

Arid Borderlands Region Chapter BCRs 33, 40, 41, and 42

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Location:

The Arid Borderlands includes parts of Arizona, California, Nevada, Utah, Sonora, Sinaloa, Baja California Sur, Baja California, and adjacent islands in the Sea of Cortez and Pacific Ocean (Figure 2). For purposes of this Plan, the Arid Borderlands Region includes the following Bird Conservation Regions: Sonoran and Mojave Deserts (BCR 33), Desierto de Baja California (BCR 40), Islas del Golfo de California (BCR 41), and Sierra y Planicies de El Cabo (BCR 42). This combination of BCRs was used in the regional Species Assessment for Northwestern Mexico and scores are in the database for this grouping.

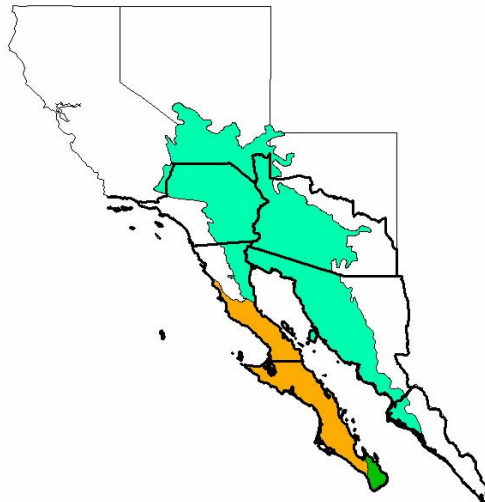


Figure 2. Map of the Arid Borderlands Region.

Description: The Sonoran-Mohave Desert is found in the northern part of the Arid Borderlands Region (southeastern California, western Arizona, southern Nevada, western Sonora, and northeastern Baja California). The Mojave Desert is the more northerly of the two deserts and is located in northwestern Arizona, eastern California, and southern Nevada. Together, these two arid deserts form the Sonoran and Mojave Deserts BCR (BCR 33) and are dominated by drought-adapted plant species: cacti (notably the arborescent Saguaro in the Sonoran Desert), Joshua Tree (the signature species of the Mojave Desert), shrubs such as Creosote, Saltbush, and Bursage, and trees such as Mesquite, Ironwood, Palo Verde, and Hackberry (scientific names of plant are found in Appendix F). The central portion of Sonora is described as an open stand of leguminous trees such as Ironwood, Palo Verde, and Mesquite. Several bird species are endemic or nearly endemic to these two deserts, including Le Conte's Thrasher, Abert's Towhee, Costa's Hummingbird, Gila Woodpecker, Gilded Flicker, and Rufous-winged Sparrow. Two endemic subspecies found in this Region are Savannah "Large-billed" Sparrow and Northern "Masked" Bobwhite.

The relatively small and few riparian and freshwater wetlands in the Sonoran-Mohave Desert are critically important for wildlife. Riparian vegetation in BCR 33 includes: Cottonwoods, Willows, and Salt Cedar (or Tamarisk), which occupy the immediate riparian corridors, and mesquite "bosques" located on alluvium terraces above the riparian corridors. Oasis woodlands also occur at isolated springs, seeps, and moist canyons. The palm species forming groves at oases are: California Fan Palm, Blue Fan Palm, and Sky-duster Palm as well as feral populations of Date Palm. The Lower Colorado River and adjacent wetlands provide the majority of freshwater wetland habitat along with the Salton Sea in southeastern California. The Salton Sea provides important winter habitat for large populations of ducks, geese, and waterbirds such as, Eared, Clark's, and Western grebes. Globally important coastal wetlands occur along the coast line of the Gulf of California, especially the Colorado River Delta (Ramsar designation).

The Desierto de Baja California (BCR 40) includes most of the peninsula of Baja California. The coastal plain is interrupted by many low hills with mountains forming the crest of the peninsular divide. A few areas of nondesertic vegetation are found at higher elevations. This BCR is a center of plant endemism that includes Maguey, Boojum, Agave, Bursage, and Cholla are dominant plants. Along the coast stem succulents dominate with an absence of the low shrub layer that is found elsewhere in Sonoran Desert. Species include: Elephant Tree, Sangre de Drago, Creosote, Palo Verde, Ironwood, and Cardón. The salt marshes, mangroves, and surrounding shrublands of the lagoons and shorelines also provide critical habitat. Gray Thrasher, Belding's Yellowthroat, and Xantus's Hummingbird are the three endemic species of the desert portion of this BCR. Additionally, an important population of Brant winters along the coasts of this Region. Black-vented Shearwater, Black Storm-Petrel, Xantus's Murrelet, and Least Storm-Petrel breed on islands in the Pacific Ocean.

The nearly 100 islands of the Islas del Golfo de California (BCR 41) are important nesting sites for seabirds and migration corridors. The habitats found on islands are often similar to Sonoran Desert flora but also include: mangroves, coastal dunes, desert thorn-scrub, and tropical deciduous forest. These islands provide breeding habitat for Black and Least storm-petrels, Red-billed Tropicbird, Blue-footed and Brown boobies, Brown Pelican, Brandt's Cormorant, Osprey, American Oystercatcher, Heermann's and Yellow-footed gulls (endemic breeder), and Craveri's Murrelet (endemic breeder).

The southern tip of the Baja California peninsula (Sierra y Planicies de El Cabo-BCR 42) is an area of desert shrubland and tropical deciduous forest that also includes the Sierra de la Laguna, which attains elevations that support pine-oak forest. The Sierra de la Laguna area is noted for several endemic subspecies: American "San Lucas" Robin, Yellow-eyed "Baird's" Junco, Northern "Cape" Pygmy-Owl, and Band-tailed "Sierra de la Laguna" Pigeon.

Avifaunal Analysis—Species Assessment and Prioritization:

In order to guide the expenditure of resources, the SJV and its partners have assessed the vulnerability of the bird species and responsibility of the SJV to conserve bird species found in the SJV area. Priority species for the Arid Borderlands Region are presented in three different lists: (1) Continental Concern Species (Table 2); (2) Regional Concern Species (Table 3); and (3) Stewardship Species (Table 4). Species assessments were done using the Partners in Flight methodology (<http://www.rmbo.org/pubs/downloads/Handbook.pdf>). Entry onto the Continental Concern list uses the same criteria that the North American PIF Landbird Plan used for landbirds breeding in the U.S./Canada (PIF Watch List). These same criteria, as adopted by the Mexican North American Bird Conservation Initiative, were used to determine the Continental Concern species for species breeding entirely in Mexico. Also used were the U.S. Shorebird Conservation Plan (Imperiled and High Concern North American populations), the North American Waterbird Plan (Imperiled), and the North American Waterfowl Management Plan (2005) (see Appendix C for a decision matrix for waterfowl entry to the lists and a comparison of designations).

The following table lists the Continental Concern Species found in the Arid Borderlands Region (Table 2). These species are recognized as vulnerable in either the breeding or nonbreeding season by at least one of the National or International Bird Conservation Initiatives. This analysis was done for entire BCRs within the Arid Borderlands Region of Arizona, New Mexico, Utah, California, and Nevada including portions that are outside of the SJV. Conservationists working in those locations may find this information helpful in their work. The highest priority species tend to have distributions restricted or nearly restricted to the combination of BCRs represented in Arid Borderlands and they tend to face similar threats. Species whose ranges cross political boundaries will benefit if all states involved coordinate conservation efforts.

The “Plan” column in the tables below indicates which species assessment process or which bird initiative(s) was used to include the species on the Concern Species Lists. The North American Waterfowl Management Plan’s (NAWMP) “Combined Prioritization of Breeding and Nonbreeding Ducks” meeting the criteria in Appendix C appear in the Concern Species Lists below. The U. S. Shorebird Conservation Plan’s (USSCP) highly imperiled and high concern species appear in the Concern Species Lists (see Appendix D. for a comparison of designations). The North American Waterbird Conservation Plan’s (NAWCP) imperiled and high concern species appear on Concern Species List (see Appendix E. for a comparison of designations). Partners in Flight (PIF; US/Canada landbirds and gamebirds) and Mexican Species Assessment Process (MX-PIF; all birds) denote the species assessment process that was used. An “SJV” designation indicates that the species or subspecies was scored by the SJV Technical Committee because the species was not scored by the above bird initiatives. For example, subspecies are not scored by most initiatives.

The “Season of Occurrence” column lists the season in which the species occurs in the SJV area (R= Resident, B=Breeding, W=Nonbreeding). A resident score ® is given for species that are essentially nonmigratory in Region. Breeding and nonbreeding (B/W) scores are given for species that are migratory but have individuals that are present during both seasons or may be considered resident but have various numbers of individuals moving in or out of the area seasonally. “B” or “W” scores are given for species that breed or winter only respectively.

The “RD” (Relative Density) column shows this value in the season of occurrence. Relative Density scores reflect the mean density of a species within a given BCR relative to the density in the single BCR in which the species occurs in its highest density (5 being the highest value, indicated by bold type). Scores relate to the season of occurrence given in the previous column (e.g., 5/3 signifies an RD of 5 in the breeding season and 3 in the nonbreeding season). Species with an RD score of 1 are not presented because they occur peripherally and/or in such low densities that it is wise to conserve them in other locations.

The “Habitat” column shows the primary habitat(s) that the species uses in this Region. In some cases, there is a designation for the season in which the species uses the listed habitat (B=Breeding, NB=Nonbreeding). The reader can use the habitats listed here for each species to find more information in the Habitat Discussion Sections. Habitats are not listed in order of importance. The habitat nomenclature is the same as Table 1, with the following exceptions: Desertscrub=Sonoran-Mojave Desertscrub; Grassland=Desert Grassland; Bosque=Mesquite Bosque; Chaparral=Interior Chaparral; Pine-Oak=Pine Oak Forest; Off-Shore=Off-Shore/Pelagic.

The species in each of the following tables are sorted by RD score first and then arranged in taxonomic order. This order reflects the magnitude of “Stewardship Responsibility” for species in the SJV area (most Responsibility (5) to the least Responsibility (2)). In other words, the SJV has large numbers of the entire world’s population of these RD=5 species and those species have high vulnerability scores. However, one should remember that all species on these tables meet the combined score criteria for vulnerability either continentally or regionally and are worthy of conservation attention. There are two ways that the Continental and Regional Concern Species tables can be used. First if the SJV or a partner is initiating a conservation project they should consider the higher RD species first. The tables can also be used to determine what Concern Species are in a particular habitat so project can be designed for their benefit.

Table 2. Continental Concern Species in the Arid Borderlands Region.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Branta bernicla</i>	Brant	NAWMP	W	5	Coastal Wetlands
<i>Aechmophorus clarkii</i>	Clark’s Grebe	PIF	B/W	2/5	Freshwater Wetlands, Coastal Wetlands
<i>Puffinus opisthomelas</i>	Black-vented Shearwater	MX-PIF, PIF, NAWCP	R	5	Islands - B Off-shore -NB
<i>Oceanodroma melania</i>	Black Storm-Petrel	MX-PIF, NAWCP, PIF	R	5	Islands -B Off-Shore -NB
<i>Oceanodroma microsoma</i>	Least Storm-Petrel	MX-PIF, PIF, NAWCP	R	5	Islands - B Off-Shore -NB
<i>Sula nebouxii</i>	Blue-footed Booby	PIF	B/W	5/5	Islands
<i>Sula leucogaster</i>	Brown Booby	PIF	B/W	4/5	Islands - B Off-Shore -NB
<i>Fregata magnificens</i>	Magnificent Frigatebird	PIF	R	5	Islands, Coastal Wetlands
<i>Haematopus palliatus</i>	American Avocet	PIF	B/W	2/5	Freshwater Wetlands, Coastal Wetlands, Agriculture
<i>Limosa fedoa</i>	Marbled Godwit	USSCP, PIF	W	5	Freshwater Wetlands, Coastal Wetlands
<i>Calidris mauri</i>	Western Sandpiper	USSCP, PIF	W	5	Freshwater Wetlands, Coastal Wetlands
<i>Larus heermanni</i>	Heermann’s Gull	PIF, MX-PIF	B/W	5/5	Islands, Coastal Wetlands
<i>Larus livens</i>	Yellow-footed Gull	MX-PIF, PIF	R	5	Islands, Coastal Wetlands
<i>Sterna elegans</i>	Elegant Tern	MX-PIF, PIF	B/W	5/2	Islands, Coastal Wetlands
<i>Synthliboramphus hypoleucus</i>	Xantus’s Murrelet	MX-PIF, PIF, NAWCP	B/W	5/5	Islands - B Off-shore -NB

