

**Sonoran Joint Venture  
Bird Conservation Plan  
Version 1.0**



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## **Executive Summary**

The Sonoran Joint Venture Bird Conservation Plan (Plan) provides the biological foundation for the activities of the Sonoran Joint Venture (SJV). The Plan summarizes the status of avian species, prioritizes these species, provides habitat discussions and conservation recommendations, and lists Focus Areas for conservation action. This Plan will be a blueprint for regional bird conservation. It will guide the SJV staff, Board, and committees in their actions and inform SJV partners of beneficial activities. Finally and most importantly, this Plan demonstrates and emphasizes the need for conservation action and for the resources to achieve the SJV's biological objectives.

There are approximately 740 species documented in the SJV area. Of those, about 667 occur regularly. An avifaunal analysis that assesses the status and prioritizes the birds found in the SJV area is one of the main purposes and unique features of the Plan. At a continental level 155 species are considered Concern Species that merit conservation attention. In addition, there are 152 Regional Concern Species.

The SJV is divided into four ecological Regions, each of which has unique habitats, birds, and conservation issues. Each Region is discussed separately as a chapter of this Plan. Continental Concern Species, assessed at the binational scale, are listed for each Region. Species found in each Region are assessed separately for the Regional Concern level. Stewardship Responsibility Species (i.e., species for which the Region has a large percent of those species' populations and thus a high degree of "responsibility" to conserve) are also presented. Concern Species are listed and ranked in Habitat Tables according to need and population objective. The habitats found within each Region have plant community, biological/physical characteristics, and threat descriptions as well as conservation actions and opportunities listed.

The Arid Borderland Region primarily comprises Mojave, Sonoran, and Vizcaino Desertscrub and the many wetland and island habitats associated with approximately 2,000 miles of coast line. In this Region there are 88 Continental Concern Species, 83 Regional Concern Species, and 20 additional Stewardship Responsibility Species. The primary habitats containing Concern Species are desertscrub, mesquite bosque, riparian, and fresh/coastal wetlands.

The Californian Coast and Mountains Region is known for coastal scrubland, chaparral, and various forest types found in the sharply rising mountains. There are also critically important coastal wetlands and breeding bird islands in this Region with several islands having distinct species and subspecies in considerable peril. Eighty-two Continental Concern Species, 41 Regional Concern Species, and 12 additional Stewardship Responsibility Species were identified. In addition to wetlands and breeding bird islands, the coastal scrublands and chaparral host a number of Concern Species.

The Mexican Highlands Region is characterized by high elevations and complex topography, where various forest types are interdigitated with desert grasslands, desertscrub, and thornscrub. There are 71 Continental Concern Species, 60 Regional Concern Species, and 30 additional Stewardship Responsibility Species. The majority of the Concern Species are found in pine-oak and mixed conifer forests, riparian, and grasslands.

The Pacific Lowlands Region is primarily an area of thornscrub, tropical deciduous forest, and coastline where several continentally important wetlands are found. There are 88 Continental Concern Species, 51 Regional Concern Species, and an additional 11 Stewardship Responsibility Species. Most Concern Species are found in tropical deciduous forest and the various coastal wetlands.

## WHAT IS THE SONORAN JOINT VENTURE?

The Sonoran Joint Venture (SJV) is a partnership of diverse organizations and individuals from the southwestern United States and northwestern Mexico that share a common commitment to bird conservation. The mission of the SJV is to protect, restore, and enhance bird populations and habitats in the southwestern United States and northwestern Mexico through collaborative partnerships. A science-based, dynamic process of adaptive conservation planning and delivery guides SJV activities. The SJV prides itself on being an active, dynamic group of partners that views bird conservation based on habitats and bird populations without regard to borders or jurisdictions.

## INTRODUCTION

The Sonoran Joint Venture is unique in many ways, geographically, biologically, and in the make up of its partnership. The SJV area covers in whole or part 10 Bird Conservation Regions (BCR) developed by the North American Bird Conservation Initiative (NABCI) (Figure 1). Elevation in the SJV area ranges from below sea level at the Salton Sea (-97 m), to sea level coast line and islands, to relatively flat desert areas, to high plateaus, and mountain ranges (3,200 m). The climate is largely desertic with extremely low rainfall occurring in high-intensity, late-summer storms or during low-intensity, winter storms. The topography and climate produce a diversity of habitats, including desert scrub, riparian, Madrean pine-oak, mixed conifer, chaparral, pinyon-juniper, desert grasslands, tropical deciduous forest, desert thornscrub, palm oases,

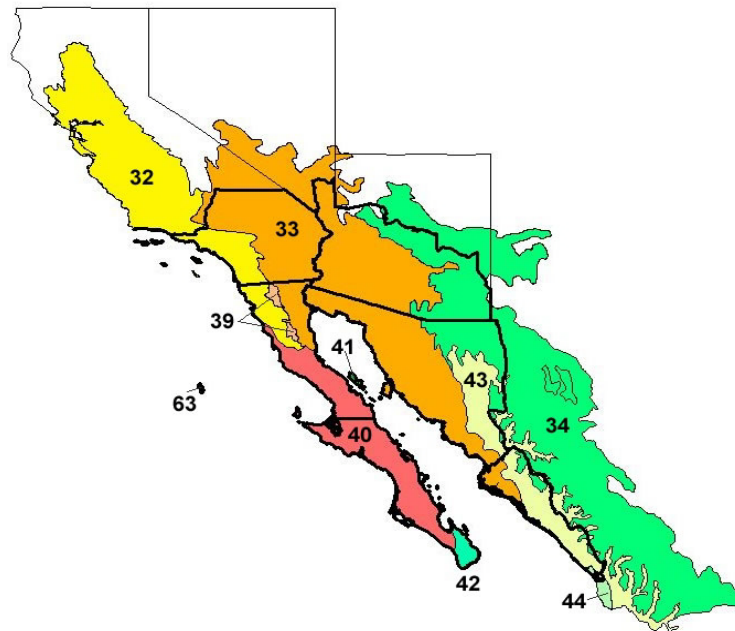


Figure 1. Geographic scope of the Sonoran Joint Venture including BCRs and state boundaries.

freshwater wetlands, coastal dunes, coastal shrublands, mangroves, estuarine, brackish and salt water wetlands, coastal lagoons, rocky islands, and halophytic brushlands. Of these, desert shrublands and grasslands, Madrean pine-oak, tropical deciduous forest, coastal scrub, chaparral, arid riparian, and the various coastal wetland environments are continentally the most unique biotas.

The avifauna is diverse with more than 740 documented bird species breeding in, wintering in and/or migrating through the SJV area (Appendix A). This represents about two-thirds of all bird species that occur in northern Mexico, the United States, and Canada. There are 25 endemic or near endemic resident or breeding species, including birds such as: Xantus's Hummingbird, Gray Thrasher, Belding's Yellowthroat, Rufous-wing Sparrow, California Gnatcatcher, Black-vented Shearwater, Least Storm-Petrel, Yellow-footed Gull, Elegant Tern, and Craveri's Murrelet (Appendix B). Additionally, there are several endemic subspecies such as Grasshopper "Arizona" Sparrow, Savannah "Large-billed" Sparrow, American "San Lucas" Robin, Yellow-eyed "Baird's" Junco, Dark-eyed "Guadalupe" Junco, and Northern "Cape" Pygmy-Owl (see Appendix B for complete lists of endemic species). There are three species that are presumed extinct but need further surveys: Guadalupe Storm-Petrel and Guadalupe Caracara from Isla Guadalupe and Imperial Woodpecker from the Sierra Madre Occidental.

Threats to the area's ecology are as diverse as the avian species found there. Land use in the SJV region is varied and long-standing. Humans have been using the area for at least 10,000 years. Vegetative species composition and successional progression have undergone significant, large-scale changes, especially due to impacts from grazing and mining from the late 1800s to the early 1900s. Since the early 1900s significant effects on the biota have come from urbanization and agriculture. Specific impacts are loss and degradation of habitat due to urban and agricultural development, ground water pumping, surface-water diversion, unsustainable grazing, non-native plant invasions, aquaculture, and recreational pressures.

Challenges for conservation are varied, but so are the opportunities. The strength of the opportunities lies in the partnerships that are developing in the SJV. The SJV is a binational partnership and is the first and only Joint Venture that was originally conceived as a binational effort. A goal of the SJV is equal representation from the United States and Mexico in all of the Joint Venture's efforts. The partnership is also multi-cultural. There are many indigenous groups in Mexico and Native American tribes/nations in the United States in the SJV area. Conservation efforts of the SJV include these groups in the partnership.



## PLAN PURPOSE

The Sonoran Joint Venture Bird Conservation Plan (Plan) provides the biological foundation for the bird conservation activities of the SJV. The Plan summarizes the status of avian species, prioritizes these species, provides habitat discussions, conservation recommendations, and lists Focus Areas for conservation action. This Plan will be a blueprint for regional bird conservation. It will guide the SJV staff, Board, and committees in their actions and inform SJV partners of actions beneficial to the Concern Species. It is not the SJV's intent that this Plan will replace existing or developing conservation plans. Instead, it summarizes elements from those plans relevant to bird conservation in the SJV area. This Plan will be revised and amended as new and more complete information becomes available, especially as monitoring and evaluation provides feedback to biological planning and thus to the assessments, objectives, and recommendations.

One of the main purposes of the Plan is to provide an avifaunal analysis that assesses the status and prioritizes the birds found in the SJV area for conservation action. One process that evaluates all bird groups and was acceptable for use for both U.S. and Mexican species was the Partners in Flight (PIF) Species Assessment Process used in the North American Landbird Conservation Plan (for Canada and the United States). The process has also been approved by the Mexican North American Bird Conservation Initiative Committee (see <http://www.rmbo.org/pubs/downloads/Handbook.pdf> for a complete description of the assessment process). The PIF Species Assessment Process assesses vulnerability factors at two spatial scales (continental and regional) for each species in the SJV area. It also includes rule sets for selecting priority species. Priority species from other bird initiative (i.e., shorebirds, waterbirds, and waterfowl) plans are also included when the species are found in the SJV area (see Appendices C, D, and E). The assessment process results in tables of SJV Continental and Regional Concern Species.

Another main purpose is to provide useful conservation information about Concern Species. After Concern Species are determined by the avifaunal analysis they are sorted into habitat types, habitat characteristics necessary for survival and reproduction are described, appropriate habitat management actions are suggested, and population objectives are provided. This information is presented in a "user-friendly" manner that relies on Concern Species Lists and habitat tables for quick reference.

One of the important aspects of this Plan is that it places SJV species and habitats in a continental context. The process of assessing status and prioritizing bird species considers both the hemispheric and regional levels (the process is explained later in the Plan). This focuses the SJV's efforts on the highest priority species and actions that are needed for overall biodiversity and provides an ecological landscape perspective rather than a perspective based on political boundaries.

There are a few subjects not included in this Plan that often appear in other similar conservation plans.

Quantitative habitat objectives are not included (i.e., number of acres of different habitats, habitat conditions, and locations). This is one of the next phases of the SJV's bird conservation planning process and will require specific funding and expertise. The population objectives that are given provide the direction and magnitude of the conservation need for each species and are measurable. Habitat and other needs for successful reproduction and survival (limiting factors) and recommendations to achieve these needs provide information to reverse declines or maintain populations. The habitat information included will allow effective conservation to proceed until habitat objectives can be quantified. Habitats are not prioritized by any specific analytical tool. There are priority bird species living in each of the habitat types discussed. However, the SJV has a large percentage of the world's extent of Sonoran-Mojave desertscrub, chaparral/coastal scrub, Madrean pine-oak forests, arid riparian and tropical deciduous forest, as well as globally significant coastal wetlands and breeding bird islands. These are therefore considered important habitats in the SJV area.

Accountability and measurement of progress is an important component of the SJV's work. This Plan does not include monitoring or evaluation metrics. They are viewed as part of the next planning phases. The SJV Technical Committee, which advises the SJV on scientific aspects, is currently (2006) developing a Monitoring and Evaluation Plan, which will include priorities, protocols, ways to coordinate efforts, and methods by which new information will be used in Conservation Plan updates, thus providing the adaptive management feedback loop to improve our objectives and recommendations.

Some elements of the Monitoring and Evaluation Plan will be:

- Needs Assessment.
- Baseline data development.
- Long-term monitoring program.
- Effectiveness monitoring.
- National and international monitoring programs coordination.
- Use of data repositories and the Avian Knowledge Network.
- Creation of a system to compile progress toward meeting objectives.

Focus Areas are specific locations/sites where conservation work can have a significant impact. The Focus Areas listed in this Plan are a combination of 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. 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. Focus Areas are currently listed by state and BCR for each Region. Summaries for the 164 Focus Areas will appear at a later date on the SJV website and/or as an addendum to this Plan. The summaries will include priority avifauna and important conservation needs and actions.

Finally, and most importantly, this Plan demonstrates and emphasizes the need for conservation actions and the resources to implement the recommendations and achieve the objectives set forth within the Plan.

## SCOPE

This Plan considers in its analyses all bird species that regularly breed or use the SJV region in the nonbreeding period. In the United States, this includes species from the five bird initiatives: waterfowl, waterbirds, shorebirds, landbirds, and resident game birds. Introduced species are assessed and recommendations may be given. Subspecies and populations of regional importance are also considered. A complete list of regularly occurring species and subspecies recorded in the SJV area is found in Appendix A.

Geographically, the SJV area includes southern Arizona, southern California, and the Mexican states of Sonora, Sinaloa, Baja California, and Baja California Sur, as well as the Gulf of California and Pacific Ocean islands (Figure 1). SJV boundaries were determined by partners in the U.S. and Mexico. However, the avifaunal analysis has been conducted for entire BCRs because data used for the avifaunal analysis are available only by BCRs. Aligning SJV boundaries to BCR lines might be an option in the future in order to include the entire ranges of endemic bird species. The following BCRs, as described by the NABCI, are included in whole or part within the SJV boundaries.

Coastal California – BCR 32  
Sonoran and Mojave Deserts – BCR 33  
Sierra Madre Occidental – BCR 34  
Sierras de Baja California – BCR 39  
Desierto de Baja California – BCR 40  
Islas del Golfo de California – BCR 41  
Sierra y Planicies de El Cabo – BCR 42  
Planicie Costera, Lomeríos y Cañones de Occidente – BCR 43  
Marismas Nacionales – BCR 44  
Isla Guadalupe - BCR 63

Because of the large number of BCRs (10) in the SJV area, BCRs were combined into four “Regions” to facilitate use of this Plan, take advantage of existing data, and provide an ecological base. The Regions chosen were used in the Northwestern Mexico Species Assessment Workshop, held in Culiacan, Sinaloa, in 2004. They were also chosen to include entire habitats into single Regions. For example, the majority of the desertic habitats are combined into the Arid Borderlands Region. The following lists the groupings of BCRs into the four Regions:

The Arid Borderlands Region includes: Sonoran and Mojave Deserts (BCR 33), Desierto de Baja California (BCR 40), Islas del Golfo de California (BCR 41), Sierra y Planicies de El Cabo (BCR 42).

The Californian Coasts and Mountains Region includes: Coastal California (BCR 32) and Sierras de Baja California (BCR 39), and Isla Guadalupe (BCR 63).

The Mexican Highlands Region includes: the Sierra Madre Occidental (BCR 34).

The Pacific Lowlands Region includes: Planicie Costera, Lomeríos y Cañones de Occidente (BCR 43) and Marismas Nacionales (BCR 44).

## **FORMAT OF THE CONSERVATION PLAN**

This section discusses the general outline of the Plan and the information the reader can expect to find therein. There are four Regional Chapters—one for each of the Regions listed above. If the reader is interested in only one geographical region, then they can quickly focus on the appropriate chapter. Each Regional Chapter has a list of SJV Technical Committee members who worked on the Chapter, a descriptive introduction, an avifaunal analysis, habitat discussions and recommendations, and a Focus Area list. The analyses have been conducted and the habitats are discussed for the SJV area in its entirety without regard to jurisdictions or national/state borders.

