

INTEGRATED BIRD HABITAT OBJECTIVES

Habitat objectives for each bird group were developed independently as part of the Plan revision process, yet the habitat needs of different bird groups frequently overlap. Meeting habitat objectives for one bird group may partially or wholly meet the needs of other bird groups. Identifying these areas of overlap increases the efficiency of all bird habitat conservation, and it points to the benefits of an integrated set of habitat objectives. The CVJV identified four conservation approaches that were associated with two or more bird groups and thus, were integrated when establishing habitat objectives: restoration of managed semi-permanent wetlands, restoration of managed seasonal wetlands, restoration of riparian habitat, and maintenance of existing winter-flooded rice and grain corn. Habitat objectives associated with wetland enhancement and with agricultural easements in the grassland and oak savannah habitats were not subject to the process of integration, as they were only associated with a single bird group. Nevertheless, these latter objectives are included when summarizing the integrated habitat objectives for each planning unit and for the Central Valley as a whole.

One complicating factor that the CVJV is trying to reconcile is the importance of grassland or other upland habitat, such as beneficial agriculture, associated with managed semi-permanent wetlands. Many waterfowl build nests in upland habitat. Therefore, semi-permanent wetlands without associated uplands will likely not contribute to achieving breeding waterfowl objectives and may possibly complicate recovery of breeding duck numbers. The relationship of life cycle requirements and different habitats can be complex for some species. This complication demonstrates not only the importance of key habitat types, but also the importance of proximity of different habitat types to each other for life stages such as nesting (upland) and brood-rearing (wetland).

The CVJV used the following process to integrate bird needs for each of the four conservation approaches. First, all bird groups associated with a given habitat objective were identified. For example, objectives for managed semi-permanent wetlands were established for breeding waterfowl, breeding shorebirds, non-breeding shorebirds and breeding waterbirds. Second, the bird group with the largest acre objective served as the integrated objective. For example, the objective for semi-permanent wetlands in the Sacramento planning region ranges from a high of 9,420 acres for breeding waterfowl, to just 228 acres for breeding waterbirds (see

Tables 3.9 and 3.12). Thus, the managed semi-permanent wetland objective associated with breeding waterfowl was adopted as the integrated objective for this planning region, since meeting this objective would presumably satisfy the need of all bird groups. Integrated habitat objectives for the Central Valley as a whole and for each planning region are presented in Tables 3.1 through 3.6.

CENTRAL VALLEY-WIDE HABITAT OBJECTIVES BY HABITAT TYPE

HABITAT	OBJECTIVE (ACRES)
Managed Semi-Permanent Wetlands	34,368
Managed Seasonal Wetlands	20,004
Riparian Habitat	33,332
Winter-Flooded Rice ^a	340,670
Grassland ^b	10,337
Oak Savannah	8,483
Wetland Enhancement ^c	17,963
Agricultural Easements	54,000

^a Annual objective reflects the CVJV's desire to maintain the existing amount of winter-flooded rice (see Non-Breeding Waterfowl chapter).

^b Acre objective is for the Secondary Focus Area. Objective for Primary Focus Area is to maintain existing grassland habitat (see Breeding Grassland-Oak Savannah Landbirds chapter).

^c Annual wetland enhancement objective when wetland restoration objectives are met. This objective assumes that the infrastructure of managed seasonal wetlands requires some form of maintenance, on average, every 12 years.

TABLE 3.1 Integrated habitat objectives for the Central Valley as a whole.

HABITAT OBJECTIVE	ACRES
Managed Semi-Permanent Wetlands	9,420
Managed Seasonal Wetlands	6,875
Riparian Habitat	8,377
Winter-Flooded Rice ^a	324,847
Wetland Enhancement ^b	6,256
Agricultural Easements (Rice)	54,000

^a Annual objective reflects the CVJV's desire to maintain the existing amount of winter-flooded rice (see Non-Breeding Waterfowl chapter).

^b Annual wetland enhancement objective when wetland restoration objectives are met. This objective assumes that the infrastructure of managed seasonal wetlands requires some form of maintenance, on average, every 12 years.

TABLE 3.2 Integrated habitat objectives for the Sacramento planning region.