<i>Synthliboramphus craveri</i>	Craveri's Murrelet	MX-PIF, PIF NAWCP	B/W	5/5	Islands - B Off-shore -NB
<i>Micrathene whitneyi</i>	Elf Owl	MX-PIF, PIF	B/W	5/3	Riparian, Bosque, Desertscrub Cliff/Rock
<i>Aeronautes saxatalis</i>	White-throated Swift	PIF	B/W	4/5	
<i>Calypte costae</i>	Costa's Hummingbird	PIF	R	5	Desertscrub, Riparian
<i>Vireo vicinior</i>	Gray Vireo	PIF	B/W	2/5	Desertscrub (winter) Pinyon-Juniper (breeding)
<i>Toxostoma bendirei</i>	Bendire's Thrasher	PIF	R	5	Desertscrub
<i>Toxostoma lecontei</i>	Le Conte's Thrasher	PIF	R	5	Desertscrub
<i>Vermivora luciae</i>	Lucy's Warbler	PIF	B	5	Riparian, Bosque
<i>Geothlypis beldingi</i>	Belding's Yellowthroat	MX-PIF	R	5	Freshwater Wetlands
<i>Pipilo aberti</i>	Abert's Towhee	PIF	R	5	Riparian, Bosque, Urban
<i>Aimophila carpalis</i>	Rufous-winged Sparrow	MX-PIF, PIF	R	5	Grassland, Tropical Deciduous Forest
<i>Carduelis lawrencei</i>	Lawrence's Goldfinch	PIF, MX-PIF	B/W	3/5	Riparian, Agriculture, Desertscrub
<i>Puffinus griseus</i>	Sooty Shearwater	PIF	W	4	Off-Shore
<i>Charadrius alexandrinus</i>	Snowy Plover	USSCP, PIF	B/W	4/3	Freshwater Wetlands, Coastal Wetlands
<i>Charadrius montanus</i>	Mountain Plover	USSCP, PIF	W	4	Grassland, Agriculture
<i>Haematopus palliatus</i>	American Oystercatcher	USSCP, PIF	B/W	¾	Islands, Coastal Wetlands
<i>Numenius americanus</i>	Long-billed Curlew	USSCP, PIF	W	4	Freshwater Wetlands, Coastal Wetlands, Agriculture
<i>Sterna antillarum</i>	Least Tern	PIF	B	4	Freshwater Wetlands, Islands, Coastal Wetlands
<i>Columba fasciata</i>	Band-tailed Pigeon	PIF	B/W	2/4	Pinyon-Juniper, Pine/Oak
<i>Polioptila californica</i>	California Gnatcatcher	MX-PIF, PIF	R	4	Desertscrub
<i>Spizella breweri</i>	Brewer's Sparrow	PIF	B/W	2/4	Desertscrub
<i>Spizella atrogularis</i>	Black-chinned Sparrow	PIF	B/W	¼	Chaparral
<i>Anas acuta</i>	Northern Pintail	NAWMP	B/W	2/3	Freshwater Wetlands, Coastal Wetlands, Agriculture

<i>Aythya affinis</i>	Lesser Scaup	NAWMP, PIF	W	3	Freshwater Wetlands Coastal Wetlands
<i>Melanitta perspicillata</i>	Surf Scoter	PIF	W	3	Coastal Wetlands Off-Shore
<i>Oceanodroma homochroa</i>	Ashy Storm-Petrel	NAWCP, PIF, MX-PIF	W	3	Off-Shore
<i>Phaethon aethereus</i>	Red-billed Tropicbird	PIF	B/W	2/3	Islands - B Off-Shore -NB
<i>Phalacrocorax penicillatus</i>	Brandt's Cormorant	PIF	B/W	3/3	Islands
<i>Laterallus jamaicensis</i>	Black Rail	PIF	R	3	Freshwater Wetlands
<i>Charadrius wilsonia</i>	Wilson's Plover	USSCP, PIF	B/W	3/3	Coastal Wetlands
<i>Numenius phaeopus</i>	Whimbrel	USSCP, PIF	W	3	Freshwater Wetlands, Coastal Wetlands, Agriculture
<i>Calidris alba</i>	Sanderling	USSCP, PIF	W	3	Coastal Wetlands
<i>Calidris alpina</i>	Dunlin	USSCP, PIF	W	3	Coastal Wetlands
<i>Limnodromus griseus</i>	Short-billed Dowitcher	USSCP, PIF	W	3	Coastal Wetlands, Agriculture
<i>Sterna nilotica</i>	Gull-billed Tern	PIF	B/W	2/3	Freshwater Wetlands, Coastal Wetlands
<i>Melanerpes lewis</i>	Lewis's Woodpecker	PIF	W	3	Pinyon-Juniper
<i>Vireo bellii</i>	Bell's Vireo	PIF	B/W	3/3	Riparian, Bosque
<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	PIF	B/W	1/3	Pinyon-Juniper
<i>Passerina versicolor</i>	Varied Bunting	MX-PIF, PIF	B/W	3/2	Desertscrub, Tropical Deciduous Forest
<i>Anas platyrhynchos</i>	Mallard	NAWMP	W	2	Riparian, Freshwater Wetlands, Agriculture
<i>Callipepla squamata</i>	Scaled Quail	PIF	R	2	Grassland, Desertscrub
<i>Cyrtonyx montezumae</i>	Montezuma Quail	PIF, MX-PIF	R	2	Grassland, Pine-Oak
<i>Podiceps auritus</i>	Horned Grebe	PIF	W	2	Coastal Wetlands
<i>Phoebastria immutabilis</i>	Laysan Albatross	PIF	B/W	2/2	Island - B Off-Shore -NB
<i>Phoebastria nigripes</i>	Black-footed Albatross	MX-PIF	W	2	Off-Shore
<i>Puffinus creatopus</i>	Pink-footed Shearwater	PIF	W	2	Off-Shore
<i>Puffinus carneipes</i>	Flesh-footed Shearwater	PIF	W	2	Off-Shore
<i>Puffinus bulleri</i>	Buller's Shearwater	PIF	W	2	Off-Shore
<i>Puffinus tenuirostris</i>	Short-tailed Shearwater	PIF	W	2	Off-Shore

<i>Oceanodroma tethys</i>	Wedge-rumped Storm-Petrel	PIF	W	2	Off-Shore
<i>Sula dactylatra</i>	Masked Booby	PIF	B/W	2/2	Islands - B Off-Shore -NB
<i>Phalacrocorax pelagicus</i>	Pelagic Cormorant	PIF	W	2	Islands, Off-Shore, Coastal Wetlands
<i>Egretta caerulea</i>	Little Blue Heron	PIF	R	2	Freshwater Wetlands, Coastal Wetlands
<i>Egretta rufescens</i>	Reddish Egret	MX-PIF, PIF	B/W	2/2	Coastal Wetlands, Islands
<i>Mycteria americana</i>	Wood Stork	PIF, NAWCP	W	2	Coastal Wetlands
<i>Buteo swainsoni</i>	Swainson's Hawk	PIF	B/W	2/2	Grassland, Agriculture
<i>Haematopus bachmani</i>	Black Oystercatcher	USSCP, PIF	R	2	Coastal Wetlands, Islands
<i>Arenaria melanocephala</i>	Black Turnstone	USSCP, PIF	W	2	Coastal Wetlands
<i>Aphriza virgata</i>	Surfbird	USSCP, PIF	W	2	Coastal Wetlands
<i>Calidris canutus</i>	Red Knot	PIF	W	2	Coastal Wetlands
<i>Rynchops niger</i>	Black Skimmer	PIF, NAWCP	B/W	2/2	Coastal Wetlands
<i>Otus flammeolus</i>	Flammulated Owl	PIF	B	2	Pine-Oak
<i>Asio flammeus</i>	Short-eared Owl	PIF	B/W	2/2	Grassland, Freshwater Wetlands, Agriculture
<i>Empidonax traillii</i>	Willow Flycatcher	PIF	B	2	Riparian
<i>Tyrannus crassirostris</i>	Thick-billed Kingbird	MX-PIF, PIF	B	2	Riparian, Tropical Deciduous Forest
<i>Vireo pallens</i>	Mangrove Vireo	MX-PIF	W	2	Coastal Wetlands
<i>Baeolophus inornatus</i>	Oak Titmouse	PIF	R	2	Pine-Oak
<i>Polioptila nigriceps</i>	Black-capped Gnatcatcher	MX-PIF, PIF	R	2	Bosque, Desertscrub
<i>Anthus spragueii</i>	Sprague's Pipit	PIF	W	2	Grassland, Agriculture
<i>Vermivora virginiae</i>	Virginia's Warbler	PIF	B	2	Pinyon-Juniper, Pine-Oak, Chaparral
<i>Aimophila quinquestrata</i>	Five-striped Sparrow	MX-PIF, PIF	R	2	Desertscrub, Tropical Deciduous Forest
<i>Ammodramus bairdii</i>	Baird's Sparrow	PIF	W	2	Grassland
<i>Calcarius mccownii</i>	McCown's Longspur	PIF	W	2	Grassland

Species of Regional Concern (Table 3) are species that have a combination of moderately high vulnerability, high regional threats, and declining regional population trends. High scoring subspecies (from the Species Assessment Process) are included in the Species of Regional Concern table. These subspecies have not been scored by a national or international bird initiative but were scored by the SJV Technical Committee. There are a few full species that the SJV Technical Committee has scored higher than either the Mexican or the US/Canada Species Assessment Process (denoted “SJV” in the Plan column). This situation resulted from combining the two sets of scores and the combination resulted in a higher score. In the future, there will not be two sets of scores; they will be reconciled into one set by NABCI, SJV Technical Committee, and other experts.

Table 3. Regional Concern Species in the Arid Borderlands Region.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Colinus virginianus ridgwayi</i>	Northern “Masked” Bobwhite	SJV	R	5	Grassland
<i>Parabuteo unicinctus</i>	Harris’s Hawk	MX-PIF	B/W	5/5	Desertscrub, Grassland
<i>Laterallus jamaicensis coturniculus</i>	Black “California” Rail	SJV	R	5	Freshwater Wetlands
<i>Rallus longirostris yumanensis</i>	Clapper “Yuma” Rail	SJV	R	5	Freshwater Wetlands
<i>Sterna nilotica vanrossemi</i>	Gull-billed “Western” Tern	SJV	B/W	5/3	Freshwater Wetlands, Coastal Wetlands
<i>Sterna antillarum browni</i>	Least “California” Tern	SJV	B	5	Freshwater Wetlands, Islands, Coastal Wetlands
<i>Zenaida asiatica</i>	White-winged Dove	MX-PIF	B/W	5/2	Riparian, Bosque, Urban
<i>Megascops kennicottii</i>	Western Screech-Owl	PIF, MX-PIF	B/W	5/3	Desertscrub
<i>Glaucidium gnoma hoskinsii</i>	Northern “Cape” Pygmy-Owl	SJV	R	5	Pine-Oak
<i>Athene cucularia</i>	Burrowing Owl	PIF	R	5/4	Desertscrub, Grassland, Agriculture
<i>Melanerpes uropygialis</i>	Gila Woodpecker	PIF	R	5	Riparian, Bosque, Urban, Desertscrub
<i>Picoides scalaris</i>	Ladder-backed Woodpecker	MX-PIF	B/W	5/5	Riparian, Bosque
<i>Colaptes chrysoides</i>	Gilded Flicker	PIF	B/W	5/4	Riparian, Bosque, Desertscrub
<i>Myiarchus cinerascens</i>	Ash-throated Flycatcher	MX-PIF	B/W	5/5	Riparian, Bosque, Desertscrub