### *Avifaunal Analysis:*

With over 700 bird species occurring in the SJV area, an avifaunal assessment and analysis was performed that presents the species of highest priority for conservation. The assessment process looks at vulnerability and stewardship responsibility. The following factors are measures of different components of vulnerability that were assessed for each species: population trend, breeding and nonbreeding distributions, threats during the breeding and nonbreeding periods, population size, and relative density. Where data were not available, an expert workshop was convened to score each vulnerability factor. Stewardship Responsibility is the concept of taking conservation action for species that have a large percentage of their entire population in the SJV area. The relative density of each species in each Region provides a surrogate for stewardship responsibility (which will be calculated later as percent of a species' population occurring in the SJV area). Conservation actions for Stewardship Responsibility Species can take three forms: planning for the long-term maintenance of the species, monitoring its population trends, and informing land managers about the unique situation of having a stewardship species. The following are two examples of actions for Stewardship Responsibility Species. First, the SJV area supports 100% of the world's population of Gray Thrasher. While this species is not at risk (i.e., vulnerable) at this time, it is the SJV's "responsibility" to ensure that Gray Thrasher does not slip into a concern category, monitor the species, and to make land owners/managers aware of this unique "responsibility". In the situation where the SJV area supports a large percentage of the population of a species that is experiencing many threats, declining trends, etc. (i.e., the species is both a Concern Species and a Responsibility Species), it is the SJV's "responsibility" to respond with appropriate and often urgent conservation actions.

All species were scored for the above factors at both the hemispheric and regional scales, and rule sets were applied to produce Continental and Regional Concern Species lists, respectively, as well as Stewardship Responsibility Species lists. Waterfowl, waterbird, and shorebird priority species from those initiatives' plans were added to the Concern lists if they were not included based on the Species Assessment Process (all priority landbirds and gamebirds are included because the assessment process originated by Partners in Flight). A comparison of the priority designations of the waterfowl, waterbird, and shorebird plans with the SJV priority designations is found in Appendices C, D, and E.

Continental Concern Species are species that score high for many factors in the entirety of their range in the North American hemisphere. They should be considered priorities anywhere they occur unless they have a low percent of their population (<1%) in the area of concern. Regional Concern Species are those that have moderate continental scores but have high threats and declining trends specifically in the SJV area. All of the scores are kept in the SJV Species Assessment Database. The SJV Technical Committee chose to use the rules that were used to determine the PIF Watch List species so that the SJV will be consistent with the North American Landbird Conservation Plan and the emerging Mexican landbird plan.

Continental and Regional scores for landbirds in the U.S. and Canada have recently been reviewed and updated and hemispheric and regional scores for Mexico are currently under review. The SJV Technical Committee and Management Board decided that it was important to proceed with the Plan and thus to use the Mexican draft scores on a provisional basis for this version of the Plan. This will necessitate an update of the SJV's Species Assessment Database when the Mexican scores are finalized and will possibly require some changes in the SJV Continental and Regional Concern Species lists. Also, a new methodology for assessing Stewardship Responsibility is being applied for all species in the U.S., Canada, and Mexico, which might change some of the responsibility species. Any changes in the Concern or Stewardship Responsibility Species will be posted on the SJV website and/or in an addendum to this Plan. All Concern Species and Stewardship Responsibility Species are listed in Appendix A, as well as Arizona Game and Fish Department's Species of Greatest Need and the U.S. Fish and Wildlife Service's Focal Species.

The SJV's goal is to return to population levels of about 30 years ago and the Plan's population objectives reflect this goal. This is also based on the fact that the best data source of population trends, the Breeding Bird Survey (BBS), has just over 30 years of data. In areas where BBS data are lacking, expert opinion was used to estimate the population trend. Population objectives are based on trends and are calculated in the following manner: (1) if a species' population has declined by >50% in the last 30 years, the objective is to increase the population by 100% (Double); (2) if a population has declined by 15-49% in the last 30 years, the objective is to increase the population by 50% (Increase by 50%); (3) if the population trend is highly variable or lacks sufficient data, the objective is to maintain the population while the species' trend is being determined (Maintain/Determine Status); and (4) if the population is stable, the objective is to maintain the population (Maintain). (There are no priority species with increasing population trends.) Because of the large number of species found in the SJV area and in many cases lack of specific information, population objectives for all species are currently determined in the manner described above without taking individual species' life histories or other circumstances into account. These objectives will be refined when additional or new data are found or the proposed SJV monitoring program determines that species specific objectives can be generated.

The 30-year timeframe for achieving these objectives is a long range vision. Incremental interim steps to achieve the stated objectives will be created by the Technical Committee to assist in measuring progress. In all cases with declining species the first priority is to stabilize the decreasing population trend and then work toward achieving the population increases that would meet the objective. The SJV should work on stabilizing species that have a "Double" objective (i.e., have declined by 50% in the last 30 years) as a first priority. Secondly, the SJV should work both on stabilizing species in the "Increase by 50%" category and determining trend for species in the "Maintain/Determine Status" category as some of those species may actually have severely declining trends that have yet to be revealed. The population objectives are meant to be determined purely based on scientifically derived information and should be interpreted as the best case scenario for reestablishing bird populations. However, in some situations it is recognized that some habitats these species rely on may be permanently destroyed and/or are incapable of being restored, as in the case of urban/suburban development and lowering of water tables as a result of the increasing human population in the area.

While the species population objectives are considered to be part of the avifaunal analysis, they are found in the Habitat Discussion sections in each Regional Chapter. The population objectives that are provided apply to the entire species' range in all habitats in which it occurs in that Region. If the species is found in the SJV area only during the nonbreeding season, the population objective is derived from the continental breeding season population trend. The objective should be interpreted as "a winter population that would support a breeding population of "Double, Increase by 50%, Maintain/Determine Status, or Maintain" the current population".

#### *Habitat Discussions and Recommendations:*

Most of the Plan's users are very familiar with the habitat types they manage, whether the user is a natural resource agency, a non-governmental conservation organization, a private landowner, or a local community. The habitat type nomenclature in this Plan is regularly used and easily identifiable by landowners and managers in the SJV area. In addition, information is given to assist Plan users in further identifying habitats of interest, including location, dominant plant species, and physical and biological descriptions of the habitats. Generally, all habitat or community descriptions follow Brown (1994), which covers about 90% of the SJV area.

The priority species list generated by the avifaunal analysis for each Region is given in three tables: Continental Concern Species, Regional Concern Species, and Stewardship Responsibility Species. Those species are then sorted into the habitats that occur in each Region (Table 1). This produces habitat tables that also present the species' Conservation Action category, Habitat Needs, and Population Objective (discussed above). Conservation Action Categories are also used to help identify the highest priorities by Region and habitat type (see discussion in each Regional Chapter). Information in the Habitat Discussions sections also includes threats, opportunities for cooperation, and primary conservation needs or actions. The habitat tables can be used to design projects that benefit the most Concern Species and specifically address their habitat needs.

Table 1. Habitat types found in each Regional Chapter.

<b>Regional Chapter/ Habitat Types</b>	<b>Arid Borderlands Region</b>	<b>Californian Coasts and Mountains Region</b>	<b>Mexican Highlands Region</b>	<b>Pacific Lowlands Region</b>
<b>Forests</b>				
Tropical Deciduous	X		X	X
Pine-Oak	X	X	X	X
Mixed Conifer			X	
<b>Woodlands</b>				
Mesquite Bosque	X		X	
Pinyon-Juniper	X		X	
<b>Shrublands</b>				
Desertscrub	X		X	
Coastal Scrub (Matorral Costero)		X		
Californian Chaparral		X		
Interior Chaparral	X		X	
<b>Grasslands</b>				
Desert Grasslands	X		X	X
<b>Wetlands</b>				
Riparian	X	X	X	X
Freshwater	X	X	X	X
Coastal	X	X		X
Islands	X	X		X
Off-Shore/Pelagic	X	X		X
<b>Other</b>				
Cliff/Rock	X	X	X	X

<b>Regional Chapter/ Habitat Types</b>	<b>Arid Borderlands Region</b>	<b>Californian Coasts and Mountains Region</b>	<b>Mexican Highlands Region</b>	<b>Pacific Lowlands Region</b>
Urban	X	X	X	X
Agriculture	X	X	X	X

In this version of the Plan habitat objectives have not been quantified based on the amount of existing or potential habitat and its condition. However, the Plan describes actions that can be taken to increase the amount and/or improve the condition of habitat to support the levels of birds suggested by the population objectives. In addition, information is provided on potential actions that are not habitat-based, such as preventing human disturbance of breeding colonies and reducing capture for the pet trade. The following is a general description of the actions that could be taken in regard to habitat that will achieve each of the four population objective categories in this Plan:

**Population Objective of Maintain:** protect existing habitat, no net loss of habitat (allowing for natural- and human-caused successional changes). This objective rarely means a “hands off” approach. Existing habitat often must be actively protected and/or managed by one or several means.

**Population Objective of Maintain/Determine Status:** same actions as Maintain while creating and implementing a program to determine the population trend, threat, distribution, and relative density of the species.

**Population Objective of Increase by 50%:** protect existing habitat while increasing the amount of suitable habitat such that the population of the target species increases 50%, and/or increasing the carrying capacity of existing suitable habitat such that the population of the target species increases by 50%. Increasing the carrying capacity of an area usually involves rehabilitating a degraded habitat. Increasing the carrying capacity of potentially suitable habitat may be achieved by addressing the limiting factors for the target species (e.g., increasing snags, creating river flows that germinate undergrowth species, protecting areas from wildfire in certain cases, prescribing fire in others, etc.).

**Population Objective of Double:** protect existing habitat while increasing the amount of suitable habitat such that the population of the target species increases by 100%, and/or increasing the carrying capacity of existing suitable habitat such that the population of the target species increases by 100%. Increasing the amount of suitable habitat can mean recreating a lost natural system or restoring a degraded one. In some situations this is relatively easy if the seed bank has not been destroyed. In other situations it may mean intense recontouring, replanting, and other costly measures.



The goal of increasing the carrying capacity or amount of suitable habitat should always be increasing the populations of the Species of Concern for that Region and habitat. Regardless of the technique used or resulting habitat achieved, the number of birds in the resulting created or enhanced habitat is the goal and should be estimated and compared to the number before the project commenced. In the future, models will be created that will delineate the amount and condition of existing habitat and the densities of birds in those habitats in order to produce population estimates, locate potential restoration areas, measure population increases, etc. Until these models are created, estimates of percent increases in bird numbers will be used to measure SJV successes.

To determine the amount of additional habitat needed for each of the Species of Concern to meet the population objectives, the amount of habitat they currently occupy and the density at which they occupy it needs to be known. With the capacity and funding for an appropriate GIS, the amount of habitat needed for many species can be determined. For some locations in the SJV area, field work may also be needed to determine the densities of the Species of Concern. The amount of habitat restored and enhanced and the densities of birds thus achieved will be tracked by the SJV (activities directly funded or granted to the SJV) and partners so the results of the SJV's successes can be compiled. Estimates of population increases can then be calculated at the locations the SJV has influenced. When the funding and capacity have been secured to determine current population estimates and the increases necessary to meet the population objectives and the habitat acres to do so, the percentage increase of past projects' accomplishments can be determined, as well as what is needed in the future.

Not all population objectives can be reached by protecting, restoring, and/or enhancing habitat. There are cases where threats such as cowbird brood parasitism, pollution, small population dynamics, capture for the pet trade, and disease must be addressed. These factors are identified in the Habitat Discussion section tables for each applicable species. The above discussion on habitat objectives should also be complemented by work on these types of threats.

Restoring or enhancing a habitat can meet the population objectives for multiple species. Providing for overlapping habitat requirements of the Species of Concern is anticipated and will be implemented as often as possible to optimize expenditures. One example of this is in Pine-Oak Forest, where protecting/restoring/enhancing the forest can happen in a way such that the following components are recreated or enhanced: acorn producing trees for Wild Turkeys, grassy understory for Montezuma Quail, and trees old enough to provide large snags for Thick-billed Parrots, and small cavities for Flammulated Owls.

*Focus Area Lists:*

Species and habitat priorities allow the SJV to identify specific locations important for conservation work. To begin the process of identifying these locations, combinations of AICAs and IBAs in Mexico and the U.S. were used. Focus Areas designated by these two programs are areas that are known to have high numbers of priority birds. Areas that may not currently have priority birds but which have high restoration potential will be added at a later time. Additional Focus Areas will undoubtedly be needed because the habitat contained in all the listed Focus Areas is not likely to meet the population objectives of all of the priority species. Lists of the Focus Areas are found in each Regional Chapter by state and BCR. Focus Area summaries will be provided later as an Addendum to this Plan and/or on the SJV website.

## **GENERAL GOALS, OBJECTIVES, AND TASKS**

The following provides an outline for accomplishing the biological objectives and recommendations found in this Plan. The Goals, Objectives, and Tasks will be implemented by a combination of the Management Board, the Technical Committee, and other appropriate partners. Many of the tasks below are partner-oriented and can not be achieved without their participation.

Goal 1: Maintain and enhance coordinated and cooperative working relationships to benefit the scientific basis for conservation of avian resources and their habitats.

Objective: Provide a forum to bring together private and public partners that have an interest or role in avian conservation.

Task: Continue to convene the SJV Technical Committee.

Task: Hold SJV Technical Committee meetings at various locations to reach new partners.

Task: Communicate with the SJV Technical Committee through the SJV website and listserver.

Task: Invite new participants to the SJV Technical Committee.

Objective: Encourage incorporation of the goals, objectives, and recommendations of this Plan and bird conservation in general into existing and developing conservation programs.

Task: Disseminate the Plan to potential partners through staff, Technical Committee, Board, SJV website, and discussions with potential partners about opportunities to incorporate bird conservation into their activities.

Task: Develop Land Managers Guides for certain habitat types.

Objective: Foster cooperation across a larger audience.

Task: Provide other forums for exchange and coordination of conservation efforts such as meetings, conferences, and symposia.

Task: Coordinate with other JVs and efforts adjacent to SJV boundaries.

Objective: Identify, facilitate, and foster partnerships that create opportunities to fund the goals and objectives laid out in the SJV Bird Conservation Plan.

Task: Coordinate with partners regarding funding opportunities.

Task: List funding sources on the SJV website.

Goal 2: Continue to gather species data and establish a coordinated program to survey, inventory, and monitor the status and distribution of bird species in the SJV area.

Objective: Develop and maintain a database of the bird species in the SJV area.

Task: Develop the database using the Partners in Flight databases as the basis.

Task: Update and add to the SJV Bird Conservation Plan as new information becomes available, including monitoring information and expert workshop results.

Task: Incorporate other information such as habitat associations, seasonal occurrence, limiting factors, etc. into the SJV database.

Task: Use updates to the database to modify the priority species.

Objective: Determine the distribution, population trend, and habitat use of priority and stewardship species.

Task: Determine the level of monitoring needed for each priority and stewardship species.

Task: Assess ongoing monitoring efforts.

Task: Coordinate monitoring to fill information gaps.

Task: Create a feedback mechanism that uses information from monitoring to improve the database and Plan and inform habitat management actions.

Task: Create an information feedback mechanism from monitoring data to on-the-ground users and planners.

Task: Use volunteer work force when appropriate.

Task: Train professional and “para” professionals in monitoring.

Task: Use standardized monitoring protocols across regional, national, and international borders to enable compilation.

Task: Coordinate with trinational monitoring programs such as Coordinated Bird Monitoring and Avian Knowledge Network.

Task: Conduct monitoring at selected sites to determine effectiveness of recommendations and actions.

Task: Conduct monitoring at large scales to determine region-wide trends.

Goal 3: Gather and assess habitat data necessary to quantify objectives and provide recommendations.

Objective: Determine the amount and quality of habitat needed for meeting species objectives.

Task: Perform habitat assessments (in priority order).

Task: Acquire spatial habitat data.

Task: Determine the number of acres needed in each of defined habitats.

Task: Calculate population estimates of each species using density and acreage data.

Task: Calculate the amount and condition of habitat needed to meet population objectives.

Objective: Analyze ability to meet habitat objectives in targeted areas.

Task: Map Focus Areas.

Task: Determine if Focus Areas meet habitat objectives established in the Objective above.

Task: Analyze area outside of Focus Areas for meeting objectives.

Task: Identify new Focus Areas based on the analysis.

Task: Prioritize Focus Areas and other areas for meeting objectives.

Goal 4: Encourage applied research to provide guidance in the development of management projects and conservation plans.

Objective: Determine priority research needs.

Task: Identify and prioritize research needs of priority species and habitats.

Task: Encourage partners to investigate SJV research priorities.

Task: Create information feedback mechanism from researchers to land managers.