HABITAT OBJECTIVE	ACRES
Managed Semi-Permanent Wetlands	7,160
Managed Seasonal Wetlands	4,500
Riparian Habitat	5,906
Winter-Flooded Rice ^a	15,823
Wetland Enhancement ^b	2,196

^a Annual objective reflects the CVJV's desire to maintain the existing amount of winter-flooded rice (see Non-Breeding Waterfowl chapter).

^b Annual wetland enhancement objective when wetland restoration objectives are met. This objective assumes that the infrastructure of managed seasonal wetlands requires some form of maintenance, on average, every 12 years.

TABLE 3.3 Integrated habitat objectives for the Yolo-Delta planning region.

HABITAT OBJECTIVE	ACRES
Managed Semi-Permanent Wetlands	1,355
Riparian Habitat	1,408
Wetland Enhancement ^a	2,386

^a Annual wetland enhancement objective when wetland restoration objectives are met. This objective assumes that the infrastructure of managed seasonal wetlands requires some form of maintenance, on average, every 12 years.

TABLE 3.4 Integrated habitat objectives for the Suisun planning region.

HABITAT OBJECTIVE	ACRES
Managed Semi-Permanent Wetlands	9,378
Managed Seasonal Wetlands	5,837
Riparian Habitat	8,368
Wetland Enhancement ^a	5,330

^a Annual wetland enhancement objective when wetland restoration objectives are met. This objective assumes that the infrastructure of managed seasonal wetlands requires some form of maintenance, on average, every 12 years.

TABLE 3.5 Integrated habitat objectives for the San Joaquin planning region.

HABITAT OBJECTIVE	ACRES
Managed Semi-Permanent Wetlands	7,055
Managed Seasonal Wetlands	2,792
Riparian Habitat	9,273
Wetland Enhancement ^a	1,795

^a Annual wetland enhancement objective when wetland restoration objectives are met. This objective assumes that the infrastructure of managed seasonal wetlands requires some form of maintenance, on average, every 12 years.

TABLE 3.6 Integrated habitat objectives for the Tulare planning region.



Protected waterfowl habitat in Suisun Marsh – Robert Eddings

HABITAT OBJECTIVES BY BIRD GROUP

The integrated habitat objectives were derived from habitat objectives established for each bird group. These habitat objectives were established by planning region (Table 3.7) with the exception of non-breeding shorebirds and breeding grassland-oak savannah landbirds, for which objectives are established for the Central Valley as a whole. The Plan establishes long-term objectives for a 100-year period for all non-waterfowl bird groups, representing the ultimate conditions necessary to sustain bird populations. Short-term objectives that correspond to the 10-year life of the Plan are also established. These short-term objectives correspond to 10 percent of the 100-year objective. Unless otherwise stated, objectives associated with each habitat type reflect a desired increase in the amount of this habitat.

ning regions (Table 3.8). In addition to restoration, which creates new acres of wetlands, enhancement of existing wetlands is also needed. Proper water management is critical to producing large amounts of food in seasonal wetlands. Water control structures, such as the levees and ditch networks that are used to manage water levels, must be periodically repaired or enhanced to maintain or improve food production. The CVJV assumes that managed seasonal wetlands need some form of intense habitat and infrastructure enhancement, on average, every twelve years to maintain the level of productivity assumed in the CVJV model. As a result, wetland enhancement objectives are expressed perpetually as one-twelfth of the total wetland acres. Note that, as more acres of wetland are restored, that creates more acres requiring

FOCUS AREA	PLANNING REGION	BASIN	NON-BREEDING WATER-FOWL	BREEDING WATER-FOWL	NON-BREEDING SHORE-BIRDS	BREEDING SHORE-BIRDS	NON-BREEDING WATER-BIRDS	BREEDING WATER-BIRDS	RIPARIAN LAND-BIRDS	AT-RISK SPECIES	GRASSLAND-OAK SAVANNAH LANDBIRDS
Primary Focus Area	Sacramento	American									
		Butte	•	•		•	•	•	•	•	
		Colusa			•						
		Sutter									
	Yolo-Delta	Yolo	•	•		•	•	•	•	•	•
		Delta									
	Suisun	Suisun	•	•	N/O	N/O	•	•	N/O	•	
	San Joaquin	San Joaquin	•	•	•	•	•	•	•	•	
Tulare	Tulare	•	•		•	•	•	•	•		
Secondary Focus Area			N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	•