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Vireo bellii pusillus</i>	Bell's "Least" Vireo	SJV	B/W	2/5	Riparian
<i>Lanius ludovicianus</i>	Loggerhead Shrike	PIF	B/W	5/5	Desertscrub, Grassland
<i>Progne subis hesperia</i>	Purple "Arizona" Martin	SJV	B	5	Desertscrub
<i>Auriparus flaviceps</i>	Verdin	MX-PIF, PIF	R	5	Riparian, Bosque, Desertscrub
<i>Campylorhynchus brunneicapillus</i>	Cactus Wren	PIF	R	5/5	Bosque, Urban, Desertscrub
<i>Cistothorus palustris</i>	Marsh Wren	MX-PIF,	B/W	2/5	Freshwater Wetlands
<i>Turdus migratorius confinis</i>	American "San Lucas" Robin	SJV	R	5	Pine-Oak
<i>Toxostoma crissale</i>	Crissal Thrasher	MX-PIF	B/W	4/5	Riparian, Bosque
<i>Phainopepla nitens</i>	Phainopepla	MX-PIF	B/W	5/5	Bosque, Desertscrub
<i>Dendroica petechia sonorana</i>	Yellow "Sonora" Warbler	SJV	B/W	5/3	Riparian
<i>Pipilo crissalis eremophilus</i>	California "Inyo" Towhee	SJV	R	5	Riparian
<i>Passerculus sandwichensis rostratus</i>	Savannah "Large-billed" Sparrow	SJV	R	5	Freshwater Wetlands
<i>Junco phaeonotus bairdi</i>	Yellow-eyed "Baird's" Junco	SJV	R	5	Pine-Oak
<i>Anas clypeata</i>	Northern Shoveler	NAWMP	B/W	2/4	Freshwater Wetlands, Coastal Wetlands
<i>Anas crecca</i>	Green-winged Teal	NAWMP	W	-/4	Freshwater Wetlands, Coastal Wetlands
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	SJV	B/W	2/4	Islands, Freshwater Wetlands
<i>Circus cyaneus</i>	Northern Harrier	PIF	B/W	2/4	Freshwater Wetlands, Agriculture
<i>Coccyzus americanus occidentalis</i>	Yellow-billed "Western" Cuckoo	SJV	B	4	Riparian, Bosque
<i>Empidonax traillii extimus</i>	Willow "Southwestern" Flycatcher	SJV	B	4	Riparian
<i>Vireo bellii arizonae</i>	Bell's "Arizona" Vireo	SJV	B/W	4/4	Riparian, Bosque
<i>Salpinctes obsoletus</i>	Rock Wren	SJV	B/W	4/4	Desertscrub, Cliff/Rock
<i>Aimophila ruficeps</i>	Rufous-crowned Sparrow	SJV	B/W	2/4	Desertscrub, Grassland
<i>Calamospiza melanocorys</i>	Lark Bunting	PIF	B/W	2/4	Desertscrub, Grassland, Agriculture

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Sturnella neglecta</i>	Western Meadowlark	PIF	B/W	2/4	Grassland, Agriculture
<i>Anser erythropus</i>	“Lesser” Snow Goose (western Central Flyway popn.)	NAWMP	W	3	Freshwater Wetlands, Agriculture, Coastal Wetlands
<i>Anas strepera</i>	Gadwall	NAWMP	B/W	1/3	Coastal Wetlands, Freshwater Wetlands
<i>Anas cyanoptera</i>	Cinnamon Teal	NAWMP	B/W	2/3	Coastal Wetlands, Freshwater Wetlands
<i>Aythya americana</i>	Redhead	NAWMP	B/W	2/3	Coastal Wetlands, Freshwater Wetlands
<i>Aythya collaris</i>	Ring-necked Duck	NAWMP	W	-/3	Freshwater Wetlands
<i>Botaurus lentiginosus</i>	American Bittern	SJV	B/W	2/3	Freshwater Wetlands
<i>Ixobrychus exilis</i>	Least Bittern	MX-PIF	B/W	3/3	Freshwater Wetlands
<i>Buteogallus anthracinus</i>	Common Black-Hawk	MX-PIF, PIF	B/W	2/3	Riparian
<i>Aquila chrysaetos</i>	Golden Eagle	MX-PIF	B/W	2/3	Cliff/Rock
<i>Rallus longirostris</i>	Clapper Rail (other subspecies)	MX-PIF	B/W	3/3	Freshwater Wetlands, Coastal Wetlands
<i>Rallus limicola</i>	Virginia Rail	MX-PIF	B/W	2/3	Freshwater Wetlands
<i>Sterna caspia</i>	Caspian Tern	MX-PIF	B/W	2/3	Freshwater Wetlands, Coastal Wetlands
<i>Ptychoramphus aleuticus</i>	Cassin’s Auklet	PIF, MX-PIF	B/W	3/3	Islands-B Off-Shore-NB
<i>Columbina passerina</i>	Common Ground-Dove	PIF	B/W	3/3	Riparian, Desertscrub
<i>Tyto alba</i>	Barn Owl	PIF	B/W	3/3	Wetlands, Urban, Agriculture
<i>Glaucidium brasilianum cactorum</i>	Ferruginous “Cactus” Pygmy-Owl	SJV	R	3	Riparian, Bosque, Tropical Deciduous Forest
<i>Dendroica petechia castaneiceps</i>	Yellow “Mangrove” Warbler	SJV	B/W	3/3	Coastal Wetlands
<i>Icterus bullockii</i>	Bullock’s Oriole	PIF	B/W	3/2	Riparian
<i>Carduelis psaltria</i>	Lesser Goldfinch	MX-PIF	B/W	2/3	Riparian, Urban
<i>Dendrocygna bicolor</i>	Fulvous Whistling-Duck	MX-PIF, NAWMP	R	2	Riparian, Freshwater Wetlands
<i>Anas discors</i>	Blue-winged Teal	NAWMP	W	-/2	Freshwater Wetlands,

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Aythya valisineria</i>	Canvasback	NAWMP	W	-/2	Coastal Wetlands Freshwater Wetlands,
<i>Callipepla douglasii</i>	Elegant Quail	MX-PIF	R	2	Coastal Wetlands Grassland, Tropical Deciduous Forest
<i>Tachybaptus dominicus</i>	Least Grebe	SJV	B/W	2/2	Freshwater Wetlands
<i>Oceanodroma leucorhoa</i>	Leach's Storm-Petrel	MX-PIF	B/W	2/2	Islands - B Off-Shore - NB
<i>Egretta tricolor</i>	Tricolored Heron	PIF	B/W	2/2	Freshwater Wetlands, Coastal Wetlands
<i>Patalea ajaja</i>	Roseate Spoonbill	SJV	B/W	2/2	Coastal Wetlands
<i>Mycteria Americana</i>	Wood Stork	PIF	W	2	Coastal Wetlands, Freshwater Wetlands
<i>Haliaeetus leucocephalus</i>	Bald Eagle (winter populations)	MX-PIF, PIF	W	2	Riparian, Freshwater Wetlands
<i>Haliaeetus leucocephalus</i> -SW Popn.	Bald "Southwestern" Eagle	SJV	R	2/2	Riparian, Coastal Wetlands
<i>Asturina nitida</i>	Gray Hawk	MX-PIF	B/W	2/2	Riparian, Bosque
<i>Buteo albonotatus</i>	Zone-tailed Hawk	MX-PIF	B/W	2/2	Desertscrub, Pine-Oak
<i>Arenaria interpres</i>	Ruddy Turnstone	USSCP	W	2	Coastal Wetlands
<i>Columba flavirostris</i>	Red-billed Pigeon	MX-PIF, PIF	B/W	2/2	Riparian, Tropical Deciduous Forest
<i>Amazona albifrons</i>	White-fronted Parrot	MX-PIF	R	2	Riparian, Tropical Deciduous Forest
<i>Glaucidium gnoma</i>	Northern Pygmy-Owl	MX-PIF	B/W	2/2	Pine-Oak
<i>Asio otus</i>	Long-eared Owl	PIF	B/W	2/2	Riparian, Desertscrub
<i>Caprimulgus ridgwayi</i>	Buff-collared Nightjar	MX-PIF	B	2	Riparian, Bosque, Desertscrub
<i>Melanerpes formicivorus</i>	Acorn Woodpecker	MX-PIF	B/W	2/2	Pine-Oak
<i>Myiarchus nuttingi</i>	Nutting's Flycatcher	MX-PIF	B/W	2/2	Riparian, Tropical Deciduous Forest
<i>Myiodynastes luteiventris</i>	Sulphur-bellied Flycatcher	MX-PIF	B	2	Riparian
<i>Pachyramphus aglaiae</i>	Rose-throated Becard	MX-PIF	B	2	Riparian
<i>Baeolophus wollweberi</i>	Bridled Titmouse	MX-PIF	R	2/2	Riparian, Pine- Oak
<i>Calcarius ornatus</i>	Chestnut-collared Longspur	SJV	W	2	Grassland

The following Stewardship Responsibility species for the Arid Borderlands Region (Table 4) are those species that have an RD of 5 in either the U.S. or Mexican database that are in addition to those RD=5 species on the Continental Concern or Regional Concern species lists above. RD is being used as a substitute for percent of population until they can be calculated for all species. These are species for which the SJV has “stewardship responsibility”. They are species in which a large percentage of the population inhabits this Region during either the breeding or nonbreeding portion of their annual cycle. Concern level (due to threats, population declines, etc.) for them is not high at present, but it is the SJV’s responsibility to ensure that they do not slip into the “concern” category. This usually means that monitoring is an action and these species and their habitats need to be maintained and considered in long-term planning.

Table 4. Additional Stewardship Responsibility Species in the Arid Borderlands Region.

Scientific Name	Common English Name	Season of Occurrence	RD (B/W)	Habitat
<i>Chen caerulescens</i>	Snow Goose	W	5	Freshwater Wetland
<i>Oxyura jamaicensis</i>	Ruddy Duck	W	5	Freshwater Wetland, Coastal Wetlands
<i>Callipepla gambelii</i>	Gambel’s Quail	R	5	Desertscrub, Agriculture
<i>Pelecanus occidentalis</i>	Brown Pelican	B/W	5/5	Coastal Wetlands
<i>Fulica americana</i>	American Coot	B/W	2/5	Freshwater Wetland
<i>Himantopus mexicanus</i>	Black-necked Stilt	B/W	5/4	Freshwater Wetland, Coastal Wetlands
<i>Limnodromus scolopaceus</i>	Long-billed Dowitcher	W	5	Freshwater Wetland, Coastal Wetlands
<i>Sterna maxima</i>	Royal Tern	B/W	5/2	Coastal Wetlands
<i>Patagioenas fasciata vioscae</i>	Band-tailed “Sierra de la Laguna” Pigeon	R	5	Pine-Oak
<i>Geococcyx californianus</i>	Greater Roadrunner	R	5	Desertscrub, Tropical Deciduous Forest
<i>Hylocharis xantusii</i>	Xantus’s Hummingbird	R	5	Desertscrub, Urban
<i>Sayornis saya</i>	Say’s Phoebe	B/W	5/5	Desertscrub
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	B/W	5/3	Freshwater Wetland, Riparian
<i>Regulus calendula</i>	Ruby-crowned Kinglet	W	5	Riparian, Bosque, Tropical Deciduous Forest, Pine-Oak
<i>Poliophtila melanura</i>	Black-tailed Gnatcatcher	R	5	Desertscrub, Tropical Deciduous Forest
<i>Toxostoma cinereum</i>	Gray Thrasher	R	5	Desertscrub
<i>Toxostoma curvirostre</i>	Curve-billed Thrasher	R	5	Desertscrub, Tropical Deciduous Forest, Urban
<i>Amphispiza bilineata</i>	Black-throated Sparrow	R	5	Desertscrub, Tropical Deciduous Forest, Grassland
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	W	5	Desertscrub, Bosque
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed Blackbird	B/W	2/5	Freshwater Wetland, Agriculture

The percentage of SJV Continental Concern Species (22.6%) is essentially the same as the percentage of PIF Watch List species (22%). Additionally the total number of bird species of Continental Concern (88) in the SJV is relatively similar to the PIF (100 species) effort. Perhaps the increased diversity as one travels south into the subtropics and tropics of the Arid Borderlands and the fact that the SJV includes birds from the other bird initiatives is balanced by the smaller geographic size of the Arid Borderlands (parts of five states) compared to the area of the PIF plan (all of Canada and the U.S.).

Table 5. Total and percentage of Concern and Stewardship Responsibility Species in the SJV and Arid Borderlands Region.

Concern Category	Total Number of Concern Species in the Category	Concern Species as a % of the regularly occurring SJV (667) species	Concern Species as a % of the regularly occurring Arid Borderlands (389) species
Continental Concern Species (Table 2)	88	13.2%	22.6%
Continental Concern Species that are also Stewardship Responsibility (RD=5)	27	4.0%	6.9%
Regional Concern Species (Table 3)	83	12.4%	21.3%
Regional Concern Species that are also Stewardship Responsibility (RD =5)	28	4.2%	7.2%
Stewardship-Only * (Table 4)	20	3.0%	5.1%
Total Stewardship species **	75	11.2%	19.3%

* Species with RD =5 that are not included as Continental or Region Concern Species.

