patch size of 400 acres distributed within the Planning Area as indicated in Table 1.

**Objective GRLA1.2:** Protect at least \_\_ acres of existing unprotected swale complexes that are within vernal pool species recovery core areas and protect the function of the watersheds of these swale complexes.

**Objective GRLA1.3:** Protect \_\_ acres of existing unprotected grassland with swale complexes outside of vernal pool species recovery core areas distributed within the Planning Area as indicated in Table 2 and protect the watersheds of these swale complexes to the maximum extent practicable..

**Objective GRLA1.4:** Protect at least XX% of vernal pools within the planning area and at least XX% of the vernal pools over 400sq ft in area.

**Objective GRLA1.5:** Enhance \_\_ acres of degraded (i.e., disked, tire-rutted, or otherwise disturbed) vernal pools and adjacent watershed grassland within vernal pool species recovery core areas.

**Objective GRLA1.6:** Enhance \_\_ acres of degraded (i.e., disked, tire-rutted, or otherwise disturbed) vernal pools and adjacent watershed grassland outside of vernal pool species recovery core areas distributed within the Planning Area as indicated in Table 2.

**Objective GRLA1.7:** Restore \_\_ acres of high quality vernal pools for every acre of vernal pool removed as a result of implementing covered activities (i.e., compensatory ratio of X:1).

**Objective GRLA1.9:** Implement management practices that increase the abundance of ground squirrels (a “keystone species”) and other rodents that are prey for raptors and other native predators within protected grasslands.

**Table 2. Grassland Community Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Grassland		Enhanced Grassland w/Vernal Pools	Restored Grassland w/Vernal Pools
	Grassland w/o Vernal Pools and swales	Grassland w/ Vernal Pools and swale complexes		
Northern Orchards CAZ				
Northern Cascade CAZ				
Southern Cascade CAZ				
Sacramento River CAZ				
Northern Rice CAZ				
Northern Sierra CAZ				
Thermalito CAZ				
Oroville UPA				
Southern Sierra CAZ				
Southern Orchards CAZ				
Gridley-Biggs UPA				
Southern Rice CAZ				

**Riparian Communities**

**Goal RIPA1:** Maintain and enhance functional riparian communities to benefit covered species and biodiversity.

**Objective RIPA1.1:** Protect \_\_ acres of existing unprotected cottonwood/willow riparian forest and scrub in minimum patch sizes of 25 acres along rivers and streams distributed within the Planning Area as indicated in Table 3.

**Objective RIPA1.2:** Protect small stands of riparian woodland (under 25 acres) that could support nesting raptors and specifically Swainson’s hawk.

**Objective RIPA1.3:** Protect \_\_ acres of existing unprotected valley oak riparian forest within the Planning Area as indicated in Table 3.

**Objective RIPA1.4:** Protect \_\_ acres of existing unprotected grassland and oak savanna and woodland communities associated with streams that support small stands of riparian scrub.

**Objective RIPA1.5:** Enhance \_\_ acres of degraded riparian forest and scrub along rivers and streams distributed within the Planning Area as indicated in Table 3.

**Objective RIP1.6:** For every acre of riparian forest and scrub removed as a result of implementing covered activities, restore \_\_ acres of high quality riparian forest and scrub on landscapes that can provide for the natural regeneration of riparian vegetation distributed within the Planning Area as indicated in Table 3 (i.e., a X:1 compensation ratio).

**Table 3. Riparian Community Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Cottonwood/ Willow Riparian	Protected Valley Oak Riparian	Enhanced Cottonwood/ Willow Riparian	Restored Riparian Forest and Scrub
Northern Orchards CAZ				
Northern Cascade CAZ				
Southern Cascade CAZ				
Sacramento River CAZ				
Northern Rice CAZ				
Northern Sierra CAZ				
Thermalito CAZ				
Oroville UPA				
Southern Sierra CAZ				
Southern Orchards CAZ				
Gridley-Biggs UPA				
Southern Rice CAZ				

**Wetland Communities**

**Goal WETL1:** Maintain and enhance functional wetland communities to benefit covered species and biodiversity. *[Note: Goals and objectives for vernal pools and swale complexes are provided in the goals and objectives for grassland communities.]*

**Objective WETL1.1:** Protect \_\_ acres of existing unprotected emergent wetlands distributed within the Planning Area as indicated in Table 4.

**Objective WETL1.2:** Protect seeps and emergent wetlands by protecting \_\_ acres of unprotected grassland, oak savanna and oak woodland communities that support seeps and small patches of emergent wetland.

**Objective WETL1.3:** Maintain \_\_ acres of existing managed wetlands as wetlands distributed within the Planning Area as indicated in Table 4.

**Objective WETL1.4:** Enhance \_\_ acres of emergent wetland distributed within the Planning Area as indicated in Table 4.

**Objective WETL1.6:** Restore \_\_ acres of high quality emergent wetland for every acre of emergent wetland removed as a result of implementing covered activities.

**Objective WETL1.7:** Restore \_\_ acres of high quality seasonal or perennial wetland distributed for every acre of managed wetland removed as a result of implementing covered activities (i.e., a X:1 compensation ratio).

**Table 4. Wetland Community Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Emergent Wetland	Enhanced Emergent Wetland	Restored Emergent Wetland	Maintained Managed Wetland
Northern Orchards CAZ				
Northern Cascade CAZ				
Southern Cascade CAZ				
Sacramento River CAZ				
Northern Rice CAZ				
Northern Sierra CAZ				
Thermalito CAZ				
Oroville UPA				
Southern Sierra CAZ				
Southern Orchards CAZ				
Gridley-Biggs UPA				
Southern Rice CAZ				

**Aquatic Communities**

**Goal AQUA1:** Maintain and enhance functional aquatic communities to benefit covered species and biodiversity.

**Objective AQUA1.1:** Protect \_\_ acres of existing unprotected grassland and oak savanna and woodland communities that support stock ponds suitable for native amphibian breeding.

**Objective AQUA1.2:** Protect \_\_ linear miles of existing unprotected reaches of Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Lindo Channel, Little Chico Creek, Butte Creek, Little Dry Creek, and Feather River.

**Objective AQUA1.3:** Restore ponds and associated emergent wetlands within the Basin Landform (Southern Rice, Northern Rice, Sacramento River CAZs) suitable for giant garter snake habitat on preserved lands.

**Objective AQUA1.4:** Reduce loads of contaminants in protected streams that may be toxic to aquatic biota.

**Objective AQUA1.5:** Improve water temperature and overhead and instream cover conditions along \_\_ linear miles of protected streams.

**Objective AQUA1.6:** Remove or modify in-stream structures that pose a barrier to the upstream and downstream movement of covered and other native fish species to provide for the passage of fish.

**Objective AQUA1.7:** Remove \_\_ linear feet of armored channel banks along Pine Creek, Rock Creek, Mud Creek, Big Chico Creek, Lindo Channel, Little Chico Creek, Butte Creek, Little Dry Creek, and Feather River to restore erosional and depositional processes and improve the supply of spawning gravels.

**Objective AQUA1.8:** Enhance protected stock ponds to improve habitat structure and hydrologic conditions for covered species.

### **Agricultural Lands**

**Goal AGLA1:** Maintain agricultural land cover types that support habitat for covered species and other wildlife, including migratory waterfowl, shorebirds, other waterbirds, and raptors.

**Objective AGLA1.1:** Annually maintain at least \_\_ acres of land in rice production distributed within the Planning Area as indicated in Table 5.

**Objective AGLA1.2:** Annually maintain at least \_\_ acres of irrigated pasture distributed within the Planning Area as indicated in Table 5.

**Objective AGLA1.3:** Annually maintain at least \_\_ acres of irrigated hayfields and corn/grain crops distributed within the Planning Area as indicated in Table 5.

**Objective AGLA1.4:** Implement farming practices on conserved agricultural lands to increase their value as habitat for covered species (e.g., temporary fallowing; plant tree borders or other hedge rows along field borders and roadsides, etc).