Objective: Determine effects of land use practices on priority species.

Task: Compile known information by habitat and/or species.

Task: Identify and prioritize investigations of the impact of land use practices on priority species.

Goal 5: Facilitate implementation of priority actions to achieve population and habitat objectives.

Objective: Determine what actions are needed to meet population objectives (and habitat objectives when they are developed).

Task: Identify conservation actions.

Task: Prioritize conservation actions within habitats and/or geographical/political units.

Objective: Implement conservation projects to meet SJV objectives.

Task: Disseminate information about conservation actions recommended for each habitat type to SJV partners.

Task: Work with partners to design and obtain funding for projects.

Objective: Provide data to facilitate work on bird conservation issues.

Task: Use monitoring efforts to inform planning and implementation phases.

Task: Use monitoring efforts to inform land managers in an easily accessed format.

Objective: Develop habitat specific management guidance for priority birds and habitats.

Task: Write Best Management Practices (BMP) for priority habitats.

Task: Put BMPs on SJV website.

Task: Coordinate with land management agencies to consider BMPs.

Task: Use various methods to distribute and discuss BMPs with private land managers.

Goal 6: Gather, develop, and distribute information that promotes conservation of priority birds and habitats. Work with the SJV Education and Outreach Coordinator and Committee to meet objectives. (Details of this goal are addressed in the Outreach and Education Plan.)

Objective: Communicate SJV priorities, information, and expertise to stakeholders.

Objective: Identify local initiatives, projects, and organizations capable of working as partners to meet objectives.

Objective: Increase knowledge, awareness, and technical expertise in monitoring, and habitat management for professionals and “para” professionals.

Objective: Increase the knowledge of youth and educators about avian biology and ecological needs.

Objective: Increase the knowledge of private and public land managers about the ecological needs of birds

Objective: Encourage active public participation in bird conservation.

Objective: Increase policy makers’ knowledge about benefits of conservation and needs of programs to effect conservation.

## **ASSOCIATED PROGRAM NEEDS TO ACCOMPLISH CONSERVATION GOALS**

There are a number of other activities detailed in the SJV Strategic Plan (<http://sonoranjv.org/planning01.html>) that are directly related to the ability and success of meeting the goals, objectives, and recommendations set out in this Plan. All activities, coordination, training (both professional and citizen scientists), outreach, education, landowner/land manager assistance, policy issues, and locating increased funding, are the combined responsibility of the SJV staff, Management Board, and partners.

The Conservation Plan will be amended on a one-year basis if necessary and a detailed review and update will be performed every five years. Additional information of value to SJV partners will continually be developed. This information will be provided via the SJV website and at meetings. Place names, plant names, and habitat descriptions that are given in Spanish in the Plan are places and habitats found only in Mexico or that are commonly accepted Spanish words in English.

## **REGIONAL CHAPTERS**

The following are the four Regional Chapters with their respective avifaunal analyses and habitat discussions.



## **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.

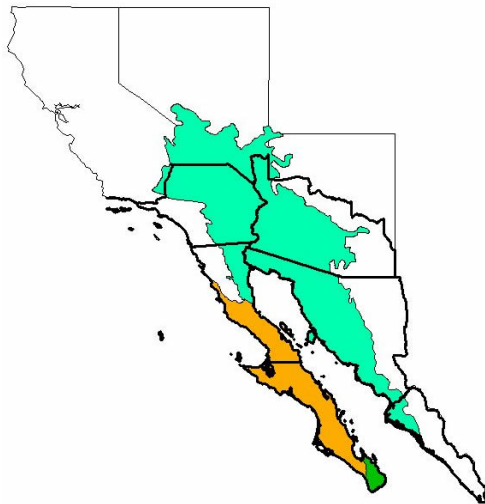


Figure 2. Map of the Arid Borderlands Region.

### **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 plan 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
<i>Aeronautes saxatalis</i>	White-throated Swift	PIF	B/W	4/5	Cliff/Rock
<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>Poliophtila 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	1/4	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>Poliophtila 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 quinquestriata</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

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Glaucidium gnoma hoskinsii</i>	Northern “Cape” Pygmy-Owl	SJV	R	5	Pine-Oak
<i>Athene cunicularia</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
<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



Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<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
<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

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<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, Coastal Wetlands
<i>Aythya valisineria</i>	Canvasback	NAWMP	W	-/2	Freshwater Wetlands, Coastal Wetlands
<i>Callipepla douglasii</i>	Elegant Quail	MX-PIF	R	2	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

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<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
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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>Polioptila 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.

<b>Concern Category</b>	<b>Total Number of Concern Species in the Category</b>	<b>Concern Species as a % of the regularly occurring SJV (667) species</b>	<b>Concern Species as a % of the regularly occurring Arid Borderlands (389) species</b>
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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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%
<b>Rufous-winged Sparrow</b>	<b>CC</b>	<b>MA</b>	<b>Grassy areas</b>	<b>Increase by 50%</b>
Five-striped Sparrow	CC	MA	Brushy scrub, rocky slopes	Increase by 50%
Varied Bunting	CC	MA	Riparian edges	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Northern Pygmy-Owl	RC	MA	Nesting cavities	Increase by 50%
<b>Northern “Cape” Pygmy Owl</b>	<b>RC</b>	<b>MA</b>	<b>Nesting cavities</b>	<b>Increase by 50%</b>
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
<b>American “San Lucas” Robin</b>	<b>RC</b>	<b>MA</b>	<b>Requires flowing streams</b>	<b>Maintain/Determine Status</b>
<b>Yellow-eyed “Baird’s” Junco</b>	<b>RC</b>	<b>MA</b>	<b>Generalist</b>	<b>Maintain/Determine Status</b>

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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
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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Gray Hawk	RC	MA	Large mesquites, lizards	Increase by 50%
Black-capped Gnatcatcher	CC	MA	Dense midstory	Increase by 50%
<b>Lucy's Warbler</b>	<b>CC</b>	<b>MA</b>	<b>Cavity trees or trees with exfoliating bark</b>	<b>Increase by 50%</b>
<b>Gilded Flicker</b>	<b>RC</b>	<b>MA</b>	<b>Cavity nester</b>	<b>Maintain/Determine Status</b>
<b>Crissal Thrasher</b>	<b>RC</b>	<b>MA</b>	<b>Dense vegetation</b>	<b>Maintain/Determine Status</b>
<b>Abert's Towhee</b>	<b>CC</b>	<b>MA</b>	<b>Dense understory</b>	<b>Maintain</b>
<b>White-winged Dove</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
Buff-collared Nightjar	RC	PR	Areas bordered by open pastures or thornscrub	Increase by 50%
<b>Verdin</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
<b>Cactus Wren</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
<b>Phainopepla</b>	<b>RC</b>	<b>PR</b>	<b>Mistletoe</b>	<b>Increase by 50%</b>
<b>Ladder-backed Woodpecker</b>	<b>RC</b>	<b>PR</b>	<b>Cavity trees</b>	<b>Maintain/Determine Status</b>
<b>Ash-throated Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Cavity trees</b>	<b>Maintain</b>

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

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## **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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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

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## **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 arguta*), 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

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Gila Woodpecker</b>	<b>RC</b>	<b>MA</b>	<b>Woody vegetation or succulents for cavities</b>	<b>Double</b>
<b>Bendire's Thrasher</b>	<b>CC</b>	<b>MA</b>	<b>Scattered low bushes and low trees, some grass; in some places associated with Joshua Tree</b>	<b>Double</b>
Scaled Quail	CC	MA	Open semi-desert grasslands	Increase by 50%
<b>Harris's Hawk</b>	<b>RC</b>	<b>MA</b>	<b>Perching sites</b>	<b>Increase by 50%</b>
<b>Elf Owl</b>	<b>CC</b>	<b>MA</b>	<b>Columnar cacti with cavities</b>	<b>Increase by 50%</b>
<b>Purple "Arizona" Martin</b>	<b>RC</b>	<b>MA</b>	<b>Columnar cacti with cavities</b>	<b>Increase by 50%</b>
Five-striped Sparrow	CC	MA	Rocky well-vegetated hillsides	Increase by 50%
<b>Gilded Flicker</b>	<b>RC</b>	<b>MA</b>	<b>Trees or columnar cacti for cavities</b>	<b>Maintain/Determine Status</b>
<b>Le Conte's Thrasher</b>	<b>CC</b>	<b>MA</b>	<b>Very sparse, open desert with few shrubs, sensitive to disturbance</b>	<b>Maintain/Determine Status</b>
Varied Bunting	CC	MA	Thorn shrub adjacent to riparian areas	Maintain/Determine Status
<b>Burrowing Owl</b>	<b>RC</b>	<b>MA</b>	<b>Open, semi-open desert, with burrows</b>	<b>Maintain</b>
California Gnatcatcher	CC	MA	Dense midstory	Maintain
Brewer's Sparrow	CC	PR	Brush adjacent to grass (nonbreeding)	Double
<b>Gray Vireo</b>	<b>CC</b>	<b>PR</b>	<b>Elephant tree fruit (nonbreeding)</b>	<b>Increase by 50%/Determine Status</b>
Zone-tailed Hawk	RC	PR	Generalist within mountain canyons and hills	Increase by 50%
<b>Western Screech-Owl</b>	<b>RC</b>	<b>PR</b>	<b>Cavities, saguaros and mesquite</b>	<b>Increase by 50%</b>
Buff-collared Nightjar	RC	PR	Areas bordered by open pastures or thornscrub	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Loggerhead Shrike</b>	<b>RC</b>	<b>PR</b>	<b>Dense shrubs for nests; open areas with woody substrate, woodland edges</b>	<b>Increase by 50%</b>
<b>Verdin</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
<b>Cactus Wren</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
Rock Wren	RC	PR	Sparse rocky desert areas	Increase by 50%
Black-capped Gnatcatcher	CC	PR	Dense thornscrub	Increase by 50%
<b>Phainopepla</b>	<b>RC</b>	<b>PR</b>	<b>Mistletoe</b>	<b>Increase by 50%</b>
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
<b>Lawrence's Goldfinch</b>	<b>CC</b>	<b>PR</b>	<b>Near weedy fields, where water is available; substantial shrub understory (winter)</b>	<b>Maintain/Determine Status</b>
<b>Costa's Hummingbird</b>	<b>CC</b>	<b>PR</b>	<b>Nectar producing flowers (nonbreeding), insects (breeding season)</b>	<b>Maintain</b>
<b>Ash-throated Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Woody vegetation or columnar cacti for nesting cavities</b>	<b>Maintain</b>

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

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

## **Habitat: Interior Chaparral Shrubland**

**Location:** Isla Cedros, Sierra de la Laguna and areas at the ecotone between desert scrub 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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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

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

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

## **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%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Elegant Quail	RC	MA	Mesquite-oak grassland	Increase by 50%
Montezuma's Quail	CC	MA	Oak grassland savannahs	Increase by 50%
<b>Harris's Hawk</b>	<b>RC</b>	<b>MA</b>	<b>Large trees (cacti), perching structures</b>	<b>Increase by 50%</b>
Mountain Plover	CC	MA	Open, short grass (nonbreeding)	Maintain/Determine Status
<b>Burrowing Owl</b>	<b>RC</b>	<b>MA</b>	<b>Open, semi-open grassland, with burrows</b>	<b>Maintain</b>
<b>Loggerhead Shrike</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
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

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

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

## **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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Willow “Southwestern” Flycatcher	RC	IM	Continuous riparian vegetation, presence of flowing water, dense understory	Double
<b>California “Inyo” Towhee</b>	<b>RC</b>	<b>IM</b>	<b>Dense willow thickets around springs</b>	<b>Double</b>
Bald Eagle - resident Southwestern popn.	RC	IM	Large roost and nesting trees, free of human disturbance, near permanent water	Increase by 50%
Ferruginous “Cactus” Pygmy Owl	RC	IM	Large trees or columnar cacti with cavities for nesting	Increase by 50%
<b>Elf Owl</b>	<b>CC</b>	<b>IM</b>	<b>Large trees, or columnar cacti with cavities for nesting</b>	<b>Increase by 50%</b>
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%
<b>Lucy’s Warbler</b>	<b>CC</b>	<b>MA</b>	<b>Trees with cavities or exfoliating bark essential for nesting</b>	<b>Increase by 50%</b>
<b>Yellow “Sonoran” Warbler</b>	<b>RC</b>	<b>MA</b>	<b>Dense understory</b>	<b>Increase by 50%</b>
<b>Gilded Flicker</b>	<b>RC</b>	<b>MA</b>	<b>Large trees for cavities</b>	<b>Maintain/Determine Status</b>
Thick-billed Kingbird	CC	MA	Large deciduous trees in open areas	Maintain/Determine Status



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Bell's "Least" Vireo</b>	<b>RC</b>	<b>MA</b>	<b>Closed canopy, large diameter trees, dense midstory (nonbreeding in Cape region)</b>	<b>Maintain/Determine Status</b>
<b>Crissal Thrasher</b>	<b>RC</b>	<b>MA</b>	<b>Dense vegetation</b>	<b>Maintain/Determine Status</b>
<b>Lawrence's Goldfinch</b>	<b>CC</b>	<b>MA</b>	<b>Near weedy fields, where water is available; substantial shrub understory (winter)</b>	<b>Maintain/Determine Status</b>
Bald Eagle (winter population)	RC	MA	Large trees and snags for roosting, fish and other food sources free of contaminants	Maintain
<b>Abert's Towhee</b>	<b>CC</b>	<b>MA</b>	<b>Dense understory</b>	<b>Maintain</b>
<b>Gila Woodpecker</b>	<b>RC</b>	<b>PR</b>	<b>Trees or columnar cactus that can be excavated for cavities</b>	<b>Double</b>
<b>White-winged Dove</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
Buff-collared Nightjar	RC	PR	Adjacent to thorn forest and desertscrub (H&W)	Increase by 50%
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%
<b>Verdin</b>	<b>RC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
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
<b>Ladder-backed Woodpecker</b>	<b>RC</b>	<b>PR</b>	<b>Trees or columnar cactus that can be excavated for cavities</b>	<b>Maintain/Determine Status</b>

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Bridled Titmouse	RC	PR	Sycamore, cottonwoods, willows often within oak zones (ABBA)	Maintain/Determine Status
<b>Costa's Hummingbird</b>	<b>CC</b>	<b>PR</b>	<b>Nectar producing-flowers (nonbreeding), abundant insects (breeding) (E. Palacios pers. comm.)</b>	<b>Maintain</b>
<b>Ash-throated Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Trees with cavities</b>	<b>Maintain</b>
Lesser Goldfinch	RC	PR	Riparian vegetation and composite flowers	Maintain

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

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

## **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 ciénegas (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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Least "California" Tern</b>	RC	IM	<b>Open water for fishing and open beach for nesting (small islets)</b>	<b>Double</b>
Black Rail	CC	IM	Shallow water, bulrush, near upland	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Black “California” Rail</b>	RC	IM	Shallow water, bulrush, near upland	Increase by 50%
<b>Clapper “Yuma” Rail</b>	RC	IM	Mixed age cattail stands, near open water	Double
<b>Gull-billed “Western” Tern</b>	RC	IM	Open water for fish and open beach to nest (small islets)	Increase by 50%
<b>Belding’s Yellowthroat</b>	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

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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%
<b>Marbled Godwit</b>	<b>CC</b>	<b>PR</b>	<b>Mudflats, shallow pools</b>	<b>Increase by 50%</b>
Gull-billed Tern (all subspecies)	CC	PR	Open water for fish and open beach to nest (small islets)	Increase by 50%
<b>Marsh Wren</b>	<b>RC</b>	<b>PR</b>	<b>Cattail marsh</b>	<b>Increase by 50%</b>
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
<b>Clark’s Grebe</b>	<b>CC</b>	<b>PR</b>	<b>Open water</b>	<b>Maintain/Determine Status</b>
Northern Harrier	RC	PR	Marsh (nonbreeding)	Maintain/Determine Status
Tricolored Heron	RC	PR	Small dense trees and shrubs near water	Maintain /Determine Status
<b>American Avocet</b>	<b>CC</b>	<b>PR</b>	<b>Mudflats, shallow pools</b>	<b>Maintain/Determine Status</b>
<b>Western Sandpiper</b>	<b>CC</b>	<b>PR</b>	<b>Mudflats, shallow pools</b>	<b>Maintain/Determine Status</b>
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
<b>Savannah “Large-billed” Sparrow</b>	<b>RC</b>	<b>PR</b>	<b>Saltgrasses; low marsh areas</b>	<b>Maintain/Determine Status</b>
Gadwall	RC	PR	Marshes and lakes	Maintain
Blue-winged Teal	RC	PR	Marshes and lakes	Maintain
Cinnamon Teal	RC	PR	Marshes and lakes	Maintain