** A total of all Stewardship Responsibility Species from the Continental Concern, Regional Concern, and Stewardship lists.

Arid Borderlands Habitat Sections

Habitat Discussions:

The following sections describe the major habitats found in the Arid Borderlands Region. Land managers, landowners, conservationists, and others can use this feature of the plan to focus on the habitats in their area and thus the birds and recommendations of interest. The habitat descriptions given are intended to be a general picture of the landscape. Detailed habitat descriptions of these major habitat types can be found in many other sources (see Literature Cited for references). Bird species from the Arid Borderlands Continental and Regional Concern Tables are sorted into their habitat(s) of primary use and are shown in the following habitat tables. Some birds use more than one primary habitat and thus will appear in more than one habitat section. Continental (CC) and Regional (RC) Concern categories are explained above. If a species is included in the habitat table as needing attention, all subspecies present in the Region are included by listing the full species. However, if a subspecies or population is of Concern, the full species may also be listed in the Habitat Tables if there are other possible subspecies or populations needing attention in the Region.

The habitat tables that follow also include, Conservation Action, Habitat Needs, and Population Objectives. The “Conservation Action” category column (Cons. Action) indicates the urgency and level of need for conservation efforts for that species. The SJV Technical Committee assigned each species to a Conservation Action category based on their knowledge and expertise. The Immediate Action (IM) category indicates that action is urgently needed to reverse or stabilize significant, long-term population declines of species with small populations or to protect species with small populations for which trends are poorly known. Populations of these species are at risk of extirpation over portions of their range and immediate and focused attention to their needs represent the highest conservation priority. Management Attention (MA) indicates that recommended management is needed to reverse significant long-term population declines or sustain vulnerable populations. Although many of these species are still relatively widespread, actions are necessary to prevent these species from becoming in danger of regional or range-wide extirpation in the future. Planning and Responsibility (PR) indicates species with relatively stable populations, regardless of population size or relatively abundant species for which population trends are poorly known. Many species in this category are also Stewardship Responsibility species. Often the action needed is long term planning and monitoring. Although this is considered a lower conservation category, action is still needed to protect vulnerable species while they have relatively healthy populations.

Conservation Actions categories are an important aspect of the Plan for land managers and conservation planners. The “IM” category provides a quick look at the species in the most need (usually critical need) of conservation action. As projects are planned in the various habitats, the “IM” species should be the first to be considered for beneficial habitat and population actions followed by the “MA” species. “PR” species are often species with less exacting habitat requirements than “IM” or “MA” species and will be benefited by actions for “IM” and “MA” species. If “PR” species are present in a project area their populations should be maintained. Concern categories are also a feature of the Plan that will direct research and monitoring projects. “IM” species often need intense, immediate research to determine the cause(s) of their declines. “MA” species usually need work on habitat relationships in order to better manage their habitat. All three categories must have long-term population trend monitoring.

Specific “Habitat Needs” are given for species that have habitat requirements or characteristics that define where they successfully breed or winter. This information can be used to find suitable habitat in order to manage it or to survey for the species of interest. The information may also be used to restore or enhance those habitat components necessary for a species to breed or winter successfully. If a species generally uses the habitat described in the habitat section and has no specific habitat needs other than well-developed habitat, then “generalist” is shown in this column. In addition, if the habitat needs for a species are not well known, then “specifics unknown (?)” is shown.

Species population objectives fall into one of four possible categories: Maintain, Maintain/Determine Status, Increase by 50%, or Double. For breeding or resident species, the objectives, described above under “Format of Plan” section, are based on regional population trend or expert opinion of trend when actual trend has not been measured reliably. Population objectives given for species only present during the nonbreeding seasons are based on the continental population trend. They should be interpreted as “a nonbreeding population that supports the breeding population objective of (whichever objective is given) the current population”. Population objectives may relate directly to habitat objectives (for instance, a doubling of a population may only be accomplished by a doubling of habitat area). However, increasing the population may be accomplished by other actions, such as improving the condition of existing habitat, preventing capture for the pet trade, or a combination of several actions.

Habitat tables are sorted first by Conservation Action (Immediate Action, Management Attention, and Planning and Responsibility), then by Population Objective (Double, Increase by 50%, Maintain/Determine Status, Maintain), and finally by taxonomic order. Species that are high responsibility due to a large portion of their population (RD=5) residing in this Region are shown in bold.

For further descriptions and reading regarding the following habitats, the reader may refer to:

Brown 1994, Latta et al. 1999 (Arizona), Corman and Wise-Gervais 2005 (Arizona), RHJV (Riparian Habitat Joint Venture) 2004 (California), Mills et al. 2005 (Pacific Coast), and Ybarra 2004 (Gulf of California).

Abbreviations for sources for Habitat Needs are as follows:

Howell and Webb (1995) = (H&W)

Corman and Wise-Gervais (2005) = (ABBA)

Habitat: Tropical Deciduous Forest

Location: Western slope and canyons of Sierra Madre Occidental extending to central and western Sonora and Sinaloa; grades into Sonoran Desertscrub on its western edge and Pine-Oak on its eastern edge; there is a relatively small amount of Tropical Deciduous Forest in this Region with the main portion of TDF is in the Pacific Lowlands Region, refer to that chapter for more information in that Region.

Dominant plant species: Mauto (*Lysiloma candida*), Pochote/Kapok (*Ceiba acuminata*), Copal (*Bursera* spp.), Elephant Tree (*Bursera microphylla*), and Hecho/Cardón (*Pachycereus pecten-aboriginum*).

Physical/biological descriptions: Semi-arid, drought deciduous, hot, monsoonal rain patterns; canopy up to 20 m high; includes thornscrub of central Sonora.

Threats: Erosion, unsustainable grazing, habitat conversion due to development, agriculture, mining, unsustainable timber harvesting, catastrophic fires, and invasive/nonnative species.

Opportunities for cooperation on conservation actions: Work with local landowners, municipalities, and ejidos.

Primary Conservation Needs/Actions: Work with partners to reduce land conversion and unsustainable grazing and wood extraction; promote erosion control, fire management, and invasive/nonnative plant control.

Priority Species for Tropical Deciduous Forest				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
White-fronted Parrot	RC	IM	Scattered trees, forest patches, columnar cacti	Maintain
Elegant Quail	RC	MA	Generalist	Increase by 50%
Red-billed Pigeon	RC	MA	Forest edge, oaks, forest patches, scattered trees	Increase by 50%
Rufous-winged Sparrow	CC	MA	Grassy areas	Increase by 50%
Five-striped Sparrow	CC	MA	Brushy scrub, rocky slopes	Increase by 50%
Varied Bunting	CC	MA	Riparian edges	Maintain/Determine Status
Ferruginous “Cactus” Pygmy Owl	RC	PR	Cavities in columnar cacti and trees.	Increase by 50%
Nutting’s Flycatcher	RC	PR	Shrubs and small trees.	Increase by 50%
Thick-billed Kingbird	CC	PR	Woodland edge, trees, hedges.	Maintain/Determine Status

* CC=Continental Concern Species; RC=Regional Concern Species. **IM=Immediate Action; MA=Management Attention; PR=Long-term Planning and Responsibility

Habitat: Pine-Oak Forest

Location: Higher elevations especially in the transition zone with the Mexican Highlands in Arizona and Sonora, Sierra de la Laguna in Baja California Sur, and mountains of eastern California and southern Nevada; the majority of this habitat is in the Mexican Highlands Region.

Dominant plant species: Various pine and oak species such as Ponderosa Pine (*Pinus ponderosa*), Emory Oak (*Quercus emoryi*), Gambel Oak (*Q. gambelii*), and Gray Oak (*Q. grisea*).

Physical/biological descriptions: From savannah-like woodlands to forest; includes mixed conifer forests in mountains with appropriate elevation (e.g., Spring Mountains of southern Nevada).

Threats: Unsustainable grazing, unsustainable timber harvest, off-road vehicle use, and conversion to suburban/urban development.

Opportunities for cooperation on conservation actions: Work with Protected Natural Areas in Mexico and government agencies in the U.S.

Primary Conservation Needs/Actions: Prevent land conversion and unsustainable logging; promote sustainable grazing practices; protect large trees, cavity trees, and extensively forested landscapes.

Priority Species for Pine-Oak Forest				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Northern Pygmy-Owl	RC	MA	Nesting cavities	Increase by 50%
Northern "Cape" Pygmy Owl	RC	MA	Nesting cavities	Increase by 50%
Oak Titmouse	CC	MA	Nesting cavities	Increase by 50%
Flammulated Owl	CC	MA	Nesting cavities	Maintain/Determine Status
Virginia's Warbler	CC	MA	Moderate to dense stands of shrubs with scattered trees	Maintain/Determine Status
American "San Lucas" Robin	RC	MA	Requires flowing streams	Maintain/Determine Status
Yellow-eyed "Baird's" Junco	RC	MA	Generalist	Maintain/Determine Status
Montezuma Quail	CC	PR	Grassy areas	Increase by 50%
Zone-tailed Hawk	RC	PR	Generalist	Increase by 50%
Band-tailed Pigeon	CC	PR	Acorns/oak trees (Sierra Madre), also wild figs (Sierra de la Laguna)	Maintain/Determine Status

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Acorn Woodpecker	RC	PR	Acorns	Maintain /Determine Status
Bridled Titmouse	RC	PR	Large trees (sycamore and cottonwoods)	Maintain /Determine Status

* CC=Continental Concern Species; RC=Regional Concern Species

**IM=Immediate Action; MA=Management Attention; PR=Long-term Planning and Responsibility

Habitat: Mesquite Bosque Woodland

Location: Adjacent to riparian, throughout the Region, usually on river benches/terraces.

Dominant plant species: Mesquites (*Prosopis* spp.), acacias (*Acacia* spp.), sacatons (*Sporobolus* spp.), and Desert Hackberry (*Celtis pallida*).

Physical/biological descriptions: Occurs in the gradient from wetter conditions to drier, upland conditions adjacent to riparian wetlands; on floodplains.

Threats: Groundwater pumping, water diversion, flood control, lowering of ground water tables (one of the most important factors because mesquite can not reach ground water below 14 m Brown 1994), erosion, exotic/invasive species, conversion to agriculture, fire, unsustainable grazing and wood extraction, conversion to suburban/urban development, salt cedar invasion.

Opportunities for cooperation on conservation actions: Currently being recognized as an important component for many riparian bird species; the Lower Colorado River-Multiple Species Conservation Plan (LCR-MSCP) plans to restore 326 ha of mesquite habitat which may provide opportunities for cooperation.

Primary Conservation Needs/Actions: Awareness of importance and function of this habitat, reduce grazing impacts, reduce land conversion; promote water conservation, erosion control, exotic/invasive species control, planned development, forest management (charcoal production), old growth protection, fire management; increase protected areas.

Priority Species for Mesquite Bosque Woodland				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Yellow-billed "Western" Cuckoo	RC	IM	Large, mature trees	Double
Bell's Vireo (all species)	CC	IM	Dense midstory and canopy	Increase by 50%
Bell's "Arizona" Vireo	RC	IM	Dense midstory and canopy	Increase by 50%
Ferruginous "Cactus" Pygmy-Owl	RC	IM	Large trees and columnar cacti with cavities	Increase by 50%
Elf Owl	CC	IM	Large trees and columnar cacti with cavities	Increase by 50%
Gila Woodpecker	RC	MA	Cavity nester	Double
Gray Hawk	RC	MA	Large mesquites, lizards	Increase by 50%
Black-capped Gnatcatcher	CC	MA	Dense midstory	Increase by 50%
Lucy's Warbler	CC	MA	Cavity trees or trees with exfoliating bark	Increase by 50%
Gilded Flicker	RC	MA	Cavity nester	Maintain/Determine

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Crissal Thrasher	RC	MA	Dense vegetation	Maintain/Determine Status
Abert's Towhee	CC	MA	Dense understory	Maintain
White-winged Dove	RC	PR	Generalist	Increase by 50%
Buff-collared Nightjar	RC	PR	Areas bordered by open pastures or thornscrub	Increase by 50%
Verdin	RC	PR	Generalist	Increase by 50%
Cactus Wren	RC	PR	Generalist	Increase by 50%
Phainopepla	RC	PR	Mistletoe	Increase by 50%
Ladder-backed Woodpecker	RC	PR	Cavity trees	Maintain/Determine Status
Ash-throated Flycatcher	RC	PR	Cavity trees	Maintain

* CC=Continental Concern Species; RC=Regional Concern Species

**IM=Immediate Action; MA=Management Attention; PR=Long-term Planning and Responsibility

Habitat: Pinyon-Juniper Woodland

Location: Higher elevations within mountain ranges in the Sonoran and Mojave deserts, the majority of this habitat is in the Mexican Highlands Region.