**Table 5. Annual Agricultural Land Objectives by CAZ and UPA (acres)**

CAZ/UPA	Rice Land	Irrigated Pasture	Irrigated Hayfields and Corn/Grain Crops
Northern Orchards CAZ			
Northern Cascade CAZ			
Southern Cascade CAZ			
Sacramento River CAZ			
Northern Rice CAZ			
Northern Sierra CAZ			
Thermalito CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards CAZ			
Gridley-Biggs UPA			
Southern Rice CAZ			

**Species-Level Goals and Objectives: Fish and Wildlife**

**Bald Eagle**

**Goal BAEA1:** Maintain increase the abundance of breeding bald eagles and maintain the abundance of wintering bald eagles.

**Objective BAEA1.1:** Protect all unprotected existing nest sites from activities that could result in nest site abandonment and from disturbances that could reduce nesting success.

**Objective BAEA1.2:** Protect a total of \_\_\_ acres of bald eagle nesting/roosting habitat distributed within the Planning Area as indicated in Table 6.

**Objective BAEA1.3:** Restore at least \_\_\_ linear miles of nesting/roosting habitat along the Feather River, \_\_\_ linear miles along the Sacramento River, and along at least \_\_\_ percent of the Thermalito Afterbay shoreline.

**Objective BAEA1.4:** Protect a total of \_\_\_ acres of bald eagle winter foraging habitat (primarily wetlands and flooded agricultural habitats managed for winter waterfowl) distributed within the Planning Area as indicated in Table 6.

**Table 6. Bald Eagle Habitat Objectives by CAZ and UPA**

CAZ/UPA	Protected Nesting Habitat (acres)	Protected Foraging Habitat (acres)	Restored Nesting Habitat (linear miles)
Northern Orchards CAZ			
Northern Cascade CAZ			
Southern Cascade CAZ			
Sacramento River CAZ			
Northern Rice CAZ			
Northern Sierra CAZ			
Thermalito CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards CAZ			
Gridley-Biggs UPA			
Southern Rice CAZ			

**White-Tailed Kite**

**Goal WTKI1:** Maintain or increase the abundance of resident white-tailed kites.

**Objective WTKI1.1:** Annually provide a minimum of \_\_ acres of white-tailed kite foraging habitat distributed within the Planning Area as indicated in Table 7.

**Objective WTKI1.2:** Protect at least \_\_ acres of unprotected white-tailed kite nesting habitat from loss or degradation distributed within the Planning Area as indicated in Table 7.

**Objective WTKI1.3:** Restore a total of \_\_ acres of white-tailed kite riparian nesting habitat distributed within the Planning Area as indicated in Table 7.

**Table 7. White-Tailed Kite Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Foraging Habitat	Protected Nesting Habitat	Restored Nesting Habitat
Northern Orchards CAZ			
Northern Cascade CAZ			
Southern Cascade CAZ			
Sacramento River CAZ			
Northern Rice CAZ			
Northern Sierra CAZ			
Thermalito CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards CAZ			
Gridley-Biggs UPA			
Southern Rice CAZ			

**Swainson’s Hawk**

**Goal SWHA1:** Increase the abundance of nesting of Swainson’s hawk.

**Objective SWHA1.1:** Annually provide a minimum of \_\_ acres of primary foraging habitat (e.g., alfalfa, irrigated pasture, certain row crops) and a minimum of \_\_ acres of secondary foraging habitat (grassland, other row and grain crops) for Swainson’s hawk distributed within the Planning Area as indicated in Table 8.

**Objective SWHA1.2:** Protect \_\_ acres of unprotected nesting habitat from loss or degradation distributed within the Planning Area as indicated in Table 8.

**Objective SWHA1.3:** Restore a total of \_\_ acres of Swainson’s hawk riparian nesting habitat distributed within the Planning Area as indicated in Table 8.

**Objective SWHA4:** Restore a total of \_\_\_ acres of nesting habitat (riparian, small groves, tree rows, etc.) on preserves.

**Table 8. Swainson’s Hawk Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Annually Provided Foraging Habitat	Protected Nesting Habitat	Restored Nesting Habitat
Northern Orchards CAZ			
Northern Cascade CAZ			
Southern Cascade CAZ			
Sacramento River CAZ			
Northern Rice CAZ			
Northern Sierra CAZ			
Thermalito CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards CAZ			
Gridley-Biggs UPA			
Southern Rice CAZ			

**American Peregrine Falcon**

**Goal PEFA1:** Increase the abundance of breeding American peregrine falcons and maintain the abundance of wintering American peregrine falcons.

**Objective PEFA1.1:** Protect unprotected existing nesting sites from activities that could result in nest site abandonment and from disturbances that could reduce nesting success. [Note: this objective would only apply if there are nest sites that currently are under protected.]

**Objective PEFA1.2:** Protect \_\_ percent of cliff face/rimrock nesting habitat within the planning area from disturbances or other activities that could preclude their use by peregrine falcons or, if used by nesting pairs, could result in reduced nesting success.

**Objective PEFA1.3:** Preserve a total of \_\_ acres of peregrine falcon foraging habitat distributed within the Planning Area as indicated in Table 9.

**Table 9. Peregrine Falcon Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Foraging Habitat
Northern Orchards CAZ	
Northern Cascade CAZ	
Southern Cascade CAZ	
Sacramento River CAZ	
Northern Rice CAZ	
Northern Sierra CAZ	
Thermalito CAZ	
Oroville UPA	
Southern Sierra CAZ	
Southern Orchards CAZ	
Gridley-Biggs UPA	
Southern Rice CAZ	

**Greater Sandhill Crane**

**Goal SACR1:** Provide habitat of sufficient extent and quality to maintain or increase the abundance of greater sandhill cranes wintering within the Planning Area.

**Objective SACR1.1:** Annually provide a minimum of \_\_ acres of high value greater sandhill crane foraging habitat (based on type and seasonal use patterns as described in Littlefield [2002]) distributed within core sandhill crane use areas as indicated in Table 10.

**Objective SACR1.2:** Annually provide a minimum of \_\_ acres of greater sandhill crane roosting habitat in at least \_\_ locations distributed within core sandhill crane use areas (and within 2 miles of suitable foraging habitat) as indicated in Table 10 by protecting existing habitat or restoring habitat.

**Table 10. Greater Sandhill Crane Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Preserved Foraging Habitat		Annually Provided Roosting Habitat
	Cropland	Irrigated Pasture	
Northern Orchards CAZ			
Sacramento River CAZ			
Northern Rice CAZ			
Thermalito CAZ			
Southern Sierra CAZ			
Southern Orchards CAZ			
Gridley-Biggs UPA			
Southern Rice CAZ			

**California Black Rail**

**Goal BLRA1:** Maintain or increase the abundance of breeding California black rails.

**Objective BLCA1.1:** Identify and protect \_\_ freshwater marsh ponds and seeps that support California black rail habitat.

**Objective BLRA1.2:** Enhance up to \_\_ acres of protected freshwater marsh ponds and seeps to improve California black rail habitat conditions.

**Objective BLRA1.3:** Restore a total of \_\_ acres of California black rail freshwater marsh habitat distributed within the Planning Area as indicated in Table 11.

**Table 11. California Black Rail Restored Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Restored Habitat
Northern Orchards CAZ	
Northern Cascade CAZ	
Southern Cascade CAZ	
Sacramento River CAZ	
Northern Rice CAZ	
Northern Sierra CAZ	
Oroville UPA	
Southern Sierra CAZ	
Southern Orchards CAZ	
Gridley-Biggs UPA	
Southern Rice CAZ	

**Western Yellow-Billed Cuckoo**

**Goal YBCU1:** Maintain or increase the abundance of breeding western yellow-billed cuckoos.

**Objective YBCU1.1:** Protect \_\_ acres of unprotected western yellow-billed cuckoo nesting habitat from loss or degradation as indicated in Table 12 from activities that could result in the loss or degradation of nesting habitat and from disturbances that could reduce nesting success. [Note: this objective would only apply if there is nesting habitat that currently unprotected.]