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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

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

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

## **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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Least “California” Tern</b>	RC	IM	<b>Salt marsh, coastal lagoons, estuaries Sandy beaches and barrier strands</b>	<b>Double</b>
Bald Eagle - resident Southwestern popn.	RC	IM	Protection for nesting and foraging (Bahia Magdalena)	Increase by 50%
Snowy Plover	CC	IM	Undisturbed barrier beaches; sand flats, sandy dune-backed beaches, sand spits, salt flats	Increase by 50%
<b>Gull-billed “Western” Tern</b>	RC	IM	<b>Salt marsh, coastal lagoons Bare soil, upper intertidal, zone, free of disturbance</b>	<b>Increase by 50%</b>
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%
<b>Marbled Godwit</b>	CC	MA	<b>Large expanses of exposed mudflats, low disturbance, isolated roosting sites, tidal mudflats (nonbreeding)</b>	<b>Increase by 50%</b>
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



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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
<b>Brant</b>	<b>CC</b>	<b>PR</b>	<b>Sea grasses (eelgrass) (nonbreeding)</b>	<b>Double</b>
Lesser Scaup	CC	PR	Coastal lagoons, estuaries (nonbreeding)	Double
Surf Scoter	CC	PR	Estuaries (nonbreeding)	Double
Horned Grebe	CC	PR	Bays and estuaries (nonbreeding)	Double
Clapper Rail (all subspecies)	RC	PR	Mangroves	Double
Dunlin	CC	PR	Coastal lagoons, estuaries, tidal mudflats (nonbreeding)	Double
Short-billed Dowitcher	CC	PR	Shallow water, tidal mudflats (nonbreeding)	Double
Pelagic Cormorant	CC	PR	Sea cliffs, rocky break waters (nonbreeding)	Increase by 50%
<b>Magnificent Frigatebird</b>	<b>CC</b>	<b>PR</b>	<b>Near-shore waters, mangroves, and islands</b>	<b>Increase by 50%</b>
Roseate Spoonbill	RC	PR	Dense trees and shrubs near water, mangroves	Increase by 50%
Ruddy Turnstone	RC	PR	Tidal mudflats, beaches, rocky shores, reefs, and breakwaters (nonbreeding)	Increase by 50%
Surfbird	CC	PR	Rocky shores and breakwaters (nonbreeding)	Increase by 50%
<b>Yellow-footed Gull</b>	<b>CC</b>	<b>PR</b>	<b>Generalist</b>	<b>Increase by 50%</b>
<b>Gull-billed Tern</b>	<b>CC</b>	<b>PR</b>	<b>Salt marsh, coastal lagoons Bare soil, upper intertidal, zone, free of disturbance</b>	<b>Increase by 50%</b>
Mangrove Vireo	RC	PR	Mangrove	Increase by 50%
Yellow "Mangrove" Warbler	RC	PR	Mangrove	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Clark's Grebe</b>	CC	PR	<b>Generalist</b>	<b>Maintain/Determine Status</b>
Wilson's Plover	CC	PR	Coastal lagoons, mudflats, upper salt marsh	Maintain/Determine Status
<b>American Avocet</b>	CC	PR	<b>Coastal lagoons</b>	<b>Maintain/Determine Status</b>
<b>Western Sandpiper</b>	CC	PR	<b>Exposed mudflats, remote undisturbed roosting sites; coastal lagoons (nonbreeding)</b>	<b>Maintain/Determine Status</b>
Tricolored Heron	RC	PR	Dense clumps of small trees/shrubs	Maintain /Determine Status
American Oystercatcher	CC	PR	Sandy or rocky beaches	Maintain/Determine Status
Black Turnstone	CC	PR	Rocky beaches (nonbreeding)	Maintain/Determine Status
<b>Heermann's Gull</b>	CC	PR	<b>Beaches (nonbreeding)</b>	<b>Maintain/Determine Status</b>
Caspian Tern	RC	PR	Coastal lagoons, estuaries, shell, sand, or rocky beaches	Maintain/Determine Status
Snow "Lesser" Goose (western Central Flyway)	RC	PR	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
<b>Elegant Tern</b>	CC	PR	<b>Bays and estuaries (foraging), sandy barrier beaches, dry salt flats, scattered vegetation</b>	<b>Maintain</b>

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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](http://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**

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

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Least Storm-Petrel</b>	CC	IM	<b>Rock crevices, free of introduced mammals (endemic)</b>	<b>Maintain/Determine Status</b>
<b>Yellow-footed Gull</b>	CC	MA	<b>Rocky substrate (endemic)</b>	<b>Increase by 50%</b>
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
<b>Heermann's Gull</b>	CC	MA	<b>Bare soil, free of disturbance (near endemic)</b>	<b>Maintain</b>
<b>Elegant Tern</b>	CC	MA	<b>Bare soil, free of disturbance (endemic)</b>	<b>Maintain</b>
Pelagic Cormorant	CC	PR	Near-shore islands (winter)	Increase by 50%
<b>Magnificent Frigatebird</b>	CC	PR	<b>Mangroves for nesting</b>	<b>Increase by 50%</b>
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
<b>Blue-footed Booby</b>	CC	PR	<b>Bare soil, free of disturbance</b>	<b>Maintain/Determine Status</b>
<b>Brown Booby</b>	CC	PR	<b>Bare soil, free of disturbance</b>	<b>Maintain/Determine Status</b>
American Oystercatcher	CC	PR	Sandy, rocky coast	Maintain/Determine Status
Brandt's Cormorant	CC	PR	Near-shore islands	Maintain

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Double-crested Cormorant	RC	PR	Free of human disturbance	Maintain

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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)**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Black-vented Shearwater</b>	CC	IM	Open sea, free from entanglement in fishing lines and nets, and with adequate fish stocks	Double
<b>Xantus’s Murrelet</b>	CC	IM	“	Double
<b>Craveri’s Murrelet</b>	CC	IM	“	Increase by 50%
<b>Black Storm-Petrel</b>	CC	IM	“	Maintain/Determine Status

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
<b>Least Storm-Petrel</b>	CC	IM	“	<b>Maintain/Determine Status</b>
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 Shearwater	CC	PR	“	Increase by 50%
Sooty Shearwater	CC	PR	“	Increase by 50%
Pelagic Cormorant	CC	PR	“	Increase by 50%
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
Wedge-rumped Storm-Petrel	CC	PR	“	Maintain /Determine Status
Red-billed Tropicbird	CC	PR	“	Maintain/Determine Status
Masked Booby	CC	PR	“	Maintain/Determine Status
<b>Brown Booby</b>	CC	PR	“	<b>Maintain/Determine Status</b>
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**

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

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

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

## **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**

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

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

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

## **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**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action **</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
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

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action **</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Swainson's Hawk	CC	PR	Open fields	Maintain/Determine Status
<b>American Avocet</b>	<b>CC</b>	<b>PR</b>	<b>Fields, sod farms (winter)</b>	<b>Maintain/Determine Status</b>
Barn Owl	RC	PR	Fields near cavities, structures for nesting	Maintain/Determine Status
<b>Lawrence's Goldfinch</b>	<b>CC</b>	<b>PR</b>	<b>Near weedy fields, where water is available; substantial shrub understory (winter)</b>	<b>Maintain/Determine Status</b>
Snow "Lesser" Goose	RC	PR	Available waste grain (winter)	Maintain
<b>Burrowing Owl</b>	<b>RC</b>	<b>PR</b>	<b>Open, semi-open desert, with burrows</b>	<b>Maintain</b>
Western Meadowlark	RC	PR	Generalist	Maintain

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

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

## **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 Purísima 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*.

## **Californian Coasts and Mountains Region Chapter BCRs 32, 39, and 63**

David Krueper, Eduardo Palacios-Castro, and Horacio de la Cueva

### **Location:**

For purposes of this Plan, the Californian Coasts and Mountains Region includes the following Bird Conservation Regions: California Coasts (BCR 32), Sierras de Baja California (BCR 39), and Isla Guadalupe (BCR 63). This Plan will address only the southern portion of BCR 32 from Point Conception in California to near Puerto San Isidro, Baja California. The northern portion of BCR 32, north of Point Conception, the Central Valley, and the Sierra Nevada mountains, is not included. In southern California, the coastal mountain ranges, the off-shore islands, and inland areas east to the Sonoran-Mojave Desert (BCR 33) are included for the U.S. In Mexico, all of BCRs 32 and 39 are included (Figure 3). Isla Guadalupe (BCR 63) is included because its characteristics and plant communities closely resemble those of the Pacific islands to the north (i.e., BCR 32). This combination of BCR 32, 39, and 63 was used in the regional Species Assessment for Northwest Mexico.

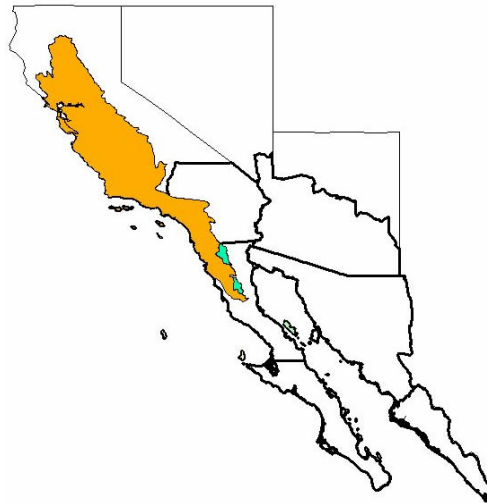


Figure 3. Map of the Californian Coast and Mountains Region.

### **Description:**

The Californian Coasts and Mountains Region on both sides of the international border consists of low mountains, intervening valleys, lower slopes descending to the Pacific Ocean, and several island groups. A Mediterranean climate of hot, dry summers and cool, moist winter creates conditions for vegetation that includes coastal sage scrub, chaparral, pinyon-juniper, live oak woodlands, and pine as elevation increases. These habitats support such birds as California Gnatcatcher, California Quail, Mountain Quail, Wrentit, California Thrasher, Nuttall's



Woodpecker, Oak Titmouse, Bell's "Least" Vireo, and California Condor. The coastal areas provide habitat for several waterfowl and shorebird species and is an important wintering area for Brant, Marbled Godwit, American Avocet, and Surfbird. The Channel Islands offer breeding sites for 14 species of seabirds such as Ashy, Leach's, and Black storm-petrels, Black Oystercatcher, Cassin's Auklet, and formerly Tufted Puffin and Common Murre. Most of the world's populations of Ashy Storm-Petrel and Xantus's Murrelet nest on a small number of offshore islands within this Region. A sizable proportion of the Elegant Tern and Heermann's Gull populations spend the non-breeding season here. Millions of Sooty Shearwaters gather in pelagic waters each fall, joined by large numbers of other shearwaters, storm-petrels, and alcids.

The Sierras de Baja California (BCR 39) comprises the Sierra de Juárez and the Sierra de San Pedro Mártir, two similar mountain ranges located in northern Baja California. The mountains range up to 3,200 m in elevation. Vegetation types change with elevation from Mediterranean chaparral to pine-oak and pine forests. The dominant tree species are pine, white fir, juniper, and oak in addition to cypress. High priority birds include California Condor (re-established), Oak Titmouse, California Thrasher, Gray Vireo, Pinyon Jay, California Quail, and Mountain Quail. These mountains represent the southernmost extension of the ranges of several western bird species.

Isla Guadalupe (BCR 63) is part of a volcanic archipelago located off the western coast of Baja California. It is marked by steep slopes and mountainous topography, with elevations up to 1,400 m. Vegetation is xerophytic scrubland (matorral) and forests of an endemic cypress associated with pine-oak. This island is noted as an important breeding ground for pelagic species and also harbors several endemic species and subspecies. Isla Guadalupe once had nine strongly differentiated endemic taxa of birds, six of which are now thought to be extinct (Barton et al. 2004) including the Guadalupe Storm-Petrel and Guadalupe Caracara. Laysan Albatrosses have recently (1980s) begun breeding on the island.

#### **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 Californian Coasts and Mountains 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 Californian Coasts and Mountains 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 the entire BCR 32 within the Californian Coasts and Mountains Region of California, 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.

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: Chaparral=California 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 6. Continental Concern Species in the Californian Coasts and Mountains.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Branta bernicla</i>	Brant - Pacific	NAWMP	W	<b>5</b>	Coastal Wetlands
<i>Oreortyx pictus</i>	Mountain Quail	PIF	R	<b>5</b>	Pine-Oak, Chaparral
<i>Oceanodroma macrodactyla</i>	Guadalupe Storm-Petrel	SJV	R	<b>5</b>	Islands
<i>Caracara lutosa</i>	Guadalupe Caracara	SJV	R	<b>5</b>	Islands

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Synthliboramphus hypoleucus</i>	Xantus's Murrelet	MX-PIF, PIF NAWCP	B/W	5/5	Islands
<i>Aphelocoma insularis</i>	Island Scrub-Jay	PIF	R	5	Islands*
<i>Poliopitila californica</i>	California Gnatcatcher	MX-PIF, PIF	R	5	Chaparral, Coastal Scrub
<i>Chamaea fasciata</i>	Wrentit	PIF, MX-PIF	R	5	Chaparral, Coastal Scrub, Riparian
<i>Toxostoma redivivum</i>	California Thrasher	PIF	R	5	Chaparral, Coastal Scrub, Riparian, Urban
<i>Melanitta perspicillata</i>	Surf Scoter	NAWMP, PIF	W	4	Off-Shore
<i>Puffinus griseus</i>	Sooty Shearwater	PIF	W	4	Off-Shore
<i>Puffinus opisthomelas</i>	Black-vented Shearwater	MX-PIF	B/W	¾	Off-Shore
<i>Oceanodroma homochroa</i>	Ashy Storm-Petrel	NAWCP, PIF, MX-PIF	B/W	4/2	Islands
<i>Charadrius alexandrinus</i>	Snowy Plover	USSCP, PIF	B/W	4/4	Coastal Wetlands
<i>Recurvirostra americana</i>	American Avocet	PIF	B/W	2/4	Coastal Wetlands, Freshwater Wetlands
<i>Limosa fedoa</i>	Marbled Godwit	USSCP, PIF	W	4	Coastal Wetlands
<i>Calidris alba</i>	Sanderling	USSCP, PIF	W	4	Coastal Wetlands
<i>Calidris mauri</i>	Western Sandpiper	USSCP, PIF	W	4	Coastal Wetlands
<i>Larus heermanni</i>	Heermann's Gull	MX-PIF, PIF	W	4	Coastal Wetlands, Islands
<i>Aeronautes saxatalis</i>	White-throated Swift	PIF	B/W	¾	Pine-Oak, Cliff/Rock
<i>Calypte costae</i>	Costa's Hummingbird	PIF	B/W	4/2	Chaparral, Urban, Coastal Scrub
<i>Picoides nuttallii</i>	Nuttall's Woodpecker	PIF	R	4	Pine-Oak, Riparian
<i>Baeolophus inornatus</i>	Oak Titmouse	MX-PIF, PIF	R	4	Pine-Oak
<i>Spizella atrogularis</i>	Black-chinned Sparrow	PIF	B	4	Chaparral, Coastal Scrub