Dominant plant species: Usually equal dominance of Pinyon pine (*Pinus edulis* and others) and various junipers species (*Juniperus* spp.), oaks also grade into this habitat type; understory often composed of grasses; junipers have invaded some former grasslands at lower elevations, but that pinyons have also is less certain as attempts to “reconvert” these areas to grass will attest (Brown 1994).

Physical/biological descriptions: Open woodlands, mixed with grasses and forbs; cold winter temperatures; rocky with thin soils, contact with grassland or desertscrub below and pine or pine-oak at higher elevations.

Threats: Unsustainable grazing and harvest of trees, tree diseases, erosion in relation to recreation/access to sites, catastrophic fire, unplanned suburban development, and disturbance by off-road vehicles.

Opportunities for cooperation on conservation actions: Collaborative efforts with landowners, Natural Protected Areas (Sierra La Laguna, Parque Constitución), CONANP, and with the federal government in the U.S.

Primary Conservation Needs/Actions: Increase awareness of the importance of this habitat, grazing management, fire management; increase acreage of protected areas; recreation management, and wood extraction management.

Priority Species for Pinyon-Juniper Woodland				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Gray Vireo	CC	IM	Quality, undisturbed pinyon-juniper forest	Increase by 50%
Pinyon Jay	CC	MA	Large patches of mature pinyon pine and juniper (winter)	Double
Lewis’s Woodpecker	CC	MA	Cavity trees and snags for winter roosts and foraging (winter)	Maintain/Determine Status
Band-tailed Pigeon	CC	PR	Acorns/oak trees	Maintain/Determine Status
Virginia’s Warbler	CC	PR	Arid slopes with moderate to dense stands of shrubs with scattered trees	Maintain/Determine Status

* CC=Continental Concern Species; RC=Regional Concern Species

**IM=Immediate Action; MA=Management Attention; PR=Long-term Planning and Responsibility

Habitat: Desertscrub Shrublands

Location: Southwestern Arizona, southeastern California, southern Nevada, western Sonora, extreme northwestern Sinaloa, most of Baja California except for the northern mountains and northwestern coast, and Baja California Sur; also includes dunes at Desierto de Altar, Algodones, Glamis, Imperial Sand Dunes, and San Felipe.

Dominant plant species: Mesquite (*Prosopis* spp.), Palo Verde (*Cercidium* spp.), Ironwood (*Olneya tesota*), Saguaro (*Carnegiea gigantea*), Cardón (*Pachycereus* spp.), chollas (*Opuntia* spp.), ambrosia (*Ambrosia* spp.), Desert Hackberry (*Celtis pallida*), Creosote (*Larrea tridentata*), Joshua Tree (*Yucca brevifolia*), acacias (*Acacia* spp.), Smoketree (*Psoralea argophylla*), Desert Willow (*Chilopsis linearis*).

Physical/biological descriptions: Short-statured shrublands, often with short trees, elevationally below oak woodland, located throughout the Region. The Sonoran Desert has more diversity of vegetational components, and taller and more abundant plants than other deserts worldwide. The area is dry, fairly flat, and sparsely vegetated. Desertscrub includes dry washes or xeric riparian, which are distributed as winding strips through the lower elevations of the region, along ephemeral streams, washes, and dry arroyos. This habitat type is often developed by channeling run-off into more or less defined channels. Dry washes may have flowing water for a short period after rains but normally have no surface water. Dry washes are distinctive from surrounding desert in terms of increased density of vegetation that otherwise occurs sparsely as surrounding desertscrub. Dry washes are believed to be important for migrating birds. This habitat type also includes dunes, which are almost completely devoid of vegetation.

Threats: Conversion to agriculture or suburban development, large-scale littering, invasive/ nonnative grasses increasing fire threat, disturbance of vegetation by off-road vehicles, unsustainable grazing, corridors for illegal migrants, and gravel and sand extraction.

Opportunities for cooperation on conservation actions: This habitat type is the core of the desert; there are several institutions working on desert conservation on both sides of the border (e.g., Arizona-Sonoran Desert Museum, Centro Ecológico, Sonoran Institute). Areas exist that protect this habitat type, including Pinacate Biosphere Reserve, Organ Pipe National Monument, Goldwater Bombing Range, Joshua Tree National Park, Mojave National Preserve, and Lake Mead National Recreation Area. The presence of endangered plants in dunes increases awareness; work with off-road vehicle groups; some of the dunes are within protected areas on both sides of the border.

Primary Conservation Needs/Actions: Prevention of the spread of invasive/nonnative grasses; awareness and education of the value of desert habitat; land use planning to minimize effect of development on desertscrub; awareness of the importance of dry washes to birds; reduce unsustainable grazing and human-caused impacts.

Priority Species for Desertscrub Shrublands

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Gila Woodpecker	RC	MA	Woody vegetation or succulents for cavities	Double
Bendire's Thrasher	CC	MA	Scattered low bushes and low trees, some grass; in some places associated with Joshua Tree	Double
Scaled Quail	CC	MA	Open semi-desert grasslands	Increase by 50%
Harris's Hawk	RC	MA	Perching sites	Increase by 50%
Elf Owl	CC	MA	Columnar cacti with cavities	Increase by 50%
Purple "Arizona" Martin	RC	MA	Columnar cacti with cavities	Increase by 50%
Five-striped Sparrow	CC	MA	Rocky well-vegetated hillsides	Increase by 50%
Gilded Flicker	RC	MA	Trees or columnar cacti for cavities	Maintain/Determine Status
Le Conte's Thrasher	CC	MA	Very sparse, open desert with few shrubs, sensitive to disturbance	Maintain/Determine Status
Varied Bunting	CC	MA	Thorn shrub adjacent to riparian areas	Maintain/Determine Status
Burrowing Owl	RC	MA	Open, semi-open desert, with burrows	Maintain
California Gnatcatcher	CC	MA	Dense midstory	Maintain
Brewer's Sparrow	CC	PR	Brush adjacent to grass (nonbreeding)	Double
Gray Vireo	CC	PR	Elephant tree fruit (nonbreeding)	Increase by 50%/Determine Status
Zone-tailed Hawk	RC	PR	Generalist within mountain canyons and hills	Increase by 50%
Western Screech-Owl	RC	PR	Cavities, saguaros and mesquite	Increase by 50%
Buff-collared Nightjar	RC	PR	Areas bordered by open pastures or thornscrub	Increase by 50%
Loggerhead Shrike	RC	PR	Dense shrubs for nests; open areas with woody substrate, woodland edges	Increase by 50%
Verdin	RC	PR	Generalist	Increase by 50%
Cactus Wren	RC	PR	Generalist	Increase by 50%
Rock Wren	RC	PR	Sparse rocky desert areas	Increase by 50%
Black-capped Gnatcatcher	CC	PR	Dense thornscrub	Increase by 50%
Phainopepla	RC	PR	Mistletoe	Increase by 50%
Lark Bunting	RC	PR	Generalist (nonbreeding)	Increase by 50%
Common Ground-Dove	RC	PR	Generalist	Maintain /Determine Status
Long-eared Owl	RC	PR	Tree clumps for roosting	Maintain /Determine Status
Rufous-crowned Sparrow	RC	PR	Rocky slope, mixed with shrubs and grass	Maintain /Determine Status
Lawrence's Goldfinch	CC	PR	Near weedy fields, where water is available; substantial	Maintain/Determine Status

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Costa's Hummingbird	CC	PR	shrub understory (winter) Nectar producing flowers (nonbreeding), insects (breeding season)	Maintain
Ash-throated Flycatcher	RC	PR	Woody vegetation or columnar cacti for nesting cavities	Maintain

* CC=Continental Concern Species; RC=Regional Concern Species

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Habitat: Interior Chaparral Shrubland

Location: Isla Cedros, Sierra de la Laguna and areas at the ecotone between desertscrub and higher elevational habitats.

Dominant plant species: Manzanita (*Arctostaphylos* spp.), artemisias (*Artemisia* spp.), Lemon Berry (*Malosma laurina*), and madrones (*Arbutus* spp.).

Physical/biological descriptions: Arid habitat of low, dense primarily evergreen shrubs, associated with winter rainfall; 1,067-2,286 m.; fire dependent.

Threats: Feral goats and other introduced species (cats, rodents, etc.) and human disturbance on islands with this habitat, urban development, tourism development, unsustainable grazing, off-road vehicle use, nonnative plants, altered fire frequencies, soil erosion on steeper slopes.

Opportunities for cooperation on conservation actions: Institutions already working in the area such as: GECI, CICESE, Chapingo, and San Diego Natural History Museum; urban/wildlands interface programs of agencies (fire management).

Primary Conservation Needs/Actions: Reforestation, eradication of exotic species; protection from sprawling residential development, manage off-road motorized vehicle traffic, grazing management; protect riparian zones within drainages; fire management; planning/zoning.

Priority Species for Interior Chaparral Shrubland				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Black-chinned Sparrow	CC	PR	Higher elevations with some grass and low trees within chaparral	Increase by 50%/Determine Status
Virginia's Warbler	CC	PR	Chaparral generalist	Maintain/Determine Status

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Habitat: Desert Grasslands

Location: Occurs sparingly in this Region, not mentioned in Brown (1994).

Dominant plant species: Buffelgrass (*Pennisetum ciliare*), Blue Grama (*Boutelous gracilis*), other grama species, three-awns (*Aristida* spp.), sacatons (*Sporobolus* spp.), Lehman's lovegrass (*Eragrostis lehmanniana*), Soaptree Yucca (*Yucca elata*), and other yucca species.

Physical/biological descriptions: Temperate, dry climate, monsoonal rain patterns.

Threats: Unsustainable grazing, erosion, woody shrub encroachment, nonnative/invasive species (Buffelgrass), fragmentation, increased frequency/severity of fire, conversion to agriculture or suburban/urban development.

Opportunities for cooperation on conservation actions: Scientific knowledge has increased and has been recognized as one of the most threatened habitat types in North America (top priority by the North American Commission for Environmental Cooperation).

Primary Conservation Needs/Actions: Grazing management, native species restoration, nonnative species control, erosion control, planned developments, fire management.

Priority Species for Desert Grasslands				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Northern "Masked" Bobwhite	RC	IM	Tall grass plains; semi-open desert scrub with grass	Double
Baird's Sparrow	CC	IM	Dense grassy plains and mesas; grass not tall or coarse (nonbreeding)	Double
Rufous-winged Sparrow	CC	IM	Mixed bunchgrass, sensitive to overgrazing	Increase by 50%
Short-eared Owl	CC	MA	Generalist; open areas (nonbreeding)	Double/Determine Status
Sprague's Pipit	CC	MA	Open grass with few to no shrubs, native grass (nonbreeding)	Double
Scaled Quail	CC	MA	Open semi-desert grasslands	Increase by 50%
Elegant Quail	RC	MA	Mesquite-oak grassland	Increase by 50%
Montezuma's Quail	CC	MA	Oak grassland savannahs	Increase by 50%
Harris's Hawk	RC	MA	Large trees (cacti), perching structures	Increase by 50%
Mountain Plover	CC	MA	Open, short grass (nonbreeding)	Maintain/Determine Status

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Burrowing Owl	RC	MA	Open, semi-open grassland, with burrows	Maintain
Loggerhead Shrike	RC	PR	Generalist	Increase by 50%
Lark Bunting	RC	PR	Prefers native grasses (nonbreeding)	Increase by 50%
Chestnut-collared Longspur	RC	PR	Generalist (nonbreeding)	Increase by 50%
Swainson's Hawk	CC	PR	Grassy plains and wide valleys	Maintain/Determine Status
Rufous-crowned Sparrow	RC	PR	Rocky slopes, mixed shrubs and trees	Maintain/Determine Status
McCown's Longspur	CC	PR	Open grassland (nonbreeding)	Maintain/Determine Status
Western Meadowlark	RC	PR	Generalist	Maintain

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Habitat: Riparian Wetlands

Location: Distributed as winding strips through all elevations; perennial and intermittent streams and rivers throughout the Arid Borderlands Region, including the Colorado, Gila, Yaqui and Mayo rivers.