**Objective YBCU1.2:** Restore a total of \_\_ acres of western yellow-billed cuckoo habitat distributed within the Planning Area as indicated in Table 12.

**Table 12. Western Yellow-Billed Cuckoo Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ		
Sacramento River CAZ		
Southern Orchards CAZ		

**Western Burrowing Owl**

**Goal BUOW1:** Increase the abundance of breeding western burrowing owls.

**Objective BUOW1.1:** Protect \_\_ acres of unprotected western burrowing owl habitat from loss or degradation distributed within the Planning Area as indicated in Table 13.

**Objective BUOW1.2:** Maintain or increase ground squirrel populations in protected habitats where it does not interfere with other management objectives.

**Objective BUOW1.3:** Enhance protected habitats with artificial nesting structures, perches, and appropriate vegetation management.

**Table 13. Western Burrowing Owl Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat
Northern Orchards CAZ	
Northern Cascade CAZ	
Southern Cascade CAZ	
Sacramento River CAZ	
Northern Rice CAZ	
Northern Sierra CAZ	
Thermalito CAZ	
Oroville UPA	
Southern Sierra CAZ	
Southern Orchards CAZ	
Gridley-Biggs UPA	
Southern Rice CAZ	

**Bank Swallow**

**Goal BASW1:** Maintain or increase the abundance of breeding bank swallows.

**Objective BASW1.1:** Protect existing occupied bank swallow nesting habitat from activities that could result in the loss or degradation of the habitat.

**Objective BASW1.2:** Protect \_\_ linear miles of channel banks along the Sacramento River, Feather River, Big Chico Creek, and Butte Creek that support dynamic bank formation and erosion processes that create bank swallow nesting habitat.

**Yellow-Breasted Chat**

**Goal YBCH1:** Maintain or increase the abundance of yellow-breasted chats.

**Objective YBCH1.1:** Protect \_\_ acres of unprotected yellow-breasted chat habitat from loss or degradation distributed within the Planning Area as indicated in Table 14.

**Objective YBCH1.2:** Restore a total of \_\_ acres of yellow-breasted chat habitat distributed within the Planning Area as indicated in Table 14.

**Table 14. Yellow-Breasted Chat Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ		
Northern Cascade CAZ		
Southern Cascade CAZ		
Northern Sierra CAZ		
Oroville UPA		
Southern Sierra CAZ		

**Tricolored Blackbird**

**Goal TRBL1:** Maintain or increase the abundance of breeding and wintering tricolored blackbirds.

**Objective TRBL1.1:** Enhance or maintain patches of vegetation on preserved lands that support tricolored blackbird nesting habitat.

**Objective TRBL1.2:** Restore a total of \_\_ acres of wetland and riparian scrub vegetation that provide tricolored blackbird nesting habitat distributed within the Planning Area as indicated in Table 15.

**Objective TRBL1.3:** Annually provide a minimum of \_\_ acres of tricolored blackbird foraging habitat distributed within the Planning Area as indicated in Table 15.

**Table 15. Tricolored Blackbird Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Restored Nesting Habitat	Annually Provided Foraging Habitat
Northern Orchards CAZ		
Northern Cascade CAZ		
Southern Cascade CAZ		
Sacramento River CAZ		
Northern Rice CAZ		
Northern Sierra CAZ		
Thermalito CAZ		
Oroville UPA		
Southern Sierra CAZ		
Southern Orchards CAZ		
Gridley-Biggs UPA		
Southern Rice CAZ		

**Giant Garter Snake**

**Goal GGSN1:** Maintain or increase the abundance and distribution of giant garter snake.

**Objective GGSN1.1:** Maintain \_\_ acres of existing rice lands and associated water conveyance ditches in rice production distributed within the Planning Area as described in Table 16.

**Objective GGSN1.2:** Maintain \_\_ acres of existing irrigated croplands that support giant garter snake habitat in land cover types that support habitat distributed within the Planning Area as described in Table 16.

**Objective GGSN1.3:** Protect \_\_ acres of existing unprotected managed wetlands, emergent wetlands, and willow scrub that support giant garter snake habitat distributed within the Planning Area as described in Table 16.

**Objective GGSN1.4:** Maintain the connectivity of \_\_ linear miles of waterways that are currently connected to rice lands and patches of managed wetlands, emergent wetlands, willow scrub, and irrigated cropland that support giant garter snake habitat distributed within the Planning Area as described in Table 16.

**Objective GGSN1.5:** Restore \_\_ acres of managed wetlands, emergent wetlands, and willow scrub that support giant garter snake habitat within 8km of existing giant garter snake habitat distributed within the Planning Area as described in Table 16.

**Table 16. Giant Garter Snake Habitat Objectives by CAZ and UPA**

CAZ/UPA	Maintained Rice Land Habitat (acres)	Irrigated Croplands Maintained as Habitat <sup>1</sup> (acres)	Protected Wetland and Willow Scrub Habitat (acres)	Protected Waterways (linear miles)	Restored and Enhanced Habitat (acres)
Northern Orchards CAZ					
Northern Cascade CAZ					
Southern Cascade CAZ					
Sacramento River CAZ					
Northern Rice CAZ					
Southern Sierra CAZ					
Thermalito CAZ					
Southern Orchards CAZ					
Gridley-Biggs UPA					
Southern Rice CAZ					

<sup>1</sup>Maintained irrigated croplands include irrigated croplands that may be converted to other land cover types that support giant garter snake habitat under the HCP/NCCP.

**California Horned Lizard**

**Goal HOLI1:** Maintain or increase the abundance and distribution of California horned lizard.

**Objective HOLI1.1:** Protect \_\_ acres of existing unprotected grassland, oak woodland and savanna, and riparian habitats that could support California horned lizard habitat distributed within the Planning Area as described in Table 17.

**Table 17. California Horned Lizard Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat
Northern Cascade CAZ	
Southern Cascade CAZ	
Northern Sierra CAZ	
Oroville UPA	
Southern Sierra CAZ	

**Northwestern Pond Turtle**

**Goal WPTU1:** Maintain or increase the abundance and distribution of northwestern pond turtle.

**Objective WPTU1.1:** Protect \_\_ linear miles of perennial stream and adjacent upland nesting habitat extending 500 m from the streams distributed within the Planning Area as described in Table 18.

**Objective WPTU1.2:** Preserve the existing functions and uses of \_\_ stock ponds that support habitat and adjacent upland nesting habitat extending 500 m from the ponds distributed within the Planning Area as described in Table 18.

**Objective WPTU1.3:** Protect \_\_ acres of existing unprotected managed wetland and emergent wetland habitat distributed within the Planning Area as described in Table 18.

**Objective WPTU1.4:** Restore \_\_ acres of riparian and emergent wetland habitat adjacent to existing aquatic western pond turtle habitat areas distributed within the Planning Area as described in Table 18.

**Table 18. Northwestern Pond Turtle Habitat Objectives by CAZ and UPA**

CAZ/UPA	Protected Stream and Adjacent Upland Habitat (linear miles)	Preserved Stock Pond and Adjacent Upland Habitat (acres)	Protected Managed Wetland and Emergent Wetland (acres)	Restored Habitat (acres)
Northern Orchards CAZ				
Northern Cascade CAZ				
Southern Cascade CAZ				
Sacramento River CAZ				
Northern Rice CAZ				
Northern Sierra CAZ				
Thermalito CAZ				
Oroville UPA				
Southern Sierra CAZ				
Southern Orchards CAZ				
Gridley-Biggs UPA				
Southern Rice CAZ				

**Western Spadefoot**

**Goal WESP1:** Maintain or increase the abundance and distribution of western spadefoot.

**Objective WESP1.1:** Protect 85 percent of western spadefoot habitat within the portion of the Northeast Sacramento vernal pool region present within the Planning Area, as per Recovery Plan (USFWS 2005).<sup>1</sup>

**Objective WESP1.2:** Protect \_\_ acres of existing unprotected western spadefoot breeding habitat and adjacent upland habitat outside of core recovery areas distributed within the Planning Area as described in Table 19.