N/O: No objectives

TABLE 3.7 Scale at which habitat objectives are established for each bird

Non-Breeding Waterfowl

The non-breeding waterfowl bird group includes migrating and wintering ducks and geese that rely on Central Valley habitats between August and March. The habitat objectives for this bird group reflect the landscape conditions necessary to support duck populations at North American Waterfowl Management Plan (NAWMP) goals. The habitat objectives listed for non-breeding waterfowl in this summary chapter correspond to 25 percent of the wetland objectives established in the Non-Breeding Waterfowl chapter. Twenty-five percent was deemed a reasonable number to be achieved over the 10-year life of the Plan.

Restoration objectives for seasonal wetlands over the life of the 2020 Plan total 17,292 acres and vary widely among plan-

periodic enhancement. Annual (perpetual) wetland enhancement objectives for the Central Valley total 17,738 acres once the 10-year wetland restoration objectives have been met.

The agricultural enhancement objective for non-breeding waterfowl is divided into two sub-objectives: the amount of winter-flooded rice and grain corn that is available annually, and the permanent protection of agricultural habitats. The CVJV's objective is to maintain the 340,670 acres of winter-flooded rice and 34,408 acres of non-deep plowed grain corn that is now available to waterfowl, and in addition, to permanently protect 54,000 acres of riceland through conservation easements. These riceland easements reflect a desire to permanently protect 10 percent of the planted rice base over the life of the 2020 Plan.

CONSERVATION APPROACH

PLANNING REGION	MANAGED SEASONAL WETLAND RESTORATION	MANAGED SEASONAL WETLAND ENHANCEMENT	AGRICULTURAL HABITAT ^a	AGRICULTURAL HABITAT PROTECTION
Sacramento	6,875	6,256	324,847 WFR 7,406 GC	54,000 (Rice)
Yolo-Delta	4,500	2,196	15,823 WFR 27,002 GC	0
Suisun	NA	2,386	NA	NA
San Joaquin	3,125	5,105	NA	NA
Tulare	2,792	1,795	NA	NA
Central Valley Total	17,292	17,738	340,670 WFR 34,408 GC	54,000 (Rice)

^a Annual objectives that reflect the CVJV's desire to maintain the amount of winter-flooded rice and harvested grain corn currently available to non-breeding waterfowl.

WFR: Winter-Flooded Rice

GC: Grain Corn

NA: Not Applicable

TABLE 3.8 CVJV Primary Focus Area habitat objectives (acres) for non-breeding waterfowl over the intended life of this Plan.

Breeding Waterfowl

Habitat objectives for breeding waterfowl are focused primarily on increasing the acreage of managed semi-permanent wetlands (Table 3.3). The objective is to increase the acres of managed semi-permanent wetlands by an amount that is equal to 20 percent of all existing managed wetlands in the Central Valley (that is, 20 percent of the combined total of existing managed seasonal and semi-permanent wetlands). It should be noted that the Breeding Waterfowl chapter of this Plan also includes objectives for associated uplands (for nesting), but these upland acres are not shown in Table 3.9.

PLANNING REGION

	MANAGED SEMI-PERMANENT WETLANDS
Sacramento	9,420
Yolo-Delta	1,183
Suisun	1,355
San Joaquin	9,378
Tulare	0
Total	21,336

TABLE 3.9 Managed semi-permanent wetland objectives (acres) for breeding waterfowl in each planning region and for the Central Valley as a whole.

Non-Breeding Shorebirds

The non-breeding shorebirds group includes migrating and wintering birds that reside in the Central Valley between July and May. Habitat objectives for non-breeding shorebirds are specific to managed wetlands, regardless of whether these wetlands are managed as seasonal or semi-permanent habitats (that is, both habitat types can meet the needs of this bird group). These objectives have been further defined as managed wetlands that provide areas of open water four inches or less in depth. Part of the challenge of meeting the habitat needs of non-breeding shorebirds is that large numbers of birds are present during periods of time when, due to traditional land management practices, few wetlands or other habitat types are available. For example, peak populations of non-breeding shorebirds in the Central Valley occur in late April, when most seasonally managed wetlands are dry. Habitat objectives for this bird group reflect the time periods when habitats are in short supply (Table 3.10).