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Agelaius tricolor</i>	Tricolored Blackbird	PIF	R	4	Freshwater Wetlands, Agriculture
<i>Aythya affinis</i>	Lesser Scaup	NAWMP, PIF	W	3	Coastal Wetlands
<i>Podiceps auritus</i>	Horned Grebe	PIF	W	3	Coastal Wetlands
<i>Phoebastria nigripes</i>	Black-footed Albatross	PIF	W	3	Off-Shore
<i>Oceanodroma melania</i>	Black Storm-Petrel	MX-PIF, PIF, NAWCP	B/W	2/3	Islands, Off-Shore
<i>Phalacrocorax penicillatus</i>	Brandt's Cormorant	NAWCP, PIF	B/W	3/3	Islands, Off-Shore
<i>Gymnogyps californianus</i>	California Condor	PIF, MX-PIF	R	3	Pine-Oak, Chaparral, Coastal Scrub, Cliff/Rock
<i>Numenius americanus</i>	Long-billed Curlew	USSCP, PIF	W	3	Freshwater Wetlands, Agriculture, Coastal Wetlands
<i>Arenaria melanocephala</i>	Black Turnstone	USSCP, PIF	W	3	Islands, Coastal Wetlands
<i>Calidris alpina</i>	Dunlin	USSCP, PIF	W	3	Coastal Wetlands
<i>Sterna elegans</i>	Elegant Tern	MX-PIF, PIF	B/W	3/2	Coastal Wetlands
<i>Cephus columba</i>	Pigeon Guillemot	PIF	B/W	3/2	Coastal Wetlands, Islands, Coastal Scrub
<i>Limnodromus griseus</i>	Short-billed Dowitcher	USSCP-HC, PIF	W	3	Freshwater Wetlands, Coastal Wetlands
<i>Patagioenas fasciata</i>	Band-tailed Pigeon	PIF	B/W	3/3	Pine-Oak
<i>Otus flammeolus</i>	Flammulated Owl	PIF	B	3	Pine-Oak
<i>Asio flammeus</i>	Short-eared Owl	PIF	B/W	2/3	Coastal Wetlands, Agriculture
<i>Picoides albolarvatus</i>	White-headed Woodpecker	PIF	R	3	Pine-Oak
<i>Vireo bellii</i>	Bell's Vireo	PIF	B	3	Riparian
<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	PIF	R	3	Pine-Oak
<i>Carduelis lawrencei</i>	Lawrence's Goldfinch	PIF	R	3	Chaparral, Riparian, Pine-Oak

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Anas platyrhynchos</i>	Mallard	NAWMP	R	2	Freshwater Wetlands
<i>Anas acuta</i>	Northern Pintail	NAWMP	B/W	2/2	Coastal Wetlands
<i>Melanitta fusca</i>	White-winged Scoter	NAWMP, PIF	W	2	Off-Shore
<i>Melanitta nigra</i>	Black Scoter	NAWMP, PIF	W	2	Off-Shore
<i>Aechmophorus clarkia</i>	Clark's Grebe	PIF	B/W	2/2	Freshwater Wetlands
<i>Phoebastria immutabilis</i>	Laysan Albatross	PIF	B/W	2/2	Islands, 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 microsoma</i>	Least Storm-Petrel	MX-PIF	W	2	Off-Shore, Islands
<i>Sula dactylatra</i>	Masked Booby	MX-PIF	W	2	Off-Shore, Islands
<i>Sula nebouxii</i>	Blue-footed Booby	PIF	W	2	Off-Shore, Islands
<i>Sula leucogaster</i>	Brown Booby	PIF	W	2	Off-Shore, Islands
<i>Sula sula</i>	Red-footed Booby	PIF	W	2	Off-Shore, Islands
<i>Phalacrocorax pelagicus</i>	Pelagic Cormorant	PIF	B/W	½	Off-Shore, Islands
<i>Egretta caerulea</i>	Little Blue Heron	NAWCP, PIF	W	2	Freshwater Wetlands
<i>Egretta rufescens</i>	Reddish Egret	MX-PIF, PIF	B/W	2/2	Coastal Wetlands
<i>Laterallus jamaicensis</i>	Black Rail	PIF	B/W	2/2	Coastal Wetlands
<i>Charadrius montanus</i>	Mountain Plover	USSCP, PIF	W	2	Agriculture
<i>Haematopus bachmani</i>	Black Oystercatcher	USSCP, PIF	R	2	Islands, Coastal Wetlands
<i>Numenius phaeopus</i>	Whimbrel	USSCP, PIF	W	2	Coastal Wetlands
<i>Aphriza virgata</i>	Surfbird	USSCP, PIF	W	2	Islands, Coastal Wetlands
<i>Calidris canutus</i>	Red Knot	USSCP	W	2	Coastal Wetlands
<i>Limnodromus griseus</i>	Short-billed Dowitcher	USSCP	W	3	Coastal Wetlands, Freshwater Wetlands
<i>Phalaropus tricolor</i>	Wilson's Phalarope	USSCP, PIF	W	2	Coastal Wetlands

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Sterna nilotica</i>	Gull-billed Tern	PIF	B/W	2/2	Coastal Wetlands
<i>Rynchops niger</i>	Black Skimmer	NAWCP, PIF	R	2	Coastal Wetlands
<i>Synthliboramphus craveri</i>	Craveri's Murrelet	MX-PIF, PIF	W	2	Off-Shore
<i>Strix occidentalis</i>	Spotted Owl	PIF, MX-PIF	R	2	Pine-Oak
<i>Cypseloides niger</i>	Black Swift	PIF	B	2	Pine-Oak, Cliff/Rock
<i>Selasphorus rufus</i>	Rufous Hummingbird	PIF	W	2	Pine-Oak, Urban, Riparian
<i>Selasphorus sasin</i>	Allen's Hummingbird	PIF	B/W	2/2	Coastal Scrub, Riparian
<i>Melanerpes lewis</i>	Lewis's Woodpecker	PIF	W	2	Pine-Oak
<i>Contopus cooperi</i>	Olive-sided Flycatcher	PIF	B	2	Pine-Oak, Riparian
<i>Empidonax traillii</i>	Willow Flycatcher	PIF	B	2	Riparian
<i>Vireo vicinior</i>	Gray Vireo	PIF	B/W	2	Chaparral, Coastal Scrub, Pine-Oak
<i>Pica nuttalli</i>	Yellow-billed Magpie	PIF	R	2	Pine-Oak

\* this species occurs in chaparral and oak habitats but only on Santa Cruz Island; it is placed in the Island habitat only.

Species of Regional Concern (Table 7) 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 species 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 7. Regional Concern Species in the Californian Coasts and Mountains.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD B/W	Habitat
<i>Rallus longirostris levipes</i>	Clapper "Light-footed" Rail	MX-PIF, SJV	R	5	Coastal Wetlands
<i>Sterna antillarum browni</i>	Least "California" Tern	SJV	B	5	Coastal Wetlands
<i>Lanius ludovicianus mearnsi</i>	Loggerhead "San Clemente" Shrike	SJV	R	5	Islands*
<i>Vireo bellii pusillus</i>	Bell's "Least" Vireo	SJV	B	5	Riparian

Scientific Name	Common English Name	Plan	Season of Occurrence	RD B/W	Habitat
<i>Campylorhynchus brunneicapillus sandiegensis</i>	Cactus “San Diego” Wren	SJV	R	5	Chaparral
<i>Aimophila ruficeps sanctorum</i>	Rufous-crowned “Todos Santos” Sparrow	SJV	R	5	Islands
<i>Passerculus sandwichensis beldingi</i>	Savannah “Belding’s” Sparrow	SJV	R	5	Coastal Wetlands
<i>Junco hyemalis insularis</i>	Dark-eyed “Guadalupe” Junco	SJV	R	5	Islands
<i>Oceanodroma leucorhoa</i>	Leach’s Storm-Petrel (Islas Los Coronados)	PIF, MX-PIF	B/W	¾	Islands
<i>Pelecanus occidentalis</i>	Brown “California” Pelican	MX-PIF, SJV	B/W	4/4	Islands
<i>Laterallus jamaicensis coturniculus</i>	Black “California” Rail	PIF, SJV	B/W	4/4	Coastal Wetlands
<i>Empidonax traillii extimus</i>	Willow “Southwestern” Flycatcher	SJV	B	4	Riparian
<i>Lanius ludovicianus</i>	Loggerhead Shrike	MX-PIF, PIF	B/W	¾	Chaparral, Riparian, Agriculture, Coastal Scrub
<i>Amphispiza belli</i>	Sage Sparrow	MX-PIF	R	4	Chaparral, Coastal Scrub
<i>Amphispiza belli belli</i>	Sage “Bell’s” Sparrow	SJV	R	4	Chaparral, Coastal Scrub
<i>Passerculus sandwichensis</i>	Savannah Sparrow	MX-PIF	B/W	4/4	Agriculture
<i>Sturnella neglecta</i>	Western Meadowlark	PIF	B/W	¾	Agriculture
<i>Anas cyanoptera</i>	Cinnamon Teal	PIF	B/W	2/3	Freshwater Wetlands
<i>Anas clypeata</i>	Northern Shoveler	NAWMP	B/W	1/3	Freshwater Wetlands, Coastal Wetlands
<i>Bucephala albeola</i>	Bufflehead	NAWMP	W	3	Freshwater Wetlands, Coastal Wetlands
<i>Ixobrychus exilis</i>	Least Bittern	MX-PIF	B/W	2/3	Coastal Wetlands, Freshwater Wetlands



Scientific Name	Common English Name	Plan	Season of Occurrence	RD B/W	Habitat
<i>Egretta thula</i>	Snowy Egret	NAWCP	B/W	3/2	Coastal Wetlands, Freshwater Wetlands
<i>Circus cyaneus</i>	Northern Harrier	PIF	B/W	2/3	Chaparral, Coastal Wetlands, Coastal Scrub
<i>Rallus longirostris</i>	Clapper Rail	MX-PIF	B/W	3/3	Coastal Wetlands
<i>Rallus limicola</i>	Virginia Rail	MX-PIF	R	3	Freshwater Wetlands, Riparian, Coastal Wetlands
<i>Porzana carolina</i>	Sora	MX-PIF	B/W	2/3	Freshwater Wetlands, Riparian, Coastal Wetlands
<i>Sterna forsteri</i>	Forster's Tern	MX-PIF	B/W	2/3	Coastal Wetlands
<i>Columbina passerine</i>	Common Ground-Dove	PIF	W	3	Agricultural, Riparian
<i>Athene cunicularia</i>	Burrowing Owl	PIF	B/W	2/3	Agriculture
<i>Anas americana</i>	American Wigeon	NAWMP	W	2	Freshwater Wetlands, Coastal Wetlands, Agricultural
<i>Aythya marila</i>	Greater Scaup	NAWMP	W	2	Coastal Wetlands
<i>Botaurus lentiginosus</i>	American Bittern	PIF, MX-PIF	B/W	2/3	Coastal Wetlands, Freshwater Wetlands
<i>Egretta tricolor</i>	Tricolored Heron	NAWCP	W	2	Coastal Wetlands
<i>Aquila chrysaetos</i>	Golden Eagle	MX-PIF	R	2	Chaparral, Pine-Oak
<i>Arenaria interpres</i>	Ruddy Turnstone	USSCP	W	2	Coastal Wetlands
<i>Fratercula cirrhata</i>	Tufted Puffin	SJV	B/W	2/2	Islands
<i>Coccyzus americanus occidentalis</i>	Yellow-billed "Western" Cuckoo	SJV	B	2	Riparian
<i>Asio otus</i>	Long-eared Owl	MX-PIF, PIF	B/W	2/2	Riparian, Pine-Oak
<i>Psaltiriparus minimus</i>	Bushtit	MX-PIF, PIF	R	2	Chaparral, Riparian, Pine-Oak, Coastal Scrub
<i>rhynchus brunneicapillus</i>	Cactus Wren	MX-PIF	R	2	Chaparral, Urban, Agriculture, Coastal Scrub

Scientific Name	Common English Name	Plan	Season of Occurrence	RD B/W	Habitat
<i>Cistothorus palustris</i>	Marsh Wren	PIF	R	2	Riparian, Coastal Wetlands, Freshwater Wetlands
<i>Aimophila ruficeps</i>	Rufous-crowned Sparrow	MX-PIF	R	2	Chaparral, Coastal Scrub
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	MX-PIF, PIF	B/W	2/2	Agricultural, Chaparral

\* this species occurs in chaparral and oak habitats but only on Santa Cruz Island; it is placed in the Island habitat only.

The following Stewardship Responsibility Species for the California Coasts and Mountains (Table 8) 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 these 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 8. Additional Stewardship Responsibility Species in the Californian Coasts and Mountains Region.

Scientific Name	Common English Name	Season of Occurrence	RD (B/W)	Habitat
<i>Callipepla californica</i>	California Quail	R	5	Chaparral, Pine-Oak, Riparian
<i>Butorides striatus</i>	Green Heron	B/W	4/5	Freshwater Wetlands, Riparian
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	B/W	5/5	Freshwater Wetlands, Coastal Wetlands
<i>Elanus leucurus</i>	White-tailed Kite	R	5	Freshwater Wetlands, Agriculture, Pine-Oak
<i>Melanerpes formicivorus</i>	Acorn Woodpecker	R	5	Pine-Oak
<i>Sayornis nigricans</i>	Black Phoebe	R	5	Freshwater Wetlands, Riparian
<i>Vireo cassinii</i>	Cassin’s Vireo	B	5	Pine-Oak
<i>Aphelocoma californica</i>	Western Scrub-Jay	R	5	Pine-Oak
<i>Salpinctes obsoletus</i>	Rock Wren	R	5	Cliff-Rock
<i>Thryomanes bewickii</i>	Bewick’s Wren	R	5	Chaparral, Riparian
<i>Regulus calendula</i>	Ruby-crowned Kinglet	W	5	Pine-Oak, Urban
<i>Pipilo crissalis</i>	California Towhee	R	5	Chaparral, Urban, Riparian

The total number of Continental (82) and Regional (41) Concern species (Table 9) is lower than the Arid Borderlands Region. However, the planning area for the Californian Coasts and Mountains is much smaller than Arid Borderlands. The ratio of Continental Concern Species to regularly occurring species, however, is higher than other Regions. Considering the high level of endemism along the California coast, this is not surprising.

Table 9. Total and percentage of Concern Species and Stewardship Responsibility Species in the SJV and Californian Coasts and Mountains Region.

<b>Concern Category</b>	<b>Total Number of Concern Species in the Category</b>	<b>Concern Species as a % of the regularly occurring SJV (667) species</b>	<b>Concern Species as a % of the regularly occurring Californian Coasts and Mountains (340) species</b>
Continental Concern Species (Table 6)	82	12.3	24.1%
Continental Concern Species also with RD = 5	9	1.3	2.6%
Regional Concern Species (Table 7)	41	6.1	12.1%
Regional Concern Species also with RD =5	7	1.0	2.1%
Stewardship-Only * (Table 8)	12	1.8	3.5%
Total Stewardship species **	28	4.2	8.2%

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

\*\* A total of all Stewardship Species from Continental and Regional Concern, and Stewardship Lists.

## Californian Coasts and Mountains Habitat Sections

### Habitat Discussions:

The following sections describe the major habitats found in the Californian Coasts and Mountains 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 Californian Coasts and Mountains 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, RHJV (Riparian Habitat Joint Venture) 2004 (California), Mills et al. 2005 (Pacific Coast), CalPIF (California Partners in Flight) 2002 (oak woodlands), and CalPIF (California Partners in Flight) 2004 (coastal scrub and chaparral).

Abbreviations for sources for Habitat Needs are as follows:

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

Small (1994) = (Small)

Californian Coasts and Mountains chapter authors = (CCM)

## **Habitat: Pine-Oak Forest**

**Location:** Sierra San Pedro Martir and Sierra Juárez, and the coastal mountain ranges of southern California including the San Gabriel, San Bernardino, San Jacinto, Santa Rosa, Palomar, and Cuyamaca mountains.

**Dominant plant species:** Ponderosa Pine (*Pinus ponderosa*), California Black Oak (*Quercus kelloggii*), White Fir (*Abies concolor*), Sugar Pine (*Pinus lambertiana*), Coast Live Oak (*Quercus agrifolia*), Canyon Live Oak (*Q. chrysolepis*), Jeffrey Pine (*Pinus jeffreyi*), Incense Cedar (*Libocedrus decurrens*), and Western Juniper (*Juniperus occidentalis*).

**Physical/biological descriptions:** Pine-oak habitats of Baja California and southern California, and oak woodlands of southern California; also includes pine and mixed conifer forests and pinyon-juniper, which is characterized by a well-defined zone above chaparral in the California Biotic Province. Often found above 1,500 m elevation and isolated from each other (Brown 1994).

**Threats:** Urbanization (suburban sprawl) and wildfire in California; unsustainable grazing, fires, and timber cutting in Baja California.

**Opportunities for cooperation on conservation actions:** Work with CONANP, U.S. Forest Service, California Condor re-establishment program, and watershed protection groups.

**Primary Conservation Needs/Actions:** Work with CONANP and Forest Service to conserve bird habitat; work with landowners and ejidos for conservation easements and habitat management; promote sustainable grazing practices, logging, and development; promote conservation of habitat for hunting.