**Objective WESP1.3:** Restore or enhance \_\_ acres of breeding habitat within recovery core areas distributed within the Planning Area as described in Table 19.

**Objective WESP1.4:** Restore or enhance \_\_ acres of breeding habitat outside of recovery core areas distributed within the Planning Area as described in Table 19.

<sup>1</sup> From the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005).

**Table 19. Western Spadefoot Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ <sup>1</sup>		
Northern Cascade CAZ <sup>1</sup>		
Southern Cascade CAZ <sup>1</sup>		
Sacramento River CAZ		
Northern Rice CAZ <sup>1</sup>		
Northern Sierra CAZ <sup>1</sup>		
Thermalito CAZ <sup>1</sup>		
Oroville UPA		
Southern Sierra CAZ		
Southern Orchards CAZ		
<sup>1</sup> Includes habitat protected within recovery core areas.		

**California Red-Legged Frog**

**Goal RLFR1:** Maintain existing and restore additional California red-legged frog habitat necessary to provide habitat in the event of re-establishment of breeding populations within the Planning Area.

**Objective RLFR1.1:** Protect the existing habitat function of stock ponds located within protected lands.

**Objective RLFR1.2:** Preserve a \_\_\_ -foot buffer of native vegetation on each side of drainages within protected lands of the preserve system that are connected to ponds and drainages that support California red-legged frogs.

**Objective RLFR1.3:** Where artificial breaks occur in riparian corridors, restore riparian and emergent vegetation along drainages connected to ponds and drainages within protected lands of the preserve system.

**Goal RLFR2:** Should breeding occurrences of California red-legged frogs become established within the Planning Area, maintain or increase their abundance and distribution within protected lands.

**Objective RLFR2.1:** Bring under protection and enhance habitat areas within the Planning Area that are found to support breeding populations of California red-legged frog in the future.

**Foothill Yellow-Legged Frog**

**Goal YLFR1:** Maintain or increase the abundance and distribution of foothill yellow-legged frog.

**Objective YLFR1.1:** Protect \_\_ acres of existing unprotected foothill yellow-legged frog stream and adjacent upland habitat distributed within the Planning Area as described in Table 20.

**Objective YLFR1.2:** Restore riparian and emergent vegetation where appropriate along \_\_ linear miles of foothill yellow-legged frog habitat distributed within the Planning Area as described in Table 20.

**Objective YLFR1.3:** Reduce the loads of toxic contaminants in aquatic foothill yellow-legged frog habitats.

**Table 20. Foothill Yellow-Legged Frog Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Cascade CAZ <sup>1</sup>		
Southern Cascade CAZ <sup>2</sup>		
Northern Sierra CAZ		
Oroville UPA		
Southern Sierra CAZ		

**Sacramento Splittail**

**Goal SASP1:** Maintain or increase the abundance and distribution of Sacramento splittail.

**Objective SASP1.1:** Protect \_\_ acres of undeveloped floodplain and channel margin spawning and rearing habitat that is hydrologically connected to the Sacramento and Feather Rivers.

**Objective SASP1.2:** Increase the habitat and hydrodynamic complexity of channel margin and floodplain habitats along the Feather River.

**Objective SASP1.3.** Restore \_\_ acres of Sacramento splittail spawning and rearing habitat along the Feather River by creating low flow channels, lowering floodplain surfaces to increase the frequency and duration of floodplain inundation, improving the quality of river edge/channel margins, and creating backwaters.

**Central Valley Steelhead**

**Goal CVST1:** Maintain or increase the abundance and distribution of Central Valley steelhead.

**Objective CVST1.1:** Protect \_\_ acres of undeveloped floodplain rearing habitat that is hydrologically connected to steelhead streams.

**Objective CVST1.2:** Improve water temperatures by increasing overhead and instream cover conditions and increasing the habitat and hydrodynamic complexity of channel margin and floodplain habitats along \_\_ miles of steelhead-occupied streams.

**Objective CVST1.3:** Increase the supply of spawning gravels recruited into creeks supporting steelhead runs.

**Objective CVST1.4:** Remove or modify barriers to passage to improve access to upstream spawning and rearing habitats and improve downstream passage from spawning and rearing habitats.

**Objective CVST1.5:** Remove, modify, or screen diversions on streams supporting steelhead runs to reduce the risk for entrainment of steelhead young.

**Objective CVST1.6:** Support implementation of existing programs to restore Chinook salmon habitat along rivers and creeks within the Planning Area.

**Objective CVST1.7:** Reduce the loads of toxic contaminants in steelhead-occupied streams.

### **Central Valley Spring Run Chinook Salmon**

**Goal SRCH1:** Maintain or increase the abundance and distribution of Central Valley spring run Chinook salmon.

**Objective SRCH1.1:** Protect \_\_ acres of undeveloped floodplain rearing habitat that is hydrologically connected to Chinook salmon streams.

**Objective SRCH1.2:** Improve water temperatures by increasing overhead and instream cover conditions, and increasing the habitat and hydrodynamic complexity of channel margin and floodplain habitats along \_\_ miles of Chinook salmon streams.

**Objective SRCH1.3:** Increase the supply of spawning gravels recruited into creeks supporting salmon runs.

**Objective SRCH1.4:** Remove or modify barriers to passage to improve access to upstream spawning and rearing habitats and improve downstream passage from spawning and rearing habitats.

**Objective SRCH1.5:** Remove, modify, or screen diversions on streams supporting salmon runs to reduce the risk for entrainment of juvenile Chinook salmon.

**Objective SRCH1.6:** Support implementation of existing programs to restore Chinook salmon habitat along rivers and creeks within the Planning Area.

**Objective SRCH1.7:** Reduce the loads of toxic contaminants in Chinook salmon streams.

### **Sacramento River Winter Run Chinook Salmon**

**Goal WRCH1:** Maintain or increase the abundance and distribution of Sacramento River winter run Chinook salmon.

**Objective WRCH1.1:** Support implementation of existing programs to restore Chinook salmon habitat along the Sacramento River.

### **Central Valley Fall/Late-Fall Run Chinook Salmon**

**Goal FRCH1:** Maintain or increase the abundance and distribution of Central Valley fall/late-fall run Chinook salmon.

**Objective FRCH1.1:** Protect \_\_ acres of undeveloped floodplain rearing habitat that is hydrologically connected to Chinook salmon streams.

**Objective FRCH1.2:** Improve water temperatures by increasing overhead and instream cover conditions, and increasing the habitat and hydrodynamic complexity of channel margin and floodplain habitats along \_\_ miles of Chinook salmon streams.

**Objective FRCH1.3:** Increase the supply of spawning gravels recruited into creeks supporting salmon runs.

**Objective FRCH1.4:** Remove or modify barriers to passage to improve access to upstream spawning and rearing habitats and improve downstream passage from spawning and rearing habitats.

**Objective FRCH1.5:** Remove, modify, or screen diversions to reduce the risk for entrainment of Chinook salmon.

**Objective FRCH1.6:** Support implementation of existing programs to restore Chinook salmon habitat along rivers and creeks within the Planning Area.

**Objective FRCH1.7:** Reduce the loads of toxic contaminants in Chinook salmon streams.

### **Green Sturgeon**

**Goal GRST1:** Maintain or increase the abundance and distribution of green sturgeon.

**Objective GRST1.1:** Improve water temperatures by increasing overhead and instream cover conditions and increasing the habitat and hydrodynamic complexity of channel margin and floodplain habitats along \_\_ miles of the Feather River.

**Objective GRST1.2:** Remove or modify diversions to reduce the risk for entrainment of juvenile green sturgeon.

**Objective GRST3:** Reduce the loads of contaminants in the Feather River that are toxic to green sturgeon.

### **River Lamprey**

**Goal:** Maintain or increase the abundance and distribution of river lamprey.

**Objective RILA1:** Improve water temperatures by increasing instream cover conditions and increasing the habitat and hydrodynamic complexity of channel margin habitats along \_\_ miles of the Feather River.