NON-BREEDING SHOREBIRDS

	MID-MARCH THROUGH APRIL	LATE JULY THROUGH SEPTEMBER
CVJV Primary Focus Area	11,594	5,337

TABLE 3.10 Managed seasonal and semi-permanent wetland objectives (acres) for non-breeding shorebirds.

Breeding Shorebirds

Habitat objectives for breeding shorebirds are focused exclusively on increasing the amount of managed semi-permanent wetlands (Table 3.11). Other types of wetlands could contribute to breeding shorebird habitat objectives, such as reverse-cycle wetlands that are flooded in spring and summer and managed with relatively shallow water.

PLANNING REGION	BREEDING SHOREBIRDS	
	Managed Semi-Permanent Wetlands	
Sacramento	7,023	
Yolo-Delta	7,159	
Suisun	0	
San Joaquin	7,272	
Tulare	7,055	
Total	28,508	

TABLE 3.11 Managed semi-permanent wetland objectives (acres) for breeding shorebirds in each planning region and for the Central Valley as a whole.

Breeding Waterbirds

Waterbirds in the Central Valley are represented in the Plan by a suite of 10 focal species that reflect the diversity of waterbird species that use the region for nesting, foraging and roosting. Habitat objectives for breeding waterbirds are presented in Table 3.12.

PLANNING REGION	BREEDING WATERBIRDS	
	Managed Semi-Permanent Wetlands	Riparian Habitat
Sacramento	228	213
Yolo-Delta	228	213
Suisun	228	141
San Joaquin	796	425
Tulare	796	425
Total	2,276	1,417

TABLE 3.12 Habitat objectives (acres) for breeding waterbirds in each planning region and for the Central Valley as a whole.

Non-Breeding Waterbirds

Habitat objectives for non-breeding waterbirds are presented in Table 3.13.

NON-BREEDING WATERBIRDS

	Managed Seasonal Wetlands	Winter-Flooded Rice	Postharvest-Flooded Corn
Sacramento	6,849	391,395	0
Yolo-Delta	2,195	20,690	5,280
Suisun	2,876	NA	NA
San Joaquin	5,837	NA	NA
Tulare	1,884	NA	NA
Total	19,641	412,085	5,280

NA: Not Applicable

TABLE 3.13 Habitat objectives (acres) for non-breeding waterbirds in each planning region and for the Central Valley as a whole.

Breeding Riparian Landbirds

Riparian landbirds are represented in the Plan by 12 focal species that reflect the suite of species and habitat types used by the full complement of riparian landbirds found in the Central Valley. Habitat objectives for breeding riparian landbirds are focused exclusively on increasing the amount of riparian habitat (Table 3.14).

PLANNING REGION	RIPARIAN HABITAT
Sacramento	8,377
Yolo-Delta	5,906
San Joaquin	8,368
Tulare	9,273
Total	31,924

TABLE 3.14 Riparian habitat objectives (acres) for breeding riparian landbirds in each planning region and for the Central Valley as a whole.



Riparian habitat restoration – Massimiliano Sonogo, Point Blue Conservation Science

Breeding Grassland-Oak Savannah Landbirds

The habitat objectives for breeding grassland-oak savannah landbirds focus on 12 bird species that breed in grassland and oak savannah ecosystems and that represent a broad range of life histories and a continuum of specific habitat needs. Habitat objectives for breeding grassland-oak savannah landbirds are presented in Table 3.15. These objectives can be met anywhere in the Central Valley (except the Suisun Marsh, which does not naturally contain these habitats).

FOCUS AREA	GRASSLAND (<10% canopy)	OAK SAVANNAH (10-40% canopy)
Primary Focus Area	0 ^a	8,483
Secondary Focus Area	10,337	0 ^b
Total	10,337	8,483

^a The long-term habitat objective for grasslands in the Primary Focus Area is to maintain the current extent, with no net loss (see Breeding Grassland-Oak Savannah Landbird chapter).

^b The long-term habitat objective for oak savannah in the Secondary Focus Area is to maintain the current extent, with no net loss.

TABLE 3.15 Habitat objectives (acres) for breeding grassland-oak savannah landbirds in each focus area and for the Central Valley as a whole.



Waterfowl hunters - California Waterfowl Association



Grassland habitat near the South Fork American River - photo by American Rivers