Dominant plant species: Goodding Willow (*Salix gooddingii*), Fremont Cottonwood (*Populus fremontii*), Salt Cedar (*Tamarix chinensis*), Seepwillows (*Baccharis* spp.)

Physical/biological descriptions: Perennial streams and adjacent floodplains with dense gallery forests (15-30 m high), adjacent woodlands, riparian shrublands; larger rivers once had channels that were shallow and braided with deeper waters in meanders and oxbows (Brown 1994); greatly reduced primarily by reduction in stream flows; usually multi-layered but may be lacking usual understory or canopy.

Threats: Water diversions/water extraction, modification of hydrological regime, wild fires, wood extraction, unsustainable grazing, competition from exotics (e.g., salt cedar), damaging recreation.

Opportunities for cooperation on conservation actions: Binational attention on water resources and watersheds; increased attention from environmental groups and government agencies (e.g., Lower Colorado River-Multi-Species Conservation Plan); riparian habitat has been identified by many conservation plans in the Region as a top priority; increased knowledge, experience, and case studies of restoration projects.

Primary Conservation Needs/Actions: Protect watershed and existing habitat, protect and/or enhance current water allocations to wildlife, recreate the natural hydrological regime (timing of flooding events), wildfire prevention (awareness and education), water conservation education, programs to encourage xeriscaping, habitat restoration.

Priority Species for Riparian Wetlands				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Yellow-billed "Western" Cuckoo	RC	IM	Large, mature trees, dense overstory	Double
Willow Flycatcher	CC	IM	Continuous riparian vegetation, presence of flowing water, dense understory	Double
Willow "Southwestern" Flycatcher	RC	IM	Continuous riparian vegetation, presence of flowing water, dense understory	Double
California "Inyo" Towhee	RC	IM	Dense willow thickets around springs	Double
Bald Eagle - resident	RC	IM	Large roost and nesting trees, free of human	Increase by 50%

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Southwestern popn. Ferruginous “Cactus” Pygmy Owl	RC	IM	disturbance, near permanent water	Increase by 50%
Elf Owl	CC	IM	Large trees, or columnar cacti with cavities for nesting	Increase by 50%
White-fronted Parrot	RC	IM	Large trees and cavities for nesting	Maintain
Fulvous Whistling-Duck	RC	MA	Trees or snags with cavities for nesting	Double
Gray Hawk	RC	MA	Large mesquites, lizards	Increase by 50%
Common Black-Hawk	RC	MA	Large trees and permanent water	Increase by 50%
Red-billed Pigeon	RC	MA	Large fruiting trees along streams and around clearings	Increase by 50%
Bell’s Vireo	CC	MA	Closed canopy, large trees	Increase by 50%
Bell’s “Arizona” Vireo	RC	MA	Closed canopy, large diameter trees, dense midstory	Increase by 50%
Lucy’s Warbler	CC	MA	Trees with cavities or exfoliating bark essential for nesting	Increase by 50%
Yellow “Sonoran” Warbler	RC	MA	Dense understory	Increase by 50%
Gilded Flicker	RC	MA	Large trees for cavities	Maintain/Determine Status
Thick-billed Kingbird	CC	MA	Large deciduous trees in open areas	Maintain/Determine Status
Bell’s “Least” Vireo	RC	MA	Closed canopy, large diameter trees, dense midstory (nonbreeding in Cape region)	Maintain/Determine Status
Crissal Thrasher	RC	MA	Dense vegetation	Maintain/Determine Status
Lawrence’s Goldfinch	CC	MA	Near weedy fields, where water is available; substantial shrub understory (winter)	Maintain/Determine Status
Bald Eagle (winter population)	RC	MA	Large trees and snags for roosting, fish and other food sources free of contaminants	Maintain
Abert’s Towhee	CC	MA	Dense understory	Maintain
Gila Woodpecker	RC	PR	Trees or columnar cactus that can be excavated for	Double

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
White-winged Dove	RC	PR	cavities	Increase by 50%
Buff-collared	RC	PR	Generalist	Increase by 50%
Nightjar			Adjacent to thorn forest and desertscrub (H&W)	
Nutting's Flycatcher	RC	PR	Thornscrub and open portions of tropical deciduous forest	Increase by 50%
Sulphur-bellied Flycatcher	RC	PR	Riparian vegetation and cavities	Increase by 50%
Rose-throated Becard	RC	PR	Large sycamores and/or cottonwoods	Increase by 50%
Verdin	RC	PR	Generalist	Increase by 50%
Bullock's Oriole	RC	PR	Large cottonwoods and willows	Increase by 50%
Mallard	CC	PR	Open water	Maintain/Determine Status
Common Ground-Dove	RC	PR	Generalist	Maintain /Determine Status
Long-eared Owl	RC	PR	Dense willows or salt cedar	Maintain /Determine Status
Ladder-backed Woodpecker	RC	PR	Trees or columnar cactus that can be excavated for cavities	Maintain/Determine Status
Bridled Titmouse	RC	PR	Sycamore, cottonwoods, willows often within oak zones (ABBA)	Maintain/Determine Status
Costa's Hummingbird	CC	PR	Nectar producing-flowers (nonbreeding), abundant insects (breeding) (E. Palacios pers. comm.)	Maintain
Ash-throated Flycatcher	RC	PR	Trees with cavities	Maintain
Lesser Goldfinch	RC	PR	Riparian vegetation and composite flowers	Maintain

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Habitat: Freshwater Wetlands

Location: Scattered seeps, ciénegas, backwaters, and marshes throughout the Region, along minor and major rivers especially lower portions of basins; along the Colorado River, and at the Salton Sea; includes oases found in the Baja Peninsula, and the western edge of the Sonoran Desert in Arizona and California.

Dominant plant species: Mixture of aquatic emergent vegetation, dominated by cattail (*Typha domingensis*) and rushes (*Scirpus* spp.). Oases include: California Fan Palm (*Washingtonia filifera*), Blue Fan Palm in northern Baja California only (*Erythea armata*), Sky-duster Palm in the Baja peninsula (*Washingtonia robusta*), feral Date Palm (*Phoenix dactylifera*), in Sonora Mexican Blue Palm (*Sabal uresana*), and cottonwoods and willows.

Physical/biological descriptions: Freshwater, from small seeps (<1 ha) to large cienegas (e.g., Cienega Santa Clara), also lakes and reservoirs; includes isolated areas of permanent springs, and moist canyons within xeric habitats.

Threats: Groundwater pumping, draining, water diversions/water extraction; land conversion/urban and agricultural development; nonnative/invasive species (fish, bullfrogs, crayfish, aquatic plants), and unsustainable grazing.

Opportunities for cooperation on conservation actions: Coordinated projects submitted to the North American Wetland Conservation Act and the Lower Colorado River Multi Species Conservation Plan; work with the U.S. Fish and Wildlife Service's Refuge System.

Primary Conservation Needs/Actions: Promote no net loss, encourage restoration of destroyed or degraded sites; awareness; protect breeding bird colonies; prevention of human disturbance, prevention of human development in breeding areas; protect breeding sites where Belding's Yellowthroats remain; maintaining water sources and water tables.

Priority Species for Freshwater Wetlands				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Least "California" Tern	RC	IM	Open water for fishing and open beach for nesting (small islets)	Double
Black Rail	CC	IM	Shallow water, bulrush, near upland	Increase by 50%
Black "California" Rail	RC	IM	Shallow water, bulrush, near upland	Increase by 50%
Clapper "Yuma" Rail	RC	IM	Mixed age cattail stands, near open water	Double
Gull-billed	RC	IM	Open water for fish and	Increase by 50%

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
“Western” Tern			open beach to nest (small islets)	
Belding’s Yellowthroat	CC	IM	Dense cattails, reeds; oases; ungrazed	Double
Short-eared Owl	CC	MA	Dry marsh (nonbreeding)	Double
Clapper Rail (includes other subspp.)	RC	MA	Mixed age cattail stands, near open water	Double
Bald Eagle (winter population)	RC	MA	Large trees, free of human disturbance, near permanent water	Increase by 50%
Virginia Rail	RC	MA	Freshwater emergent marshes	Increase by 50%
Snowy Plover	CC	MA	Open shore for nesting	Increase by 50%
American Bittern	RC	MA	Cattail marsh	Maintain /Determine Status
Least Bittern	RC	MA	Dense cattail stands	Maintain /Determine Status
Wood Stork	RC	MA	Water depths of <50cm, often 10-30cm; swamps, ponds, and marshes; most fish taken are >1 yr. suggesting need for long hydroperiods.	Maintain /Determine Status
Little Blue Heron	CC	MA	Shallow water	Maintain/Determine Status
Least Tern (all subspecies)	CC	MA	Open water for fish and open beach to nest (small islets)	Maintain/Determine Status
Northern Pintail	CC	PR	Lakes and marshes	Double
Fulvous Whistling-Duck	RC	PR	Marshes with cattails and other dense vegetation	Double
Lesser Scaup	CC	PR	Lakes and ponds	Double
Least Grebe	RC	PR	Ephemeral flooded shallow basins (freshwater), bordered by emergent aquatic vegetation, dense cattails (nest)	Double
Whimbrel	CC	PR	Mudflats, shallow pools, marshes, sandy beaches	Double
Long-billed Curlew	CC	PR	Lakes with mudflats, shallow pools	Increase by 50%
Marbled Godwit	CC	PR	Mudflats, shallow pools	Increase by 50%
Gull-billed Tern (all subspecies)	CC	PR	Open water for fish and open beach to nest (small islets)	Increase by 50%

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Marsh Wren	RC	PR	Cattail marsh	Increase by 50%
Snow “Lesser” Goose (western central flyway)	RC	PR	Extensive marshes, lakes, especially near agricultural fields	Maintain/Determine Status (110,000 NAWMP popn. obj.)
Mallard	CC	PR	Open water	Maintain/Determine Status
Clark’s Grebe	CC	PR	Open water	Maintain/Determine Status
Northern Harrier	RC	PR	Marsh (nonbreeding)	Maintain/Determine Status
Tricolored Heron	RC	PR	Small dense trees and shrubs near water	Maintain /Determine Status
American Avocet	CC	PR	Mudflats, shallow pools	Maintain/Determine Status
Western Sandpiper	CC	PR	Mudflats, shallow pools	Maintain/Determine Status
Caspian Tern	RC	PR	Lakes and large rivers, with shell, sandy or muddy shore	Maintain /Determine Status
Barn Owl	RC	PR	Cavities or other nesting structures; hunts over marshes	Maintain /Determine Status
Savannah “Large-billed” Sparrow	RC	PR	Saltgrasses; low marsh areas	Maintain/Determine Status
Gadwall	RC	PR	Marshes and lakes	Maintain
Blue-winged Teal	RC	PR	Marshes and lakes	Maintain
Cinnamon Teal	RC	PR	Marshes and lakes	Maintain
Northern Shoveler	RC	PR	Marshes and lakes	Maintain
Green-winged Teal	RC	PR	Marshes and lakes	Maintain
Canvasback	RC	PR	Lakes	Maintain
Redhead	RC	PR	Lakes	Maintain
Ring-necked Duck	RC	PR	Wooded ponds, marshes, and lakes	Maintain
Double-crested Cormorant	RC	PR	Marshes, pools, open water	Maintain

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Habitat: Coastal Wetlands

Location: Occurring inland from the intertidal zone, along the coast of the Gulf of California and the Pacific Ocean; also shore habitat found intermittently along the coast line throughout the Region, between low tide and high tide (intertidal zone); also mangroves, along the coast, north to Punta Sargento on the mainland and Bahía de los Angeles on the west side of the Gulf.

Dominant plant species: Saltgrass (*Distichlis spicata*), Eelgrass (*Zostera marina*), emergent vegetation such as cordgrass (*Spartina foliosa*), Pickleweed (*Allenrolfea occidentalis*), and Glasswort (*Salicornia virginica*). Mangroves include: Red Mangrove (*Rhizophora mangle*), White Mangrove (*Laguncularia racemosa*), and Black Mangrove (*Avicennia germinans*). Waves and salt limit types of plants in shore habitat, however species such as, Saltbush (*Atriplex leucophylla*), and Sand-verbena (*Ambrosia chamissonis*) occur.