**Objective RILA2:** Increase the supply of spawning gravels recruited into the Feather River.

**Objective RILA3:** Remove or modify diversions to reduce the risk for entrainment of river lamprey.

**Objective RILA4:** Support implementation of existing programs to restore anadromous fish habitats along the Sacramento River.

### **Valley Elderberry Longhorn Beetle**

**Goal:** Maintain or increase the abundance and distribution of valley elderberry longhorn beetle.

**Objective VELB1:** Protect \_\_ acres of existing unprotected valley elderberry longhorn beetle habitat distributed within the Planning Area as described in Table 21.

**Objective VELB2:** Restore \_\_ acres of valley elderberry longhorn beetle habitat distributed within the Planning Area as described in Table 21.

**Table 21. Valley Elderberry Longhorn Beetle Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ		
Northern Cascade CAZ		
Southern Cascade CAZ		
Sacramento River CAZ		
Northern Rice CAZ		
Northern Sierra CAZ		
Oroville UPA		
Thermalito CAZ		
Southern Sierra CAZ		
Southern Orchards CAZ		
Southern Rice CAZ		

**Conservancy Fairy Shrimp**

**Goal:** Contribute to the recovery of conservancy fairy shrimp.

**Objective CFSH1:** Protect 95 percent of conservancy fairy shrimp habitat present within the Vina Plains recovery core area, as per Recovery Plan (USFWS 2005).<sup>2</sup>

**Objective CFSH2:** Protect \_\_ acres of occupied conservancy fairy shrimp habitat outside of the Vina Plains recovery core area distributed within the Planning Area as described in Table 22.

**Objective CFSH3:** Restore or enhance \_\_ acres of vernal pool tadpole shrimp habitat within recovery core areas distributed within the Planning Area as described in Table 22.

**Objective CFSH4:** Restore or enhance \_\_ acres of vernal pool tadpole shrimp habitat outside of recovery core areas distributed within the Planning Area as described in Table 22.

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<sup>2</sup> From the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005).

**Table 22. Conservancy Fairy Shrimp Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ <sup>1</sup>		
Northern Cascade CAZ <sup>1</sup>		
Southern Cascade CAZ		
Northern Rice CAZ		
Northern Sierra CAZ		
Thermalito CAZ <sup>1</sup>		
Oroville UPA		
Southern Sierra CAZ		
Southern Orchards CAZ		

<sup>1</sup>Includes habitat protected within recovery core areas.

**Vernal Pool Fairy Shrimp**

**Goal:** Contribute to the recovery of vernal pool fairy shrimp.

**Objective VPFS1:** Protect 85 percent of vernal pool fairy shrimp habitat present within each of the following recovery core areas: Chico, Oroville, Vina Plains, and Doe Mill, as per Recovery Plan (USFWS 2005).<sup>3</sup>

**Objective VPFS2:** Protect \_\_ acres of occupied vernal pool fairy shrimp habitat outside of recovery core areas distributed within the Planning Area as described in Table 23.

**Objective VPFS3:** Restore or enhance \_\_ acres of vernal pool tadpole shrimp habitat within recovery core areas distributed within the Planning Area as described in Table 23.

**Objective VPFS4:** Restore or enhance \_\_ acres of vernal pool tadpole shrimp habitat outside of recovery core areas distributed within the Planning Area as described in Table 23.

<sup>3</sup> From the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005).

**Table 23. Vernal Pool Fairy Shrimp Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ <sup>1</sup>		
Northern Cascade CAZ <sup>1</sup>		
Southern Cascade CAZ <sup>1</sup>		
Northern Rice CAZ <sup>1</sup>		
Northern Sierra CAZ <sup>1</sup>		
Thermalito CAZ <sup>1</sup>		
Oroville UPA		
Southern Sierra CAZ		
Southern Orchards CAZ		

<sup>1</sup>Includes habitat protected within recovery core areas.

**Vernal Pool Tadpole Shrimp**

**Goal:** Contribute to the recovery of vernal pool tadpole shrimp.

**Objective VP1S1:** Protect 85 percent of vernal pool tadpole shrimp habitat present within the Doe Mill recovery core area and 95% present within each of the following recovery core areas: Chico, Oroville, and Vina Plains, as per Recovery Plan (USFWS 2005).<sup>4</sup>

**Objective VP1S2:** Protect \_\_ acres of occupied vernal pool tadpole shrimp habitat outside of recovery core areas distributed within the Planning Area as described in Table 24.

**Objective VP1S3:** Restore or enhance \_\_ acres of vernal pool tadpole shrimp habitat within recovery core areas distributed within the Planning Area as described in Table 24.

**Objective VP1S4:** Restore or enhance \_\_ acres of vernal pool tadpole shrimp habitat outside of recovery core areas distributed within the Planning Area as described in Table 24.

<sup>4</sup> From the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005).

**Table 24. Vernal Pool Tadpole Shrimp Habitat Objectives by CAZ and UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ <sup>1</sup>		
Northern Cascade CAZ <sup>1</sup>		
Southern Cascade CAZ <sup>1</sup>		
Northern Rice CAZ		
Northern Sierra CAZ		
Thermalito CAZ		
Oroville UPA		
Southern Sierra CAZ		
Southern Orchards CAZ		
<sup>1</sup> Includes habitat protected within recovery core areas.		

### Species-Level Goals and Objective: Plants

#### Butte County Meadowfoam

**Goal BCME1:** Maintain or increase the size and number of occurrences of Butte County meadowfoam within the planning area; meet or exceed conservation goals set forth in the Vernal Pool Recovery Plan (USFWS 2005).

**Objective BCME1.1:** Protect 100% of extant occurrences of Butte County meadowfoam in the planning area, as per Recovery Plan (USFWS 2005). Protect \_\_\_% of any additional occurrences of Butte County meadowfoam that are located in the future.

**Objective BCME1.2:** Protect 95% of suitable species habitat within each of the Chico, Doe Mill, Vina Plains, and Oroville Recovery Areas, as per Recovery Plan (USFWS 2005). Preserve a total of \_\_\_ acres of Butte County meadowfoam core habitat distributed within the planning area as indicated in Table 25.

**Objective BCME1.3:** Restore/enhance a total of \_\_\_ acres of Butte County meadowfoam habitat distributed within the planning area as indicated in Table X.

**Objective BCME1.4:** Manage adaptively to maintain habitat function. (see Recovery Plan for specific adaptive management, restoration, and creation guidance)

**Research BCME1.1:** [To Come].

**Table 25. Butte County Meadowfoam Objectives by CAZ/UPA**

CAZ/UPA	Protected Know Occurrences	Protected Core Habitat (acres)	Restored Habitat (acres)
Northern Orchards			
Northern Cascade			
Southern Cascade			
Sacramento River			
Northern Rice CAZ			
Northern Sierra CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards			
Gridley-Biggs UPA			
Southern Rice CAZ			
Recovery core areas only.			

**Hoover’s Spurge**

**Goal HOSP1:** Maintain or increase the size and number of occurrences of Hoover’s spurge within the planning area; meet or exceed conservation goals set forth in the Vernal Pool Recovery Plan (USFWS 2005).

**Objective HOSP1.1:** Protect a total of 80% of the remaining known extant occurrences of Hoover’s spurge that are currently unprotected, as per Recovery Plan (USFWS 2005). These will be distributed within the planning area as indicated in Table 26. Protect a total of \_\_\_% of any additional occurrences of Hoover’s spurge that are located in the future.

**Objective HOSP1.2:** Protect 95% of suitable habitat within the Oroville and Vina Plains Recovery Areas, as per Recovery Plan (USFWS 2005). Preserve a total of \_\_\_ acres of Hoover’s spurge habitat distributed within the planning area as indicated in Table 26.

**Objective HOSP1.3:** Restore/enhance a total of \_\_\_ acres of Hoover’s spurge habitat distributed within the planning area as indicated in Table 26.