### **Priority Species for Pine-Oak Forest**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
California Condor	CC	IM	Undisturbed, patchy landscapes (CCM), large mammalian carrion, remote rocky cliffs for nesting and roosting	Double
Golden Eagle	RC	MA	Undisturbed open terrain in foothill chaparral and mountains; steep cliffs and tall trees for breeding (Small)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Long-eared Owl	RC	MA	Dense stands of trees adjacent to open country for hunting small mammals, also oaks near stream terraces (Small)	Increase by 50%
<b>Mountain Quail</b>	CC	<b>MA</b>	<b>Grass and scattered shrub understory, low to no grazing, proper fire regime</b>	<b>Maintain/Determine Status</b>
Flammulated Owl	CC	MA	Open mixed oak and conifer forest and open or broken conifer forest with some understory (Small)	Maintain/Determine Status
Black Swift	CC	MA	Waterfalls and cliffs for nesting and roosting, undisturbed canyons and steep valleys	Maintain/Determine Status
White-headed Woodpecker	CC	MA	Mixed pine forest, 1,290-2420m, and some lower in oaks in winter (Small)	Maintain/Determine Status
Nuttall's Woodpecker	CC	MA	Oak woodlands and coastal live oaks, also oaks in association with riparian (Small)	Maintain
Gray Vireo	CC	MA	Manzanita and oak; pinyon-juniper with shrubs (Small)	Increase by 50%
Pinyon Jay	CC	MA	Manzanita and pine; pinyon-juniper pygmy forests, 4,000-7,500 ft (Small)	Increase by 50%
Rufous Hummingbird	CC	PR	Especially penstemon, paintbrush, and cardinal flowers (Small)	Double
Band-tailed Pigeon	CC	PR	Mast crop, large expanses of oak woodlands and pine-oak forests	Increase by 50%
Spotted Owl	CC	PR	Canyon Live Oak in deep, well-shaded canyons, mature and multi-layered; up to 7,000 ft. (Small)	Increase by 50%
Olive-sided Flycatcher	CC	PR	Wooded canyons of mixed deciduous and conifers, pine forests, and mixed conifers; 4,000-9,000 ft (Small)	Increase by 50%
Oak Titmouse	CC	PR	Oak woodlands (large tracts)	Increase by 50%
Bushtit	RC	PR	Open oak woodlands, oak savannah (Small)	Increase by 50%



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
White-throated Swift	CC	PR	Cliff habitat for breeding	Maintain/Determine Status
Lewis's Woodpecker	CC	PR	Oak savannahs, pine-oak woodlands, and mixed conifers with abundant acorns and conifer seeds, tall decaying trees for nest cavities (Small)	Maintain/Determine Status
Lawrence's Goldfinch	CC	PR	Pine-oak woodlands, oak woodlands, adjacent to some type of available water (Small)	Maintain/Determine Status
Yellow-billed Magpie	CC	PR	Oak savannahs interspersed with open grass or agricultural fields (Small)	Maintain

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

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

### **Habitat: Coastal Scrub Shrubland (Matorral Costero)**

**Location:** From Santa Barbara south to San Quintín, primarily from sea level to 300 m elevation and possibly only 10 km inland (very narrow zone).

**Dominant plant species:** Lemonade Sumac (*Rhus integrifolia*), California Sagebrush (*Artemisia californica*), sages (*Salvia* spp.), Agave (*Agave* spp.), *Euphorbia misera*, Parry Buckeye (*Aesculus parryi*).

**Physical/biological descriptions:** Matorral Costero is a discontinuous habitat along the Pacific Coast; considered a transitional habitat between desert and chaparral and includes shrubs adapted to wind and saline moisture from the Pacific Ocean; is found on low hills, foothills, and valleys from sea level to the lower edge of chaparral, and on interior coastal valleys and foothills.

**Threats:** Unsustainable grazing, urban sprawl, habitat fragmentation, and wildfires.

**Opportunities for cooperation on conservation actions:** Private and social (ejidos) land conservation; Centro de Investigación Científica y de Educación (CISESE), Grupo Proesteros, public outreach and education; participation in local development plans, various legal instruments for conservation.

**Primary Conservation Needs/Actions:** Decree of NPA (Natural Protected Areas—state, Federal or municipal level protection); work with landowners to initiate conservation easements; protect habitats from destruction, fragmentation, urban encroachment, and human disturbance (primarily through recreational impacts); and support non-toxic shot programs in the range of the California Condor.

#### **Priority Species for Coastal Scrub Shrubland (Matorral Costero)**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
California Condor	CC	IM	Undisturbed, patchy landscapes with sufficient mammalian carrion such as cattle, deer, marine mammals; remote rocky cliffs for nesting and roosting (CCM)	Double
<b>California Gnatcatcher</b>	CC	MA	<b>Large expanses with coastal sage-scrub with tall subcanopy (for shade and nesting substrates)</b>	<b>Double</b>

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Gray Vireo	CC	MA	Coastal sage and scrublands, manzanita and oak scrublands often with juniper	Increase by 50%
Cactus Wren including (San Diego subspecies)	RC	PR	Undisturbed coastal scrub with spiny cactus such as prickly pear and cholla	Double
Loggerhead Shrike	RC	PR	Perch sites adjacent to open oak woodland habitats, peninsular scrublands, and agricultural edge	Increase by 50%
Bushtit	RC	PR	Midstory vegetation and some larger trees for nesting substrate	Increase by 50%
<b>California Thrasher</b>	<b>CC</b>	<b>PR</b>	<b>Undisturbed, dense chaparral and woodlands</b>	<b>Increase by 50%</b>
Rufous-crowned Sparrow	RC	PR	Rocky slopes, steep hillsides with varied vegetative structure	Increase by 50%
Black-chinned Sparrow	CC	PR	Vegetated rocky hillsides	Increase by 50%
Sage “Bell’s” Sparrow	RC	PR	Large expanses of <i>Lycium</i>	Increase by 50%
Northern Harrier	RC	PR	Wide variety of open habitats especially adjacent to salt marshes with small rodent prey	Maintain/Determine Status
Allen’s Hummingbird	CC	PR	Undisturbed riparian areas adjacent to chaparral	Maintain/Determine Status
Costa’s Hummingbird	CC	PR	Arid shrublands with flowering shrubs and trees	Maintain/Determine Status
<b>Wrentit</b>	<b>CC</b>	<b>PR</b>	<b>Dense stands of chaparral, undisturbed open terrain</b>	<b>Maintain</b>

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

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

## **Habitat: Chaparral Shrubland**

**Location:** From Point Conception, California south to San Telmo, Baja California primarily from the coastal zone to 800 m elevation and up to 60 km inland and between the coast and the Sonoran-Mojave Desert.

**Dominant plant species:** Manzanita (*Arctostaphylos* spp.), Chamisa-Chamiso de Vera Prieta (*Adenostoma fasciculatum*), sumac (*Rhus* spp.), agave (*Agave* spp.), ash (*Fraxinus* spp.), ceanothus (*Ceanothus* spp.), and various annual grasses.

**Physical/biological descriptions:** Chaparral covers mountains, hillsides, and foothills; characterized by evergreen, sclerophytic shrubs with deep roots, and small tough leaves that tolerate the periods of extreme drought that is typical of Mediterranean climate; well adapted to drought and fire and after burning chaparral species regenerate easily (Brown 1994).

**Threats:** Habitat destruction, wildfire, deforestation, fragmentation, erosion, and human disturbance (including recreational impacts); urban development, agriculture, and unsustainable grazing.

**Opportunities for cooperation on conservation actions:** Private land conservation efforts are possible (such as between Tecate and Tijuana); active habitat management options for select species (e.g., planting of riparian vegetation to benefit several bird species); working with NGOs such as Terra Peninsular, Pronatura, CISESE, and The Nature Conservancy in their existing conservation projects.

**Primary Conservation Needs/Actions:** Protect habitats from destruction, fragmentation, urban encroachment, and human disturbance (primarily through recreational impacts); work with landowners to develop conservation easements; and support non-toxic shot programs in the range of the California Condor.

**Priority Species for Chaparral Shrubland**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action*</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
California Condor	CC	IM	Undisturbed, patchy landscapes with sufficient mammalian carrion such as cattle, deer, marine mammals; remote rocky cliffs for nesting and roosting (CCM)	Double

Species	Concern Category*	Cons. Action*	Habitat Need	30-Year Population Objective
Golden Eagle	RC	MA	Undisturbed open chaparral in the foothills and mountains	Increase by 50%
Sage “Bell’s” Sparrow	RC	MA	Large expanses of <i>Lycium</i> appear to be very important	Increase by 50%
<b>Mountain Quail</b>	<b>CC</b>	<b>MA</b>	<b>Grass and scattered shrub understory</b>	<b>Maintain/Determine Status</b>
<b>Cactus “San Diego” Wren</b>	<b>RC</b>	<b>PR</b>	<b>Spiny cactus such as prickly pear and cholla</b>	<b>Double</b>
<b>California Thrasher</b>	<b>CC</b>	<b>PR</b>	<b>Dense stands of chaparral</b>	<b>Double</b>
Grasshopper Sparrow	RC	PR	In grasslands within chaparral, rolling hills and plains, variety of grass types and mixed with low shrubs (Small)	Double
Gray Vireo	CC	PR	Manzanita and oak scrublands often with juniper	Increase by 50%
Loggerhead Shrike	RC	PR	Perch sites adjacent to open oak woodland habitats, peninsular scrublands	Increase by 50%
Bushtit	RC	PR	Midstory vegetation and some larger trees for nesting substrate	Increase by 50%
Rufous-crowned Sparrow	RC	PR	Rocky slopes, steep hillsides with varied vegetative structure	Increase by 50%
Black-chinned Sparrow	CC	PR	Rocky hillsides	Increase by 50%
Northern Harrier	RC	PR	Wide variety of open habitats with small rodent prey	Maintain/Determine Status
Costa’s Hummingbird	CC	PR	Arid shrublands with flowering shrubs and trees	Maintain/Determine Status
Lawrence’s Goldfinch	CC	PR	Riparian edges	Maintain/Determine Status
<b>Wrentit</b>	<b>CC</b>	<b>PR</b>	<b>Dense stands of chaparral</b>	<b>Maintain</b>

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

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

## **Habitat: Riparian Wetlands**

**Location:** Stringers of riparian habitat exist throughout the entire coastline from Point Conception south to St. Telmo, primarily perpendicular to the coastline; most of these riparian stringers are highly fragmented, channelized, and/or rip-rapped and have some degree of flood control measures that impact the natural flood regimes and prevent natural regeneration of native riparian vegetation; riparian habitat also exists in the mountainous areas.

**Dominant plant species:** Sycamore (*Plantanus racemosa*), White Alder (*Alnus rhombifolia*), Fremont Cottonwood (*Populus fremontii*), Velvet Ash (*Fraxinus pennsylvanica* var. *velutina*), Goodding Willow (*Salix gooddingii*), Black Willow (*Salix nigra*), Canyon Live Oak (*Quercus chrysolepis*), Poison Oak (*Rhus toxicodendron*), and California Blackberry (*Rubus vitifolius*).

**Physical/biological descriptions:** Riparian deciduous forest, usually taller than surrounding coastal scrub or chaparral, where stream flows are well-developed, gallery forest can occur, dependent on periodic spring floods.

**Threats:** Probably the most heavily impacted and altered habitat in the Region, this habitat has seen nearly the entire spectrum of human use, including firewood collection, unsustainable grazing, conversion to agriculture, suburban/urban development, dewatering, water diversion, modification of the hydrological regime, and introduction of nonnative invasive species.

**Opportunities for cooperation on conservation actions:** Conservation easements offer an opportunity for immediate habitat improvements through promotion of natural hydrologic regimes and reduction of livestock grazing.

**Primary Conservation Needs/Actions:** Protect existing riparian habitat and begin reconstruction of natural riparian processes and habitat, and water conservation education.

### **Priority Species for Riparian Wetlands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Yellow-billed "Western" Cuckoo	RC	IM	Dense midstory and upper canopy of native riparian vegetation (cottonwood, willow, etc.)	Double
Bell's "Least" Vireo	RC	IM	Dense midstory-layer of native willow preferably with flowing water (Small)	Double

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Willow “Southwestern” Flycatcher	RC	IM	Midstory-layer of well-developed native willow with flowing water	Double
Allen’s Hummingbird	CC	MA	Riparian watercourses with flowers nearby (Small)	Maintain/Determine Status
Rufous Hummingbird	CC	PR	Abundant nectar sources	Double
Virginia Rail	RC	PR	Flooded riparian woodlands (Small)	Increase by 50%
Long-eared Owl	RC	PR	Riparian bottomlands, and streamside terraces with dense stands of live oaks (Small)	Increase by 50%
Olive-sided Flycatcher	CC	PR	Higher elevation streams, snags or trees with dead tops	Increase by 50%
Loggerhead Shrike	RC	PR	Riparian woodlands (Small)	Increase by 50%
Marsh Wren	RC	PR	Flooded willow thickets (Small)	Increase by 50%
Bushtit	RC	PR	Midstory vegetation and some larger trees for nesting substrate; willows dominate (Small)	Increase by 50%
<b>Wrentit</b>	<b>CC</b>	<b>PR</b>	<b>Undisturbed, willow, and <i>Baccharis</i> along riparian (Small)</b>	<b>Increase by 50%</b>
<b>California Thrasher</b>	<b>CC</b>	<b>PR</b>	<b>Dense thickets in riparian (Small)</b>	<b>Increase by 50%</b>
Sora	RC	PR	Marshy stream borders (Small)	Maintain/Determine Status
Common Ground-Dove	RC	PR	Riparian woodlands, expanding into this area (Small)	Maintain/Determine Status
<b>Lawrence’s Goldfinch</b>	<b>CC</b>	<b>PR</b>	<b>Riparian woodlands with substantial shrub understory (Small)</b>	<b>Maintain/Determine Status</b>
Nuttall’s Woodpecker	CC	PR	Riparian edge adjacent to oak woodlands, especially in s. California prefers riparian forests (Small)	Maintain

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## **Habitat: Freshwater Wetlands**

**Location:** Interior freshwater lakes, ponds, and marshes throughout the Region occurring inland from the maritime zone (salt and brackish water).

**Dominant plant species:** Mixture of aquatic emergent vegetation, dominated by cattail (*Typha domingensis*) and rushes (*Scirpus* spp.); may include cottonwoods (*Populus* spp.), willows (*Salix* spp.), and other riparian wetlands vegetation in backwaters and along edges of wetlands.

**Physical/biological descriptions:** Freshwater wetlands, backwaters, river oxbows, and undrained land; variable in size from small spring/seeps (<1 ha) to large marshes and reservoirs.

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

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

**Primary Conservation Needs/Actions:** Promote no net loss, protect existing wetlands, encourage restoration of destroyed or degraded sites, restore water flows, awareness; protection of breeding bird colony, prevention of human disturbance, prevention of human development in breeding areas.

### **Priority Species for Freshwater Wetlands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Tricolored Blackbird	CC	IM	Freshwater marshes with dense cattails/bulrushes (Small)	Double
Little Blue Heron	CC	MA	Marshes	Double
Marsh Wren	RC	MA	Freshwater marsh (Small)	Increase by 50%
Cinnamon Teal	RC	MA	Freshwater lakes, ponds, streams and flooded grassy fields (Small)	Maintain/Determine Status
American Bittern	RC	MA	Wetlands with dense stands of reeds (Small)	Maintain/Determine Status



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Least Bittern	RC	MA	Wetland with dense stands of emergent vegetation, with tules and cattails (Small)	Maintain/Determine Status
Snowy Egret	RC	MA	Irrigation channels, marshes, rivers (Small)	
Mallard	CC	MA	Freshwater lakes, ponds, flooded grassy fields (Small)	Maintain
Clark's Grebe	CC	PR	Marshes (Small)	Double
Short-billed Dowitcher	CC	PR	Lakes and ponds (Small)	Double
Virginia Rail	RC	PR	Freshwater marshes (Small)	Increase by 50%
Sora	RC	PR	Freshwater marshes (Small)	Maintain/Determine Status
American Avocet	CC	PR	Shallow freshwater ponds and sloughs (Small)	Maintain/Determine Status
American Wigeon	RC	PR	Rivers, marshes, lakes, ponds, especially near grassy fields (Small)	Maintain
Northern Shoveler	RC	PR	Lakes and marshes (Small)	Maintain
Bufflehead	RC	PR	Lakes, ponds, and large rivers (Small)	Maintain

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

## **Habitat: Coastal Wetlands**

**Location:** Once much more extensive, remaining examples extend along the coastline throughout the Region; representative locations include, Los Angeles Bay, San Diego Bay, and Estero Punta Banda near Ensenada, Baja California.