Physical/biological descriptions: Salt water or brackish; marshes, coastal lagoons, estuaries, sheltered bays, hummocks, mangroves, and salt flats; includes, sand, shell, rock shores/beaches, mudflats, tide pools, dunes, sand bars, and reefs in the intertidal zone or strand; occasionally rocky headlands, levies, or cliffs; tide-flooded estuaries with little freshwater input.

Threats: Greatly impacted by human activities, land use conversion, over-fishing, pollution, off-road vehicles, unsustainable wood extraction, silting, sewage, and other pollution; human disturbance particularly during nesting; urban development, transportation, aquaculture, hunting, unsustainable grazing, and tourism.

Opportunities for cooperation on conservation actions: High existing awareness of coastal concerns; the presence of charismatic species (sea turtles and whales); develop local groups to protect nesting colonies; use nesting colonies as an educational opportunity; known for shorebird migration and wintering; work with existing Esteros Working Group for the Gulf of California, also there is an initiative to protect mangrove estuaries within this region.

Primary Conservation Needs/Actions: Protect nesting grounds from disturbance and development, promote sustainable fisheries; protect eelgrass beds from pollution, dredging, and other damage; protect nesting colonies and develop education programs; modify Norma Oficial 022 in order to prevent further mangrove deforestation; awareness/education.

Priority Species for Coastal Wetlands

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Least "California" Tern	RC	IM	Salt marsh, coastal lagoons, estuaries Sandy beaches and barrier strands	Double

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Bald Eagle - resident	RC	IM	Protection for nesting and foraging (Bahia Magdalena)	Increase by 50%
Southwestern popn. Snowy Plover	CC	IM	Undisturbed barrier beaches; sand flats, sandy dune-backed beaches, sand spits, salt flats	Increase by 50%
Gull-billed "Western" Tern	RC	IM	Salt marsh, coastal lagoons Bare soil, upper intertidal, zone, free of disturbance	Increase by 50%
Northern Pintail	CC	PR	Estuaries, bays	Double
Whimbrel	CC	MA	Lagoons, tidal mudflats, beaches, rocky shores, (nonbreeding)	Double
Red Knot	CC	MA	Tidal mudflats (nonbreeding)	Double
Sanderling	CC	MA	Sandy beaches, and rocky shores, reefs, mudflats (nonbreeding)	Double
Long-billed Curlew	CC	MA	Tidal mudflats and coastal lagoons (nonbreeding)	Increase by 50%
Marbled Godwit	CC	MA	Large expanses of exposed mudflats, low disturbance, isolated roosting sites, tidal mudflats (nonbreeding)	Increase by 50%
Little Blue Heron	CC	MA	Mangrove generalist	Maintain/Determine Status
Reddish Egret	CC	MA	Coastal lagoon, estuaries, mangroves	Maintain/Determine Status
Wood Stork	RC	MA	Water depths of <50cm, often 10-30cm; estuarine marshes, tidal pools/creeks, mangroves	Maintain /Determine Status
Black Oystercatcher	CC	MA	Rocky shores, reefs, and breakwaters	Maintain/Determine Status
Least Tern	CC	MA	Sandy beaches and barrier strands	Maintain/Determine Status
Black Skimmer	CC	MA	Sand flats, dry mudflats and dikes for breeding; shallow coast lagoons; undisturbed	Maintain/Determine Status
Brant	CC	PR	Sea grasses (eelgrass) (nonbreeding)	Double
Lesser Scaup	CC	PR	Coastal lagoons,	Double

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Surf Scoter	CC	PR	estuaries (nonbreeding)	Double
Horned Grebe	CC	PR	Estuaries (nonbreeding)	Double
Clapper Rail (all subspecies)	RC	PR	Bays and estuaries (nonbreeding)	Double
Dunlin	CC	PR	Mangroves	Double
Short-billed Dowitcher	CC	PR	Coastal lagoons, estuaries, tidal mudflats (nonbreeding)	Double
Pelagic Cormorant	CC	PR	Shallow water, tidal mudflats (nonbreeding)	Increase by 50%
Magnificent Frigatebird	CC	PR	Sea cliffs, rocky break waters (nonbreeding)	Increase by 50%
Roseate Spoonbill	RC	PR	Near-shore waters, mangroves, and islands	Increase by 50%
Ruddy Turnstone	RC	PR	Dense trees and shrubs near water, mangroves	Increase by 50%
Surfbird	CC	PR	Tidal mudflats, beaches, rocky shores, reefs, and breakwaters (nonbreeding)	Increase by 50%
Yellow-footed Gull	CC	PR	Rocky shores and breakwaters (nonbreeding)	Increase by 50%
Gull-billed Tern	CC	PR	Generalist	Increase by 50%
Mangrove Vireo	RC	PR	Salt marsh, coastal lagoons	Increase by 50%
Yellow "Mangrove" Warbler	RC	PR	Bare soil, upper intertidal, zone, free of disturbance	Increase by 50%
Clark's Grebe	CC	PR	Mangrove	Maintain/Determine Status
Wilson's Plover	CC	PR	Mangrove	Maintain/Determine Status
American Avocet	CC	PR	Coastal lagoons, mudflats, upper salt marsh	Maintain/Determine Status
Western Sandpiper	CC	PR	Coastal lagoons	Maintain/Determine Status
Tricolored Heron	RC	PR	Exposed mudflats, remote undisturbed roosting sites; coastal lagoons (nonbreeding)	Maintain /Determine Status
American Oystercatcher	CC	PR	Dense clumps of small trees/shrubs	Maintain/Determine Status
Black Turnstone	CC	PR	Sandy or rocky beaches	Maintain/Determine Status
Heermann's Gull	CC	PR	Rocky beaches (nonbreeding)	Maintain/Determine Status
Caspian Tern	RC	PR	Beaches (nonbreeding)	Maintain/Determine Status
			Coastal lagoons,	Maintain/Determine

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective Status
Snow "Lesser" Goose (western Central Flyway)	RC	PR	estuaries, shell, sand, or rocky beaches Estuaries (nonbreeding)	Maintain
Gadwall	RC	PR	Coastal lagoons (nonbreeding)	Maintain
Blue-winged Teal	RC	PR	Coastal lagoons (nonbreeding)	Maintain
Cinnamon Teal	RC	PR	Coastal lagoons (nonbreeding)	Maintain
Northern Shoveler	RC	PR	Estuaries (nonbreeding)	Maintain
Green-winged Teal	RC	PR	Estuaries (nonbreeding)	Maintain
Canvasback	RC	PR	Coastal bays and lagoons (nonbreeding)	Maintain
Redhead	RC	PR	Coastal bays and lagoons (nonbreeding)	Maintain
Elegant Tern	CC	PR	Bays and estuaries (foraging), sandy barrier beaches, dry salt flats, scattered vegetation	Maintain

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Habitat: Islands

Location: Throughout the Gulf of California; and other near shore islands in the Pacific Ocean including Isla de Cedros, Islas San Benito, Isla Natividad, Isla Raza, and Isla Tiburon.

Dominant plant species: Species from mainland desertscrub, cliff/rock, mangroves, and coastal wetlands.

Physical/biological descriptions: Often desertic and predominantly rocky, however some of the larger islands have shrublands and forests.

Threats: Introduced nonnative species (e.g., cats, rodents, goats, other livestock, ice plant), human disturbance of breeding colonies, overuse of resources, egg collection, pollution, overfishing of prey species.

Opportunities for cooperation on conservation actions: The islands form a Natural Protected Area in the Gulf of California (Refugio de Vida Silvestre de las Islas del Golfo de California); several institutions work toward the conservation of these islands: Grupo de Ecología y Conservación de Islas (GECI, www.islandconservation.org), Comunidad y Biodiversidad, AC (COBI), Conservación de Territorio Isular (ISLA), Prescott College, A.C., and the National Institute of Ecology (INE).

Primary Conservation Needs/Actions: Remove exotic species, exclude livestock from nesting colonies, protect colonies from disturbance, and educate fishermen; reduce threats from pollution, oil spills, overfishing of prey species, and entanglement in fishing nets and lines.

Priority Species for Islands

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Black-vented Shearwater	CC	IM	Soft soil for burrows, free of introduced mammals	Double
Xantus's Murrelet	CC	IM	Rock crevices and burrows, free of introduced mammals	Double
Craveri's Murrelet	CC	IM	Rock crevices and burrows, free of introduced mammals (endemic)	Increase by 50%
Black Storm-Petrel	CC	IM	Rock crevices and burrows, free of introduced mammals	Maintain/Determine Status
Least Storm-Petrel	CC	IM	Rock crevices, free of introduced mammals (endemic)	Maintain/Determine Status
Yellow-footed	CC	MA	Rocky substrate	Increase by 50%

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Gull			(endemic)	
Reddish Egret	CC	MA	Desert scrub	Maintain/Determine Status
Black Oystercatcher	CC	MA	Rocky shores (winter)	Maintain/Determine Status
Least Tern	CC	MA	Sandy barrier beaches and dry saltflats, scattered vegetation	Maintain/Determine Status
Cassin's Auklet	RC	MA	Burrows or rock crevices for nests, free of introduced mammals	Maintain/Determine Status
Heermann's Gull	CC	MA	Bare soil, free of disturbance (near endemic)	Maintain
Elegant Tern	CC	MA	Bare soil, free of disturbance (endemic)	Maintain
Pelagic Cormorant	CC	PR	Near-shore islands (winter)	Increase by 50%
Magnificent Frigatebird	CC	PR	Mangroves for nesting	Increase by 50%
Leach's Storm-Petrel	RC	PR	Soil for burrows or rock crevices for nests, free of introduced mammals	Maintain /Determine Status
Red-billed Tropicbird	CC	PR	Rock crevices and burrows, free of introduced mammals	Maintain/Determine Status
Masked Booby	CC	PR	Bare soil, free of disturbance	Maintain/Determine Status
Blue-footed Booby	CC	PR	Bare soil, free of disturbance	Maintain/Determine Status
Brown Booby	CC	PR	Bare soil, free of disturbance	Maintain/Determine Status
American Oystercatcher	CC	PR	Sandy, rocky coast	Maintain/Determine Status
Brandt's Cormorant	CC	PR	Near-shore islands	Maintain
Double-crested Cormorant	RC	PR	Free of human disturbance	Maintain

* CC=Continental Concern Species; RC=Regional Concern Species

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Habitat: Off-Shore/Pelagic

Location: Pacific Ocean waters from the coast west 200 nautical miles or 230 statute miles and waters in the interior of the Gulf of California.

Dominant plant species: None.

Physical/biological descriptions: Open water supplied by various currents; Pacific Ocean waters enriched by the up-welling of nutrient rich deep, cold water.

Threats: Depletion of sardines and other fish stocks, fishing lines and nets, pollution, oil spills.

Opportunities for cooperation on conservation actions: CONANP, Gulf of California/Sea of Cortez initiatives.

Primary Conservation Needs/Actions: A large number of species using the open ocean within territorial boundaries during the non-breeding months. Needs are: protection from entanglement in fishing lines and nets, protection from pollution and oil spills, and protection of fish stocks. The “Population Objective” given is based on global population trend. The objective is given to indicate the trend and the magnitude of the losses both on the breeding and wintering areas and provide a target for the restoration of these species. This habitat type, more than others, can only be conserved by wide-scale, national and international policy and cultural shifts that are, for the most part, beyond the capacity of the SJV. However, SJV partners working off-shore can use this information to increase awareness and devise solutions to entanglement problems and unsustainable fishing of certain stocks. This information is provided to show a complete picture of the diversity of the SJV.