**Objective HOSP1.4:** Reintroduce Hoover’s spurge to extant vernal pools and soil types from which surveys indicate that the species has been extirpated, as per Recovery Plan (USFWS 2005).

**Objective HOSP1.5:** Manage adaptively to maintain habitat function. (see Recovery Plan for specific adaptive management, restoration, and creation guidance)

**Research HOSP1.1:** Very little is known about pollinators of Hoover’s spurge (USFWS 2005) but pollinator decline is thought to contribute to the plant’s decline. Conduct targeted studies to determine kinds and roles of pollinators of the plant.

**Research HOSP1.2:** Conduct targeted studies to determine factors limiting the expansion of Hoover’s spurge including investigation of the role of grazing and competition with non-native annual grasses.

**Table 26. Hoover’s Spurge Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protected Habitat	Restored Habitat
Northern Orchards CAZ		
Northern Cascade CAZ <sup>1</sup>		
Southern Cascade CAZ <sup>1</sup>		
Sacramento River CAZ		
Northern Rice CAZ		
Northern Sierra CAZ		
Oroville UPA		
Southern Sierra CAZ		
Southern Orchards CAZ		
Gridley-Biggs UPA		
Southern Rice CAZ		
<sup>1</sup> Recovery core areas only.		

**Greene’s Tuctoria**

**Goal GRTU1:** Maintain or increase the size and number of occurrences of Greene’s tuctoria within the planning area; meet or exceed conservation goals set forth in the Vernal Pool Recovery Plan (USFWS 2005).

**Objective GRTU1.1:** Protect a total of 80% of the remaining known extant occurrences of Greene’s tuctoria that are currently unprotected, as per Recovery Plan (USFWS 2005). These will be distributed within the planning area as indicated in Table 27. Protect a total of \_\_\_% of any additional occurrences of Greene’s tuctoria that are located in the future.

**Objective GRTU1.2:** Protect 95% of suitable species habitat within the Oroville and Vina Plains Recovery Areas and 85% of suitable species habitat within the Richvale Recovery Area, as per Recovery Plan (USFWS 2005). Preserve a total of \_\_\_ acres of Greene’s tuctoria habitat distributed within the planning area as indicated in Table 27.

**Objective GRTU1.3:** Restore/enhance a total of \_\_ acres of Greene’s tuctoria habitat distributed within the planning area as indicated in Table 27.

**Objective GRTU1.4:** Manage adaptively to maintain habitat function. (see Recovery Plan for specific adaptive management, restoration, and creation guidance)

**Research GRTU1.1:** [To Come].

**Table 27. Greene’s Tuctoria Objectives by CAZ/UPA**

CAZ/UPA	Protected Know Occurrences	Protected Habitat (acres)	Restored Habitat (acres)
Northern Orchards			
Northern Cascade			
Southern Cascade			
Sacramento River			
Northern Rice CAZ			
Northern Sierra CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards			
Gridley-Biggs UPA			
Southern Rice CAZ			
<sup>1</sup> Recovery core areas only.			

**Hairy Orcutt Grass**

**Goal HOGRI1:** Maintain or increase the size and number of occurrences of hairy Orcutt grass within the planning area; meet or exceed conservation goals set forth in the Vernal Pool Recovery Plan (USFWS 2005).

**Objective HOGRI1.1:** Protect the single known extant occurrences of hairy Orcutt grass in the planning area, as per Recovery Plan (USFWS 2005). This occurrence is within the Southern Cascade CAZ. Protect \_\_% of any additional occurrences of hairy Orcutt grass that are located in the future.

**Objective HOGRI1.2:** Protect 95% of suitable species habitat within the Oroville and Vina Plains Recovery Areas, as per Recovery Plan (USFWS 2005). Preserve a total of \_\_ acres of hairy Orcutt grass habitat distributed within the planning area as indicated in Table 27.

**Objective HOGRI.3:** Restore/enhance a total of \_\_ acres of hairy Orcutt grass habitat distributed within the planning area as indicated in Table 27.

**Objective HOGRI.4:** Manage adaptively to maintain habitat function. (see Recovery Plan for specific adaptive management, restoration, and creation guidance)

**Research HOGRI.1:** [To Come].

**Table 27. Hairy Orcutt Grass Objectives by CAZ/UPA**

CAZ/UPA	Protected Know Occurrences	Protected Habitat (acres)	Restored Habitat (acres)
Northern Orchards			
Northern Cascade			
Southern Cascade			
Sacramento River			
Northern Rice CAZ			
Northern Sierra CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards			
Gridley-Biggs UPA			
Southern Rice CAZ			
<sup>1</sup> Recovery core areas only.			

**Slender Orcutt Grass**

**Goal SOGR1:** Maintain or increase the size and number of occurrences of slender Orcutt grass within the planning area; meet or exceed conservation goals set forth in the Vernal Pool Recovery Plan (USFWS 2005).

**Objective SOGR1.1:** Protect 80% of known extant occurrences of slender Orcutt grass in the planning area, as per Recovery Plan (USFWS 2005). These will be distributed within the planning area as indicated in Table 28. Protect \_\_% of any additional occurrences of hairy Orcutt grass that are located in the future.

**Objective SOGR1.2:** Protect 95% of suitable species habitat within the Vina Plains Recovery Area and 85% of suitable species habitat in the Palermo Recovery Area, as per Recovery Plan (USFWS 2005). Preserve a total of \_\_ acres of slender Orcutt grass habitat distributed within the planning area as indicated in Table 28.

**Objective SOGR1.3:** Restore/enhance a total of \_\_ acres of slender Orcutt grass habitat distributed within the planning area as indicated in Table 28.

**Objective SOGR1.4:** Reintroduce slender Orcutt grass to extant vernal pools and soil types from which surveys indicate that the species has been extirpated, as per Recovery Plan (USFWS 2005).

**Objective SOGR1.5:** Manage adaptively to maintain habitat function. (see Recovery Plan for specific adaptive management, restoration, and creation guidance)

**Research SOGR1.1:** [To Come].

**Table 28. Slender Orcutt Grass Objectives by CAZ/UPA**

CAZ/UPA	Protected Know Occurrences	Protected Habitat (acres)	Restored Habitat (acres)
Northern Orchards			
Northern Cascade			
Southern Cascade			
Sacramento River			
Northern Rice CAZ			
Northern Sierra CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards			
Gridley-Biggs UPA			
Southern Rice CAZ			
<sup>1</sup> Recovery core areas only.			

**Butte County Checkerbloom**

**Goal BCCH1:** Maintain or increase the size and number of occurrences of Butte County checkerbloom within the planning area.

**Objective BCCH1.1:** Protect \_\_ % of the remaining known extant occurrences of Butte County checkerbloom that are currently unprotected. These will be distributed within the planning area as indicated in Table 29. Protect \_\_ % of any additional occurrences that are located in the future of Butte County checkerbloom that are currently unprotected.

**Objective BCCH1.2:** Preserve a total of \_\_ acres of Butte County checkerbloom habitat distributed within the planning area as indicated in Table 29.

**Objective BCCH1.3:** Manage adaptively to maintain habitat function.

**Research BCCH1.1:** Conduct targeted studies to determine factors limiting seed output including the degree to which the plant is pollinator- or seed predator-limited (Hantelman 2004).

**Research BCCH1.2:** Conduct targeted studies to determine factors limiting the expansion of populations including the role of grazing and competition with non-native annual grasses (Hantelman (2004).

**Table 29. Butte County Checkerbloom Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protect Known Occurrences	Protect Unoccupied Habitat	Restore Habitat	Enhance Habitat
Northern Cascades CAZ				
Southern Cascades CAZ				
Chico UPA				

**Ahart’s Dwarf Rush**

**Goal ADRU1:** Maintain or increase the size and number of occurrences of Ahart’s dwarf rush within the planning area; meet or exceed conservation goals set forth in the Vernal Pool Recovery Plan (USFWS 2005).