**Dominant plant species:** Glassworts (*Salicornia* spp.), saltgrasses (*Distichlis* spp.), Cordgrass (*Spartina foliosa*), Pickleweed (*Allenrolfea occidentalis*), and eelgrasses (*Zostera* spp.).

**Physical/biological descriptions:** Tidal marsh, estuaries, protected lagoons, sheltered bays; mangroves and other tropic-subtropic species are lacking or poorly represented; salt water or brackish; including the intertidal zone of mudflats, sand, shell, or rocky strand that are flushed by tidal action.

**Threats:** Much has been destroyed; some of the best remaining examples are in Baja California; threats include dredging, habitat destruction and alteration, encroachment of urban interface and agricultural development, mining of the beach and barrier sand and rock (from the beach and river interface) which threaten the integrity of estuaries; human disturbance particularly during nesting season; fishing, housing, and tourist developments, recreation, oyster aquaculture, and agricultural adjacent to the marshes.

**Opportunities for cooperation on conservation actions:** Conservation easements; develop local groups to protect nesting colonies; use nesting colonies as an educational opportunity.

**Primary Conservation Needs/Actions:** Protect remaining habitat; protect eelgrass beds from pollution, dredging, and other damage; protect nesting colonies; develop education programs; promote sustainable fisheries.

**Priority Species for Coastal Wetlands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Black Rail (including "California" subspecies)	CC	IM	Saltmarsh and estuarine habitats with <i>Salicornia</i> and saltgrass; may be extirpated; (Small, H&W)	Double
Clapper "Light-footed" Rail	RC	IM	Saltwater tidal marshes of pickleweed and cordgrass, tidal channels (Small)	Double
Savannah "Belding's" Sparrow	RC	IM	Salt marshes, with pickleweed and cordgrass (Small)	Double

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Gull-billed Tern	CC	IM	Undisturbed open, sandy substrate, (dikes, beaches) (CCM); salt works in San Diego (Small)	Increase by 50%
<b>Least “California” Tern</b>	<b>RC</b>	<b>IM</b>	<b>Undisturbed open, sandy substrate, (dikes, beaches); estuaries (CCM)</b>	<b>Increase by 50%</b>
<b>Brant</b>	<b>CC</b>	<b>MA</b>	<b>Requires eelgrass and seagrass (nonbreeding)</b>	<b>Double</b>
Lesser Scaup	CC	MA	Deep, unpolluted water	Double
Red Knot	CC	MA	Estuaries, marshes with tidal channels, tidal mudflats (Small)	Double
Northern Pintail	CC	MA	Brackish water	Increase by 50%
Snowy Plover	CC	MA	Undisturbed barrier beaches (CCM); sand flats, sandy dune-backed beaches, sand spits, etc. (Small)	Increase by 50%
Long-billed Curlew	CC	MA	Tidal mudflats, estuaries, saltwater marshes with tidal channels (nonbreeding) (Small)	Increase by 50%
Black Skimmer	CC	MA	Undisturbed open, sandy substrate (dikes, beaches) (CCM); coastal wetlands, estuaries, tidal mudflats (Small)	Increase by 50%
American Bittern	RC	MA	Wetland with dense stands of emergent vegetation	Maintain/Determine Status
Least Bittern	RC	MA	Wetland with dense stands of emergent vegetation	Maintain/Determine Status
Snowy Egret	RC	MA	Estuaries	Maintain/Determine Status
Tricolored Heron	RC	MA	Coastal lagoons, tidal channels, marshes, estuaries (Small)	Maintain
Black Oystercatcher	CC	MA	Rocky shores and breakwaters (Small)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Elegant Tern	CC	MA	Undisturbed open, sandy substrate, (dikes, beaches); estuaries, bays and harbors (Small)	Maintain/Determine Status
Horned Grebe	CC	PR	Bays, lagoons, estuaries (nonbreeding) (Small)	Double
Whimbrel	CC	PR	Estuaries, tidal mudflats, beaches, rocky shores (nonbreeding) (Small)	Double
Sanderling	CC	PR	Sandy beaches, rocky shores, mudflats, reefs, estuaries, undisturbed shoreline (nonbreeding) (Small)	Double
Dunlin	CC	PR	Estuaries, salt marsh, lagoons, tidal mudflats (nonbreeding) (Small)	Double
Short-billed Dowitcher	CC	PR	Estuaries, saltwater marshes, tidal mudflats (nonbreeding) (Small)	Double
Virginia Rail	RC	PR	Brackish marshes, saltwater marshes (Small)	Increase by 50%
Marbled Godwit	CC	PR	Estuaries, salt marshes, large expanses of exposed mudflats, low disturbance, isolated roosting sites (Small), low disturbance, isolated roosting sites (CCM)(nonbreeding)	Increase by 50%
Ruddy Turnstone	RC	PR	Tidal mudflats, beaches, rocky shores, and breakwaters (Small)	Increase by 50%
Surfbird	CC	PR	Rocky shores and breakwaters (Small)	Increase by 50%
Wilson's Phalarope	CC	PR	Lagoons, estuaries, salt bays, and ponds (Small)	Increase by 50%
Forster's Tern	RC	PR	Estuaries, lagoons, bays and harbors; salt works San Diego Bay (Small)	Increase by 50%
Marsh Wren	RC	PR	Brackish marshes, tidal saltwater marshes (Small)	Increase by 50%
Reddish Egret	CC	PR	Coastal lagoons, mudflats (Small)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Northern Harrier	RC	PR	Wide variety of open habitats including saltwater marshes (Small)	Maintain/Determine Status
Sora	RC	PR	Salt and brackish water marshes in winter (Small)	Maintain/Determine Status
American Avocet	CC	PR	Shallow exposed mudflats and wetlands; estuaries, lagoons (Small)	Maintain/Determine Status
Black Turnstone	CC	PR	Rocky shores (Small)	Maintain/Determine Status
Western Sandpiper	CC	PR	Exposed mudflats, estuaries, salt marshes, tidal channels, lagoons, tidal mudflats, sandy beaches; undisturbed roosting sites (Small)	Maintain/Determine Status
Heermann's Gull	CC	PR	Sloughs, estuaries, beaches, lagoons, bays and harbors (nonbreeding) (Small)	Maintain/Determine Status
Pigeon Guillemot	CC	PR	Bays and harbors (Small)	Maintain/Determine Status
Short-eared Owl	CC	PR	Marshes adjacent to grasslands or agricultural fields	Maintain/Determine Status
American Wigeon	RC	PR	Lagoons, estuaries, bays (Small)	Maintain
Northern Shoveler	RC	PR	Bays, lagoons, estuaries, tidal marshes and channels (Small)	Maintain
Greater Scaup	RC	PR	Deep bays	Maintain
Bufflehead	RC	PR	Bays, lagoons, estuaries, salt evaporative ponds where forage on brine shrimp and brinefly larvae (Small)	Maintain

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## **Habitat: Islands**

**Location:** Off the southern coast of California and northern coast of Baja California, includes the Channel Islands, Islas de los Coronados, and Isla Guadalupe.

**Dominant plant species:** Various vegetation that is associated with mainland desertscrub, chaparral, and coastal scrub; includes some forest species.

**Physical/biological descriptions:** Often desertic and predominantly rocky, however some of the larger islands have well-developed forest; cliffs, rocky crevices, rock piles.

**Threats:** Human recreational disturbance; non-native species especially rats, cats, and mice that prey on young at nests; disturbance by fishermen, boatmen, and lighthouse keepers at colonies during breeding; agriculture, urban development; over use of resources; egg collection; disease outbreaks; pollution events; unsustainable fishing of prey species.

**Opportunities for cooperation on conservation actions:** Work with the Secretaria de Marina, California Current Joint Venture, Channel Islands National Park, GECI, CONANP, and INE.

**Primary Conservation Needs/Actions:** Protect bird habitat/colonies from human disturbance, remove introduced mammalian predators; reduce threats from pollution, oil spills, overfishing of food sources, and entanglement in fish nets and lines.

**Priority Species for Islands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Guadalupe Storm-Petrel</b>	CC	IM	Burrows in soft soil of pine/oak/cypress forest, free of disturbance and introduced mammals (endemic, extinct?)	Double/Survey for extant individuals
<b>Guadalupe Caracara</b>	CC	IM	Open, scattered shrubs and trees (endemic, extinct?)	Double/Survey for extant individuals
<b>Dark-eyed “Guadalupe” Junco</b>	RC	IM	Undisturbed (ungrazed) cypress forest (endemic)	Double
Black-vented Shearwater	CC	IM	Soft soil for burrows, free of introduced mammals (Small)	Double
Ashy Storm-Petrel	CC	IM	Free of mammalian predators; undisturbed breeding areas; rocky crevices and burrows	Double

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Xantus's Murrelet</b>	CC	IM	Free of mammalian predators; undisturbed breeding areas; rocky crevices and burrows required immediately adjacent to the ocean for dispersal of young	Double
<b>Loggerhead "San Clemente" Shrike</b>	RC	IM	Dense shrubs for nesting (Small)	Double
Least Storm-Petrel	CC	IM	Free of mammalian predators; undisturbed breeding areas; rocky cliff crevices and rock piles (Audubon WatchList website 2005)	Increase by 50%
Black Storm-Petrel	CC	IM	Free of mammalian predators; undisturbed breeding areas; rocky crevices and burrows	Maintain/Determine Status
<b>Rufous-crowned "Todos Santos" Sparrow</b>	RC	IM	<b>Scrubland (possibly extinct) (BNA - Collins 1999)</b>	<b>Maintain/Determine Status</b>
Brown "California" Pelican	RC	MA	Undisturbed breeding areas; rocky islands for roosting and nesting, and estuaries for feeding	Double
Brandt's Cormorant	CC	MA	Rocky islands for roosting and nesting and estuaries for feeding	Increase by 50%
<b>Island Scrub-Jay</b>	CC	MA	<b>Coastal live oak woodland or chaparral dominated by scrub oak only on Santa Cruz Island; free of mammalian predators; sensitive to disturbance</b>	<b>Increase by 50%</b>
Leach's Storm-Petrel	RC	MA	Free of mammalian predators; undisturbed breeding areas; rocky crevices and burrows required immediately adjacent to the ocean for dispersal of young	Maintain/Determine Status
Pigeon Guillemot	CC	MA	Sea cliffs with holes, caves, crevices (Small)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Surfbird	CC	PR	Remote rocky beaches and cliffs, free of mammalian predators	Double
Pelagic Cormorant	CC	PR	Rocky islands with cliffs and ledges for roosting and nesting and estuaries for feeding	Increase by 50%
Blue-footed Booby	CC	PR	Beaches, shores (nonbreeding)	Increase by 50%
Brown Booby	CC	PR	Beaches, shores (nonbreeding)	Increase by 50%
Masked Booby	CC	PR	Beaches, shores (nonbreeding)	Increase by 50%
Laysan Albatross	CC	PR	Breeding areas free of disturbance, rocky or grassy topped islands	Maintain
Tufted Puffin	RC	PR	Sufficient soil to construct burrows, California sardines (extirpated in our area) (Small)	Protection to allow natural recolonization
Black Oystercatcher	CC	PR	Undisturbed breeding areas; remote rocky beaches and cliffs, free of mammalian predators	Maintain/Determine Status
Black Turnstone	CC	PR	Rocky shores (similar to above)	Maintain/Determine Status
Heermann's Gull	CC	PR	Beaches, shores (nonbreeding)	Maintain/Determine Status

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**Habitat: Off-Shore/Pelagic**

**Location:** Off the coast of southern California and northern Baja California; Pacific Ocean waters from the coast west 200 nautical miles or 230 statute miles.

**Dominant plant species:** None.

**Physical/biological descriptions:** Open water, enriched by the up-welling of nutrient rich deep cold water.

**Threats:** Depletion of sardine and other fish stocks, fishing lines, pollution, oil spills.

**Opportunities for cooperation on conservation actions:** California Current Joint Venture.

**Primary Conservation Needs/Actions:** A large number of species use the open ocean within maritime territorial boundaries, especially at times other than the breeding months. Needs are protection from entanglement in fishing lines and nets and protection of fish stocks. The “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 over-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**

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	Increase by 50%
Least Storm-Petrel	CC	IM	“	Increase by 50%
Craveri’s Murrelet	CC	IM	“	Increase by 50%
Black Storm-Petrel	CC	IM	“	Maintain/Determine Status
Brandt’s Cormorant	CC	MA	“	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Surf Scoter	CC	PR	“	Double
White-winged Scoter	CC	PR	“	Double
Black Scoter	CC	PR	“	Double
Black-footed Albatross	CC	PR	“	Increase by 50%
Pink-footed Shearwater	CC	PR	“	Increase by 50%
Sooty Shearwater	CC	PR	“	Increase by 50%
Masked Booby	CC	PR	“	Increase by 50%
Blue-footed Booby	CC	PR	“	Increase by 50%
Brown Booby	CC	PR	“	Increase by 50%
Red-footed Booby	CC	PR	“	Increase by 50%
Pelagic Cormorant	CC	PR	“	Increase by 50%
Flesh-footed Shearwater	CC	PR	“	Maintain/Determine Status
Buller's Shearwater	CC	PR	“	Maintain/Determine Status
Short-tailed Shearwater	CC	PR	“	Maintain/Determine Status

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## **Habitat: Cliff/Rock**

**Location:** Throughout the Region, especially in the mountain ranges of southern California and the Sierra San Pedro Martir and Sierra Juárez in Baja California, and along the coast where rock formations provide avian habitat.

**Dominant plant species:** Various species depending on the surrounding habitat.

**Physical/biological descriptions:** Sparse vegetation, sheer cliffs, flat rocky areas, outcrops, and rocky slopes.

**Threats:** Recreational disturbance at nesting sites.

**Opportunities for cooperation on conservation actions:** Work with U.S. Forest Service and Biosphere Reserves to monitor and protect nesting areas.

**Primary Conservation Needs/Actions:** Education and awareness; identify important nesting areas; monitor and protect nesting areas.

**Priority Species for Cliff/Rock**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
California Condor	CC	IM	Undisturbed, patchy landscapes with sufficient mammalian carrion such as cattle, deer, marine mammals; remote rocky cliffs for nesting and roosting (CCM)	Double
Pigeon Guillemot	CC	MA	Sea cliffs with holes, caves, ledges, or crevices (Small)	Maintain/Determine Status
Black Swift	CC	MA	Steep cliffs or ocean bluffs with ledges, cavities, or cracks for nest sites, almost always behind waterfalls (Small)	Maintain/Determine Status

White-throated Swift	CC	PR	Crevices in cliffs, bluffs, canyon walls, and large rocks, from sea level to 7000 ft (Small)	Maintain/Determine Status
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## **Habitat: Urban**

**Location:** Cities and towns throughout the entire length of this Region from Pt. Conception south to St. Telmo.

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

**Physical/biological descriptions:** Heavily altered, paved, urban/suburban/commercial/industrial development, non-natural food sources, and sources of water.

**Threats:** Pollution, pesticides, wildlife diseases, domestic and feral animals (cats) preying on birds, general threats due to urban infrastructure (i.e. electrocutions, windows, and collisions), invasive/nonnative plants.

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

**Primary Conservation Needs/Actions:** Increase awareness, planned development, water conservation, urban/suburban planning to control urban sprawl, greenbelts, raptor-friendly power poles, public outreach/education, native landscaping, initiate programs such as “Cats Indoors!”, pollution control.

**Priority Species for Urban Habitat**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Rufous Hummingbird	CC	PR	Urban/suburban areas with flowers, winter	Double
Cactus Wren	RC	PR	Arid scrublands adjacent to urban and agricultural habitats	Double
<b>California Thrasher</b>	CC	<b>PR</b>	<b>Wide variety of habitats, urban near chaparral and woodlands</b>	<b>Increase by 50%</b>
Costa's Hummingbird	CC	PR	Urban/suburban areas with flowers	Maintain/Determine Status

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

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

## **Habitat: Agriculture**

**Location:** Throughout the entire length of this Region from Pt. Conception south to St. Telmo.

**Dominant plant species:** Various pasture grasses, alfalfa, seasonal and perennial crops including lettuce, wildflowers, avocado, olive, citrus, tomatoes and other truck crops.