Priority Species for Off-Shore/Pelagic Habitat - (non-breeding)

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Black-vented Shearwater	CC	IM	Open sea, free from entanglement in fishing lines and nets, and with adequate fish stocks	Double
Xantus's Murrelet	CC	IM	“	Double
Craveri's Murrelet	CC	IM	“	Increase by 50%
Black Storm-Petrel	CC	IM	“	Maintain/Determine Status
Least Storm-Petrel	CC	IM	“	Maintain/Determine Status
Laysan Albatross	CC	IM	“	Maintain
Cassin's Auklet	RC	MA	“	Maintain/Determine Status
Surf Scoter	CC	PR	“	Double
Black-footed Albatross	CC	PR	“	Increase by 50%
Pink-footed	CC	PR	“	Increase by 50%

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Shearwater				
Sooty Shearwater	CC	PR	“	Increase by 50%
Pelagic	CC	PR	“	Increase by 50%
Cormorant				
Flesh-footed Shearwater	RC	PR	“	Maintain/Determine Status
Buller’s Shearwater	RC	PR	“	Maintain/Determine Status
Short-tailed Shearwater	CC	PR	“	Maintain/Determine Status
Leach’s Storm-Petrel	RC	PR	“	Maintain/Determine Status
Ashy Storm-Petrel	CC	PR	“	Maintain/Determine Status
Wedged-rumped Storm-Petrel	CC	PR	“	Maintain /Determine Status
Red-billed Tropicbird	CC	PR	“	Maintain/Determine Status
Masked Booby	CC	PR	“	Maintain/Determine Status
Brown Booby	CC	PR	“	Maintain/Determine Status
Laysan Albatross	CC	PR	“	Maintain

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Habitat: Cliff/Rock

Location: Sparingly throughout the Region, especially in canyons and mountainous areas.

Dominant plant species: Various species depending on the surrounding habitat, including lichens, agaves (*Agaves* spp.), yuccas (*Yucca* spp.), and oaks (*Quercus* spp.).

Physical/biological descriptions: Natural ledges and crevices in cliff faces, natural caves and overhangs, flat rocky areas, rocky slopes, outcrops, and steep cliffs.

Threats: Recreation, wind farms.

Opportunities for cooperation on conservation actions: Areas have been identified as important for nesting raptors and are also being protected for scenic value; work with landowners to protect sensitive sites.

Primary Conservation Needs/Actions: Education/awareness, prevent disturbance to nests, and identify and protect other important nesting sites.

Priority Species for Cliff/Rock Habitat				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Golden Eagle	RC	MA	Cliffs for nests	Increase by 50%
Rock Wren	RC	PR	Desert mesas, rocky areas	Increase by 50%
White-throated Swift	CC	PR	Cliffs free of disturbance	Maintain/Determine Status

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Habitat: Urban

Location: Cities and towns throughout the Region.

Dominant plant species: A diversity of native and nonnative species primarily nonnative landscape species including Eucalyptus (*Eucalyptus* spp.), palms (*Washingtonia* spp. and *Phoenix* spp.), and Olive Trees (*Elaeagnus angustifolia*).

Physical/biological descriptions: Heavily altered, paved, non-natural food sources, and sources of water.

Threats: Domestic animals, pollution, pesticides, wildlife diseases, feral animals (cats), general threats due to urban infrastructure (i.e. electrocutions, windows, collisions), invasive/plants.

Opportunities for cooperation on conservation actions: Most environmental organizations are located in urban areas and present opportunities for environmental education and citizen science projects; working with planners to create wildlife-friendly development, habitat restoration, tourism.

Primary Conservation Needs/Actions: Increase awareness, planned development, water conservation, greenbelts, raptor-friendly power poles, public outreach/education, native landscaping, introduce “Cats Indoors!” type programs, pollution control.

Priority Species for Urban Habitat				
Species	Concern Category*	Cons. Action*	Habitat Need	30-Year Population Objective
Gila Woodpecker	RC	PR	Generalist	Double
White-winged Dove	RC	PR	Generalist	Increase by 50%
Cactus Wren	RC	PR	Generalist	Increase by 50%
Barn Owl	RC	PR	Structures for nesting	Maintain
Abert's Towhee	CC	PR	Generalist	Maintain
Lesser Goldfinch	RC	PR	Generalist; feeders and flowering plants	Maintain

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Habitat: Agriculture

Location: In valleys and broad flat areas throughout the Region.

Dominant plant species: Cotton, alfalfa, wheat, vineyards, citrus, pecan, and other orchards.

Physical/biological descriptions: Monoculture, low-diversity, shelter belts, disturbed fields, irrigated fields, fallow fields, and sod farms.

Threats: Pesticides, urban encroachment, development, water scarcity, abandonment (economic pressures), domestic animals, and wildlife conflicts with farmers.

Opportunities for cooperation on conservation actions: Cooperating with ranchers/farmers on various projects (wildlife-friendly, added value projects), and working on shorebird, waterfowl, and winter raptor populations.

Primary Conservation Needs/Actions: Increase collaborative efforts, reduce pesticide use, promote organic farming, water conservation.

Priority Species for Agricultural Habitats				
Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Sprague's Pipit	CC	MA	Open fields with few to no shrubs (winter)	Double
Mountain Plover	CC	MA	Alfalfa fields, sod farms (winter)	Maintain/Determine Status
Northern Pintail	CC	PR	Available waste grain (winter)	Double
Whimbrel	CC	PR	Fields, sod farms (winter)	Double
Short-billed Dowitcher	CC	PR	Fields, sod farms (winter)	Double
Short-eared Owl	CC	PR	Open areas (winter)	Double
Long-billed Curlew	CC	PR	Fields, sod farms (winter)	Increase by 50%
Lark Bunting	RC	PR	Generalist (winter)	Increase by 50%
Mallard	CC	PR	Available waste grain (winter)	Maintain/Determine Status
Northern Harrier	RC	PR	Open fields (winter)	Maintain/Determine Status
Swainson's Hawk	CC	PR	Open fields	Maintain/Determine Status
American Avocet	CC	PR	Fields, sod farms (winter)	Maintain/Determine Status
Barn Owl	RC	PR	Fields near cavities, structures for nesting	Maintain/Determine Status
Lawrence's Goldfinch	CC	PR	Near weedy fields, where water is available;	Maintain/Determine Status

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Snow "Lesser" Goose	RC	PR	substantial shrub understory (winter) Available waste grain (winter)	Maintain
Burrowing Owl	RC	PR	Open, semi-open desert, with burrows	Maintain
Western Meadowlark	RC	PR	Generalist	Maintain

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Focus Areas for the Arid Borderlands Region

Focus Areas are considered important tools for conserving species of concern. A Focus Area is a location that has been identified as having significant bird populations and habitat values, and/or the potential to be restored to a condition that supports bird populations. These places on the landscape can be used to concentrate conservation activities and mobilize action. Conservation activities such as acquisition, restoration, and education can be supported and encouraged, and accomplishments can be showcased.

The Focus Area list is dynamic and will be changed based on objectives of concern species and their habitat needs. These lists will be augmented with areas that might not currently have priority birds but have high restoration potential. Additional Focus Areas will undoubtedly be needed because the habitat contained in all the listed Focus Areas will not likely meet the population objectives of all of the priority species.

The following is a list of the 81 Focus Areas in the Arid Borderlands Region. They are a combination of the Important Bird Areas as designated by the California and Arizona IBA programs and the Áreas de Importancia para la Conservación de las Aves en México (AICA). Descriptions of Focus Areas can be found at <http://ca.audubon.org/IBA.htm> for California, <http://www.tucsonaudubon.org/azibaprogram/index.htm> for Arizona, and <http://conabioweb.conabio.gob.mx/aicas/doctos/aicas.html> for Mexico. A map of the combined SJV Focus Areas will be produced at a later date and included on the SJV website and in subsequent versions of this Plan.

Focus areas in California

- AB-Cal-1 Anza-Borrego Riparian
- AB-Cal-2 Argus Range - Southern
- AB-Cal-3 Big Morongo Canyon
- AB-Cal-4 Cima Dome
- AB-Cal-5 Colorado Desert Microphyll Woodland
- AB-Cal-6 Deep Springs Valley
- AB-Cal-7 East Mojave Peaks
- AB-Cal-8 East Mojave Springs
- AB-Cal-9 Edwards Air Force Base
- AB-Cal-10 Elephant Tree Forest
- AB-Cal-11 Imperial Valley
- AB-Cal-12 Lancaster
- AB-Cal-13 Lower Colorado River Valley
- AB-Cal-14 Mojave River
- AB-Cal-15 North Mojave Dry Lakes
- AB-Cal-16 Owens Lake
- AB-Cal-17 Salton Sea
- AB-Cal-18 Shoshone-Tocopa Area

Focus areas in Arizona

AB-Az-1 Agua Fria National Monument Riparian Corridor
AB-Az-2 Bill Williams River National Wildlife Refuge
AB-Az-3 Boyce Thompson Arboretum/Arnett-Queen Creeks
AB-Az-4 Imperial Reservoir
AB-Az-5 Lower Colorado River, Gadsden Riparian Area
AB-Az-6 Lower Gila River, Quigley Wildlife Area
AB-Az-7 Mittry Lake State Wildlife Area
AB-Az-8 Sabino Creek and Lower Bear Creek
AB-Az-9 Salt and Lower Gila rivers Ecosystem
AB-Az-10 Salt-Verde Riparian Ecosystem

Focus areas in Baja California

AB-BCN-1 Delta del Rio Colorado - AICA106 (and Sonora)
AB-BCN-2 Isla Angel de la Guarda - AICA 225
AB-BCN-3 Archipiélago de Bahía de Los Angeles - AICA 218
AB-BCN-4 Isla San Pedro Martir - AICA 116
AB-BCN-5 Archipiélago Salsipuedes - AICA 118
AB-BCN-6 Isla San Jerónimo - AICA 216
AB-BCN-7 Sistema San Luis Gonzaga - AICA 119
AB-BCN-8 Isla Rasa - AICA 204
AB-BCN-9 Isla Guadalupe - AICA 141
AB-BCN-10 Area San Quintin - AICA 102

Focus areas in Baja California Sur

AB-BCS-1 Bahía Magdalena-Almejas - AICA 91
AB-BCS-2 Ensenada de la Paz - AICA 93
AB-BCS-3 Oasis San Ignacio - AICA 92
AB-BCS-4 Isla Natividad - AICA 98
AB-BCS-5 Oasis La Purisima y San Isidro - AICA 142
AB-BCS-6 Isla Santa Inés - AICA 214
AB-BCS-7 Oasis San Pedro de la Presa - AICA 143
AB-BCS-8 Oasis Mulegé AICA 238
AB-BCS-9 Sierra la Giganta - AICA 94
AB-BCS-10 Isla Asunción - AICA 97
AB-BCS-11 Complejo Lagunar San Ignacio - AICA 95
AB-BCS-12 Complejo Lagunar Ojo de Liebre - AICA 101
AB-BCS-13 Archipiélago Loreto - AICA 113
AB-BCS-14 Isla San Roque - AICA 96
AB-BCS-15 Isla Espíritu Santo - AICA 108
AB-BCS-16 Isla Cerralvo - AICA 107
AB-BCS-17 Isla Tortuga - AICA 215
AB-BCS-18 Isla San Ildefonso - AICA 114
AB-BCS-19 Isla San Marcos - AICA 115
AB-BCS-20 Oasis Punta San Pedro-Todos Santos - AICA 144
AB-BCS-21 Estero de San José - AICA 140

AB-BCS-22 Sierra de La Laguna - AICA 90
AB-BCS-23 Archipiélago San José - AICA 109

Focus areas in Sonora

AB-Son-1 Delta del Río Colorado - AICA 106 (and Baja California)
AB-Son-2 Reserva El Pinacate y Gran Desierto de Altar - AICA 124
AB-Son-3 Sistema Tóbari - AICA 129
AB-Son-4 Zonas Húmedas de Yávaros - AICA 130
AB-Son-5 Agiabampo - AICA 131 (and Sinaloa)
AB-Son-6 Sistema Guásimas - AICA 207
AB-Son-7 Sistema de Algodones - AICA 208
AB-Son-8 Estero Lobos - AICA 209
AB-Son-9 Estero del Soldado - AICA 212
AB-Son-10 Sierra Bacha /Sierra del Viejo-Coast Area
AB-Son-11 Carrizo Plains/Arroyo Bacoachito
AB-Son-12 Isla San Pedro Nolasco - AICA 117
AB-Son-13 Isla Tiburón-Canal, El Infiernillo-Estero Santa Cruz - AICA 226
AB-Son-14 Cuenca del Río Yaqui - AICA 127 (and Pacific Lowlands)
AB-Son-15 Bahía e Islas de San Jorge - AICA 123
AB-Son-16 Bahía Adair - AICA 125

Focus areas in Sinaloa

AB-Sin-1 Agiabampo - AICA 131 (and Sonora)
AB-Sin-2 Bahía Lechugilla - AICA 122
AB-Sin-3 Bahía Navachiste - AICA 227
AB-Sin-4 Bahía Santa María - AICA 228 (and Pacific Lowlands Region)

The AICA number following some of the Mexican Focus Areas refers to the numbering system found in the book *Áreas de Importancia para la Conservación de las Aves en México*.