**Objective ADRU1.1:** Protect 100% of the remaining known extant occurrences of Ahart’s dwarf rush that are currently unprotected, as per Recovery Plan (USFWS 2005). Protect \_\_ % of any additional occurrences that are located in the future of Ahart’s dwarf rush that are currently unprotected.

**Objective ADRU1.2:** Protect 85% of suitable species habitat within the Honcut Core Recovery Area, as per the Recovery Plan (USFWS 2005). Preserve a total of \_\_ acres of Ahart’s dwarf rush habitat distributed within the planning area as indicated in Table 30.

**Objective ADRU1.3:** Restore/enhance a total of \_\_ acres of Ahart’s dwarf rush habitat distributed within the planning area as indicated in Table 30.

**Objective ADRU1.4:** Manage adaptively to maintain habitat function. (see Recovery Plan for specific adaptive management, restoration, and creation guidance)

**Research ADRU1.1:** Very little is known about pollinators of Ahart’s dwarf rush (USFWS 2005) but pollinator decline is thought to contribute to the plant’s decline. Conduct targeted studies to determine kinds and roles of pollinators of the plant.

**Research ADRU1.2:** Conduct targeted studies to determine factors limiting the expansion of Ahart’s dwarf rush including investigation of the role of grazing and competition with non-native annual grasses.

**Table 30. Ahart’s Dwarf Rush Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protect Known Occurrences	Protect Habitat	Restore/Enhance Occurrence/Habitat
Northern Orchards CAZ			
Northern Cascade CAZ			
Southern Cascade CAZ			
Northern Rice CAZ			
Northern Sierra CAZ			
Oroville UPA			
Southern Sierra CAZ			
Southern Orchards CAZ			
Gridley-Biggs UPA			
<sup>1</sup> Recovery core areas only.			

**Ferris’ Milkvetch**

**Goal FEMI1:** Maintain or increase the size and number of occurrences of Ferris’ Milkvetch within the planning area; meet or exceed conservation goals set forth in the Vernal Pool Recovery Plan (USFWS 2005).

**Objective FEMI1.1:** Protect a total of 100% of the remaining known extant occurrences of Ferris’ Milkvetch that are currently unprotected within the planning area, as per Recovery Plan (USFWS 2005). Protect a total of \_\_\_% of any future occurrences of Ferris’ Milkvetch.

**Objective FEMI1.2:** Preserve 95% of Ferris’ Milkvetch habitat within the Llano Seco and Upper Butte Basin Recovery Areas, as per Recovery Plan (USFWS 2005). Preserve a total of \_\_ acres of Ferris’ Milkvetch habitat distributed within the planning area as indicated in Table 31.

**Objective FEMI1.3:** Enhance a total of \_\_ acres of Ferris’ Milkvetch habitat distributed within the planning area as indicated in Table 31.

**Objective FEMI1.4:** Manage adaptively to maintain habitat functions.

**Table 31. Ferris' Milkvetch Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protect Occurrences	Protect Unoccupied Habitat	Enhance Habitat
Northern Orchards CAZ			
Sacramento River CAZ			
Southern Rice CAZ			

**Veiny Monardella**

**Goal VEMO1:** Maintain or increase the size and number of occurrences of veiny monardella within the planning area.

**Objective VEMO1.1:** Protect 100% of the remaining known extant occurrences veiny monardella that are currently unprotected within the planning area as indicated in Table X. Protect a total of \_\_ % of any future occurrences of veiny monardella within the planning area as indicated in Table 32.

**Objective VEMO1.2:** Preserve a total of \_\_ acres of veiny monardella habitat distributed within the planning area as indicated in Table 32.

**Objective VEMO1.3:** Enhance a total of \_\_ acres of veiny monardella habitat distributed within the planning area as indicated in Table 32.

**Objective VEMO1.4:** Manage adaptively to maintain habitat functions.

**Table 32. Veiny Monardella Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protected Occurrences	Protected Habitat	Enhanced Habitat
Southern Cascade CAZ			

**California Beaked-Rush**

**Goal CBRU1:** Maintain or increase the size and number of occurrences of California beaked-rush within the planning area.

**Objective CBRU1.1:** Protect a total of \_\_ % of the remaining known extant occurrences of California beaked-rush that are currently unprotected within the planning area as indicated in Table 33. Protect a total of \_\_ % of any future occurrences of California beaked-rush that are currently unprotected within the planning area.

**Objective CBRU1.2:** Preserve a total of \_\_ acres of California beaked-rush habitat distributed within the planning area as indicated in Table 33.

**Objective CBRU1.3:** Enhance a total of \_\_ acres of California beaked-rush habitat distributed within the planning area as indicated in Table 33.

**Objective CBRU1.4:** Manage adaptively to maintain habitat functions.

**Table 33. California Beaked-Rush Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protected Known Occurrences	Protected Habitat	Restored/Enhanced Occurrence/Habitat
Northern Cascade CAZ			
Southern Cascade CAZ			
City of Chico Sphere of Influence			

**Ahart’s Paronychia**

**Goal AHPA1:** Maintain or increase the size and number of occurrences of Ahart’s paronychia within the planning area.

**Objective AHPA1.1:** Protect \_\_% of the remaining known extant occurrences of Ahart’s paronychia that are currently unprotected within the planning area as indicated in Table 34. Protect a total of \_\_% of any future occurrences of Ahart’s paronychia that are currently unprotected within the planning area.

**Objective AHPA1.2:** Preserve a total of \_\_ acres of Ahart’s paronychia habitat distributed within the planning area as indicated in Table 34.

**Objective AHPA1.3:** Enhance a total of \_\_ acres of Ahart’s paronychia habitat distributed within the planning area as indicated in Table 34.

**Objective AHPA1.4:** Manage adaptively to maintain habitat functions.

**Table 34. Ahart’s Paronychia Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protected Known Occurrences	Protected Habitat	Restored/Enhanced Occurrence/Habitat
Northern Cascade CAZ			
City of Chico Sphere of Influence			
Thermalito CAZ			
Oroville UPA			
Southern Sierra CAZ			

**Lesser Saltscale**

**Goal LESA1:** Maintain or increase the size and number of occurrences of lesser saltscale within the planning area.

**Objective LESA1.1:** Protect \_\_\_% of the remaining known extant occurrences of lesser saltscale that are currently unprotected within the planning area as indicated in Table 35 [*Note: assumption at this time is that all occurrences are protected at Gray Lodge Wildlife Area*]. Protect \_\_\_% of any future occurrences of lesser saltscale that are currently unprotected within the planning area.

**Objective LESA1.2:** Preserve a total of \_\_\_ acres of lesser saltscale habitat distributed within the planning area as indicated in Table 35.

**Objective LESA1.3:** Enhance a total of \_\_\_ acres of lesser saltscale habitat distributed within the planning area as indicated in Table 35.

**Objective LESA1.4:** Restore a total of \_\_\_ acres of lesser saltscale habitat distributed within the planning area as indicated in Table 35.

**Objective LESA1.5:** Manage adaptively to maintain habitat functions.

**Table 35. Lessor Saltscale Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protected Known Occurrences	Protected Habitat	Restored/Enhanced Habitat
Southern Rice CAZ			

**Butte County Golden Clover**

**Goal BCGC1:** Maintain or increase the size and number of occurrences of Butte County golden clover within the planning area.

**Objective BCGC1.1:** Protect \_\_\_% of the remaining known extant occurrences of Butte County golden clover that are currently unprotected within the planning area as indicated in Table 36. Protect \_\_\_% of any future occurrences of Butte County golden clover that are currently unprotected within the planning area.

**Objective BCGC1.2:** Preserve a total of \_\_\_ acres of Butte County golden clover habitat distributed within the planning area as indicated in Table 36.

**Objective BCGC1.3:** Manage adaptively to maintain habitat functions.

**Table 36. Butte County Golden Clover Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protected Known Occurrences	Protected Habitat
City of Chico Sphere of Influence		
Southern Cascade CAZ		
Thermalito CAZ		
Northern Sierra CAZ		
Northern Rice CAZ		

**Red Bluff Dwarf Rush**

**Goal RBDR1:** Maintain or increase the size and number of occurrences of Red Bluff dwarf rush within the planning area.

**Objective RBDR1.1:** Protect \_\_\_% of the remaining known extant occurrences of Red Bluff dwarf rush that are currently unprotected within the planning area as indicated in Table X. Protect \_\_\_% of any future occurrences of Red Bluff dwarf rush that are currently unprotected within the planning area.

**Objective RBDR1.2:** Preserve a total of \_\_\_ acres of Red Bluff dwarf rush habitat distributed within the planning area as indicated in Table 37.

**Objective RBDR1.3:** Restore/enhance a total of \_\_\_ acres of slender Orcutt grass habitat distributed within the planning area as indicated in Table 37.

**Objective RBDR1.4:** Manage adaptively to maintain habitat functions.

**Table 37. Red Bluff Dwarf Rush Objectives by CAZ/UPA (acres)**

CAZ/UPA	Protected Known Occurrences	Protected Habitat
Northern Orchards CAZ		
Northern Cascades CAZ		
City of Chico Sphere of Influence		
Southern Cascade CAZ		
Thermalito CAZ		
Oroville UPA		
Northern Sierra CAZ		
Southern Sierra CAZ		
Northern Rice CAZ		

## Avoidance and Minimization Measures

To come.

## Meeting Summary

Butte Regional HCP/NCCP  
Stakeholder Committee Meeting  
June 4, 2008, 11:00 a.m. to 3:00 p.m.  
BCAG Conference Room

### Stakeholder Committee Attendees

Jeff Mott (for Scott McNall) (CSU Chico/Citizens Advisor )	Phil Johnson (Altacal Audubon)
Richard Price (Butte County Ag. Commission)	Colleen Aguilar (BC Farm Bureau)
Virginia Getz (Ducks Unlimited)	Jeff Swindle (Caltrans)
Alexis Vertolli (for Pia Sevellius) (Butte Co. RCD)	Jason Bougie (Building Industry Association, Chico)
Ted Trimble (Western Canal Water Dist)	

### Resource Agencies Attendees

Jennifer Hogan (DGF)	Nina Bicknese (USFWS)
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### Steering Committee and Staff Attendees

Jane Dolan (BCAG/ Supervisor)	Paul Cylinder (SAIC)
Jon Clark (BCAG)	Jim Estep (SAIC) (Phone)
Chris Devine (BCAG)	Holly Wilson (SAIC)

### Interested Public Attendees

Jamison Watts (Northern Ca Regional Land Trust)	Nathan Key (NRCS)
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### Associated Documents/Handouts:

1. Agenda packet including Stakeholder Committee member list, Existing protected land categories, Conservation Strategy—Biological goals and objectives, Spatial requirements of cover species and planning species, and Meeting Notes from May 7, 2008
2. Additional Handout: Existing Protected Lands

3. Additional Handout: Biological Goals and Objectives for Remaining Non-Listed Plants
4. Additional Handout: Revised Draft: Conservation Preserve Design Spatial Criteria for Covered Reptiles, Amphibians, Fish, and Invertebrates

**Action Items and Key Recommendations:**

- SAIC will send out Power Point presentation
- Committee accepted the use of the 3 tiered categories for existing protected lands
- The next Stakeholder meeting will be held on Wednesday, July 9, 2008, 11:00 am-3:00 pm, at BCAG.

**Meeting Agenda:**

- Stakeholder Committee meeting attendance and protocol
- Existing protected land categories
- Conservation Strategy—Biological goals and objectives
- Spatial requirements of covered species and planning species
- Next newsletter content
- Update on General Plan process
- Meeting Notes from May 7, 2008
- Action Items and Next Meeting

**Stakeholder Committee meeting attendance and protocol:**

- Jane Dolan suggested Stakeholder committee members to speak with other members to encourage their attendance
- Members were reminded to get items to Chris Devine at least 10 days before meeting if they wanted them to be considered for the upcoming agenda

**Existing protected land categories:**

- Paul Cylinder presented handout and attachment to explain the different categories of protected lands. Discussed the levels (3 tiered approach) for Butte HCP/NCCP. Described the different land management/use categories, discussed whether or not these uses are compatible with ecological goals.
- Nathan Keys said easement holders identified as “RCD” are not RCD but rather NRCS and that these are permanent.
- Clarification of land uses/easements were discussed

- Jeff Mott said that Chico State has easement property, he will send Holly the map and information, especially on the Butte Creek preserve. These lands may not be in the planning area.
- Jamison Watts (NCRLT) said they have 13 easements and will send GIS data to SAIC to determine if any are not currently in the data base.
- Paul Cylinder clarified the definitions levels of protect categories on the flow chart. He discussed how these categories will be used with the development of conservation measures.

### **Conservation Strategy—Biological goals and objectives:**

- Paul Cylinder gave a short presentation – “Biological Goals and Objectives: Overview”. This summarized the 5-Point Policy of the Fish and Wildlife Service and National Marine Fisheries Service; explained biological goals, biological objectives, conservation measures, performance criteria, goals and objectives at each ecological scale. Ecological criteria contributed to the boundary determinations for the conservation acquisition zones (CAZ), but simple artificial boundaries (e.g., roads, property lines) were used to make for ease of plan implementation. Spatial requirements were described from the scientific literature to ensure that covered species habitat needs are addressed by the HCP/NCCP. The preliminary nature of biological goals and objectives presented was discussed along with the development, contributors, and style of the document.
- Discussion on how the general plans will be affected by species specifics, such as meadowfoam and giant garter snake, and how these species will be major drivers in developing the conservation strategy.
- There was a discussion on the role of the independent science advisors. They are an advisory group to the process. The Stakeholder and Steering Committees and the permit applicants (cities and County) will make the ultimate decision on species to be included in the HCP/NCCP and approaches to conservation.
- Discussion on ultimate requirements for the federal HCP vs. the California NCCP. HCP goals must meet a minimum of avoiding jeopardy and minimizing and mitigating impacts, while NCCP goals must meet a minimum of conserving species (i.e., contributing to recovery) and natural communities. The Stakeholder Committee can identify their own goals beyond these minimums, such as our addition of species of local concern. The Butte HCP/NCCP will be tailored to Butte’s specific situation.
- Discussion on the influence of the general plan process and how it affects the HCP/NCCP. Importance of general plan information to assess impacts on species and natural communities.
- Administrative drafts of the Conservation Strategy and Impact Analysis chapters are anticipated to be completed by fall.

- Discussion of conservation acquisition zones (CAZ) and urban permit areas (UPA) and how this geographic information will be used in the conservation strategy.
- Discussion of Biological Goals and Objectives. Comments included: Some objectives need to be more clearly measurable. Some objectives should provide more locational specificity. Discussion of the potential consequences of climate change and expected upslope movement of oak woodlands and how these affects might be addressed in the HCP/NCCP. Qualify oak regeneration as natural regeneration only. The “blanks” left in the objectives for specific acreage and percentage numbers will be determined as the conservation measures are developed and specific amounts can be quantified through the analytical process of developing the conservation strategy. Discussion of conservation measures and adaptive management and how they are developed.
- SAIC to bring revised Biological Goals and Objectives to next Stakeholder Committee meeting.

### **Spatial requirements of covered species and planning species:**

- Discussion of how spatial requirements of covered species and planning species were developed and how these will be used to help develop conservation measures. Insufficient time remained to fully discuss, so this item will be brought back at next meeting.

### **Next newsletter content:**

- Chris Devine discussed general content to be in July newsletter, asked for ideas, quotes, etc. Draft newsletter to be developed by next meeting.

### **Update On General Plan Processes:**

- Chris Devine presented information on the various General Plan updates and expected completion dates for draft land use maps

### **Meeting Notes from May 7, 2008:**

- Meeting notes from May 7, 2008 were accepted.

### **Upcoming Workshops/Meetings:**

- The next Stakeholder meeting will be held on Wednesday, July 9, 2008, 11:00 am to 3:00 pm, at BCAG.