**Physical/biological descriptions:** Monocultures, disturbed fields, fallow fields, waste grain, sod farms, natural edges/hedgerows.

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

**Opportunities for cooperation on conservation actions:** Cooperating with ranchers/farmers on various projects (wildlife-friendly, added value projects); working on shorebird, waterfowl, and winter raptor habitats; increase collaborative efforts; reduce pesticide use; promote organic farming; and water conservation.

**Primary Conservation Needs/Actions:** Education of needs of priority birds, finding common objectives.

**Priority Species for Agricultural Habitats**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Tricolored Blackbird	CC	MA	Agriculture drains, ditches, wetlands	Double
Long-billed Curlew	CC	MA	Grasslands, and agriculture fields with short grass (Small)	Increase by 50%
Mountain Plover	CC	MA	Short grass fields or early alfalfa fields	Maintain/Determine Status
Cactus Wren	RC	PR	Arid scrublands adjacent to urban and agricultural habitats	Double
Grasshopper Sparrow	RC	PR	Native grasslands, also agricultural fields.	Double
Loggerhead Shrike	RC	PR	Suburban near open oak woodland habitats, peninsular scrublands, and agricultural edge	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Common Ground-Dove	RC	PR	Orchards, edges of agricultural fields with thick shrubs (Small)	Maintain/Determine Status
Burrowing Owl	RC	PR	Field edges, grass and hay fields with usually mammal burrows	Maintain/Determine Status
Short-eared Owl	CC	PR	Adjacent to marshes	Maintain/Determine Status
Savannah Sparrow	RC	PR	Hay meadows and alfalfa fields (Small)	Maintain/Determine Status
Western Meadowlark	RC	PR	Pastures, agricultural fields (Small)	Maintain/Determine Status
American Wigeon	RC	PR	Pastures, farm fields, and other grassy areas often some distance from water (Small)	Maintain

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

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

## **Focus Areas for the Californian Coasts and Mountains 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 36 Focus Areas in the Californian Coasts and Mountains Region. They are a combination of the Important Bird Areas as designated by the California IBA program and the Áreas de Importancia para la Conservación de las Aves en México. Descriptions of Focus Areas can be found at <http://ca.audubon.org/IBA.htm> for California 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 subsequent versions of this Plan.

### **Focus Areas in California:**

CCM-Ca-1 Aguanga Area  
CCM-Ca-2 Baldwin Lake  
CCM-Ca-3 Ballona Valley  
CCM-Ca-4 Bautista Creek  
CCM-Ca-5 Camp Pendleton  
CCM-Ca-6 Channel Islands Lake Casitas Area  
CCM-Ca-7 Lake Elsinore  
CCM-Ca-8 Lake Mathews/Estelle Mountain  
CCM-Ca-9 Los Angeles Flood Control Basin  
CCM-Ca-10 Lower Los Angeles River  
CCM-Ca-11 Mission Bay  
CCM-Ca-12 North San Diego Lagoons  
CCM-Ca-13 Orange Coast Wetlands  
CCM-Ca-14 Orange County Wilderness Parks  
CCM-Ca-15 Pamo Valley  
CCM-Ca-16 Pt. Mugu  
CCM-Ca-17 Puente-Chino Hills  
CCM-Ca-18 San Diego Bay



CCM-Ca-19 San Clemente Island  
CCM-Ca-20 San Diego NWR - east  
CCM-Ca-21 San Diego Peaks  
CCM-Ca-22 San Jacinto Valley  
CCM-Ca-23 San Joaquin Hills  
CCM-Ca-24 San Luis Rey River  
CCM-Ca-25 San Pasqual Valley  
CCM-Ca-26 Santa Ana River - upper  
CCM-Ca-27 Santa Ana River Valley  
CCM-Ca-28 Santa Clara River Valley  
CCM-Ca-29 Skinner Reservoir Area  
CCM-Ca-30 Southern Orange County  
CCM-Ca-31 Terminal Island Tern Colony  
CCM-Ca-32 Tijuana River Reserve

**Focus Areas in Baja California:**

CCM-BC-1 Bahía Todos Santos - AICA103  
CCM-BC-2 Islas Los Coronados - AICA219  
CCM-BC-3 Sierra San Pedro Martir - AICA104  
CCM-BC-4 Sierra Juárez - AICA105

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*.

## **Mexican Highlands Region Chapter**

### **BCR 34**

Juan Caicedo, Jennifer N. Duberstein, Eduardo Gómez-Limón, Alberto Macias-Duarte, Susan Wethington, and Scott Wilbor

#### **Location:**

The Sierra Madre Occidental Bird Conservation Region includes parts of Arizona, New Mexico, Sonora, Sinaloa, Chihuahua, Durango, Nayarit, Jalisco, Zacatecas, Aguascalientes, Guanajuato, and San Luis Potosi (Figure 4). For purposes of this Plan we include only the Arizona portion in the United States. In Mexico, we include the entire BCR in the analyses, but we cover only the portions in the states of Sonora and Sinaloa for Focus Areas and recommendations. In the Mexican Species Assessment Process, BCR 34 was analyzed as a stand-alone BCR and given the name “Mexican Highlands”; this name is used in this Plan.

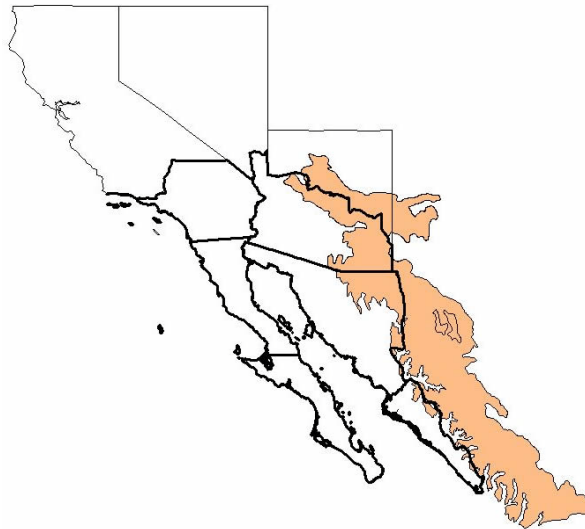


Figure 4. Map of the Mexican Highland Region.

#### **Description:**

This area is characterized by high elevations and complex topography with high mountain forests interdigitated with semi-desert grasslands, Sinaloan thornscrub, tropical deciduous forest (TDF), and Chihuahuan and Sonoran desertscrub. The southern-most extension of the Rocky Mountains along the Mogollon Rim in Arizona reaches south to meet the Sierra Madre Occidental mountain range, which runs along a northwest to southeast parallel to the Pacific Coast. It includes many isolated mountain ranges (Sky Islands) in central and southeastern Arizona, southwestern New Mexico, and northern Sonora. In Mexico, the Sierra Madre Occidental is found from Sonora and

Chihuahua to central Mexico, where they connect with the Sur del Altiplano Mexicano.

At the highest elevations in this Region, in canyons and on north slopes, a mixed conifer forest of Douglas Fir, White Fir, Limber Pine, Mexican White Pine, and Aspen or Ponderosa Pine communities are found. Spruce-Fir is generally lacking in all but the most northern parts of the region. The lower limits of these pine forests merge with Pinyon-Juniper, Chaparral, and Pine-Oak (i.e., Madrean evergreen woodland). Grasslands, which are often now degraded, are also found at the lower contact zone. Riparian habitat is important throughout, as are desert wetlands such as playas and ciénegas. Remnants of old-growth pine-oak forest and habitat for the possibly extinct Imperial Woodpecker and other important species, such as Golden Eagle, Military Macaw, Thick-billed Parrot, and Eared Trogon occur here. Other priority landbirds of this BCR are Sinaloa Martin, Spotted Owl, Red-faced Warbler, and Aztec Thrush. Among the species whose range extends into the United States in this region, highest priorities include Red-faced Warbler, Five-striped Sparrow, and Montezuma Quail. Riparian areas in lower portions of the BCR support many in-transit migrants as well as breeding Thick-billed Kingbird, Yellow-billed “Western” Cuckoo, and Willow “Southwestern” Flycatcher. Most uplands in the United States are publicly owned, but lower-elevation grasslands and riparian are mostly privately owned. Significant wetland habitats, such as Willcox Playa, provide wintering habitat for waterfowl and waterbirds.

#### **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 Mexican Highlands 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 Mexican Highlands 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 the entire BCR 34 within Arizona, New Mexico, Sonora, Sinaloa, Chihuahua, Durango, and Jalisco 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 BCR 34 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; and Pine-Oak=Pine Oak Forest.

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 10. Continental Concern Species in the Mexican Highlands Region.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Cyrtonyx montezumae</i>	Montezuma Quail	PIF, MX-PIF	R	5	Pine-Oak, Grassland, Riparian
<i>Columba fasciata</i>	Band-tailed Pigeon	PIF	B/W	5/2	Pine-Oak, Mixed Conifer
<i>Rhynchopsitta pachyrhyncha</i>	Thick-billed Parrot	PIF, MX-PIF	R	5	Pine-Oak, Mixed Conifer
<i>Streptoprocne semicollaris</i>	White-naped Swift	MX-PIF	R	5	Tropical Deciduous Forest, Pine-Oak
<i>Euptilotis neoxenus</i>	Eared Quetzal	MX-PIF	R	5	Mixed Conifer, Pine-Oak
<i>Melanerpes lewis</i>	Lewis’s Woodpecker	PIF	B/W	3/5	Pine-Oak, Pinyon-Juniper
<i>Picoides arizonae</i>	Arizona Woodpecker	PIF, MX-PIF	R	5	Pine-Oak, Riparian
<i>Piculus auricularis</i>	Gray-crowned Woodpecker	MX-PIF	R	5	Pine-Oak, Riparian
<i>Campephilus imperialis</i>	Imperial Woodpecker	MX-PIF	R	5	Pine-Oak, Mixed Conifer
<i>Lepidocolaptes leucogaster</i>	White-striped Woodcreeper	MX-PIF	R	5	Mixed Conifer, Pine-Oak

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Vireo bellii</i>	Bell's Vireo	PIF	B	5	Riparian, Bosque, Tropical Deciduous Forest
<i>Vireo vicinior</i>	Gray Vireo	PIF	B	5	Pine-Oak, Pinyon-Juniper, Chaparral
<i>Cyanocorax dickeyi</i>	Tufted Jay	MX-PIF	R	5	Pine-Oak, Mixed Conifer
<i>Progne sinaloae</i>	Sinaloa Martin	MX-PIF	B	5	Pine-Oak, Mixed Conifer
<i>Ridgwayia pinicola</i>	Aztec Thrush	MX-PIF	B/W	5/3	Pine-Oak, Riparian, Mixed Conifer
<i>Vermivora virginiae</i>	Virginia's Warbler	PIF	B	5	Pine-Oak, Riparian, Mixed Conifer, Pinyon-Juniper
<i>Dendroica graciae</i>	Grace's Warbler	PIF	R	5	Pine-Oak, Mixed Conifer, Pinyon-Juniper
<i>Cardellina rubrifrons</i>	Red-faced Warbler	PIF, MX-PIF	B/W	5/2	Riparian, Mixed Conifer, Pine-Oak
<i>Piranga erythrocephala</i>	Red-headed Tanager	MX-PIF	B/W	5/4	Pine-Oak, Mixed Conifer
<i>Aimophila quinquestriata</i>	Five-striped Sparrow	PIF, MX-PIF	B/W	4/5	Desertscrub, Tropical Deciduous Forest, Grassland
<i>Otus flammeolus</i>	Flammulated Owl	PIF	B/W	4/2	Pine-Oak, Mixed Conifer
<i>Strix occidentalis</i>	Spotted Owl	PIF, MX-PIF	R	4	Pine-Oak, Riparian, Mixed Conifer
<i>Nyctiphrynus mcleodii</i>	Eared Poorwill	MX-PIF	R	4	Pine-Oak
<i>Aeronautes saxatalis</i>	White-throated Swift	PIF	R	4	Cliff/Rock
<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	PIF	R	4	Pinyon-Juniper, Pine-Oak
<i>Ptilogonys cinereus</i>	Gray Silky-Flycatcher	MX-PIF	R	4	Pine-Oak
<i>Vermivora luciae</i>	Lucy's Warbler	PIF	B	4	Riparian, Bosque
<i>Ergaticus ruber</i>	Red Warbler	MX-PIF	R	4	Pine-Oak, Mixed Conifer
<i>Basileuterus belli</i>	Golden-browed Warbler	MX-PIF	B/W	4/3	Pine-Oak, Mixed Conifer
<i>Pipilo aberti</i>	Abert's Towhee	PIF	R	4	Riparian, Desertscrub

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Spizella atrogularis</i>	Black-chinned Sparrow	PIF	R	4	Chaparral, Pinyon-Juniper
<i>Passerina versicolor</i>	Varied Bunting	PIF, MX-PIF	B/W	4/2	Bosque, Desertscrub, Tropical Deciduous Forest, Riparian
<i>Euphonia elegantissima</i>	Elegant Euphonia	MX-PIF	B/W	¾	Pine-Oak
<i>Anas acuta</i>	Northern Pintail	NAWMP	B/W	1/3	Wetlands
<i>Callipepla squamata</i>	Scaled Quail	PIF	R	3	Grassland, Desertscrub
<i>Buteo swainsoni</i>	Swainson's Hawk	PIF	B	3	Grassland, Agriculture, Desertscrub
<i>Ara militaris</i>	Military Macaw	MX-PIF	R	3	Pine-Oak, Cliff/Rock, Tropical Deciduous Forest
<i>Micrathene whitneyi</i>	Elf Owl	PIF, MX-PIF	B	3	Pine-Oak, Riparian, Tropical Deciduous Forest, Bosque, Desertscrub
<i>Cypseloides niger</i>	Black Swift	PIF	B	3	Cliff/Rock, Riparian
<i>Atthis heloisa</i>	Bumblebee Hummingbird	MX-PIF	R	3	Mixed Conifer, Pine-Oak
<i>Trogon elegans</i>	Elegant Trogon	PIF, MX-PIF	R	3	Pine-Oak, Riparian, Tropical Deciduous Forest
<i>Empidonax traillii</i>	Willow Flycatcher	PIF	B/W	3/2	Riparian
<i>Myadestes occidentalis</i>	Brown-backed Solitaire	MX-PIF	R	3	Pine-Oak, Riparian
<i>Toxostoma bendirei</i>	Bendire's Thrasher	PIF	R	3	Desertscrub, Grassland
<i>Buarremon virenticeps</i>	Green-striped Brush-Finch	MX-PIF	B/W	3/2	Mixed Conifer, Pine-Oak
<i>Aimophila carpalis</i>	Rufous-winged Sparrow	PIF, MX-PIF	B/W	3/2	Tropical Deciduous Forest, Desertscrub, Grassland
<i>Oriturus superciliosus</i>	Striped Sparrow	MX-PIF	R	3	Pine-Oak, Grassland
<i>Spizella breweri</i>	Brewer's Sparrow	PIF	W	3	Grassland, Desertscrub
<i>Xenospiza baileyi</i>	Sierra Madre Sparrow	MX-PIF	R	3	Grassland, Pine-Oak, Mixed Conifer
<i>Anas platyrhynchos</i>	Mallard	NAWMP	B/W	2/2	Wetlands, Agriculture

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Aythya affinis</i>	Lesser Scaup	NAWMP	W	2	Wetland
<i>Penelope purpurascens</i>	Crested Guan	MX-PIF	R	2	Pine-Oak, Mixed Conifer
<i>Dendragapus obscurus</i>	Blue Grouse	PIF	R	2	Mixed Conifer
<i>Aechmophorus clarkia</i>	Clark's Grebe	PIF	W	2	Wetlands
<i>Harpyhaliaetus solitarius</i>	Solitary Eagle	MX-PIF	R	2	Pine-Oak, Mixed Conifer
<i>Charadrius alexandrinus</i>	Snowy Plover	PIF, USSCP	B	2	Wetlands
<i>Charadrius montanus</i>	Mountain Plover	USSCP, PIF	W	2	Agriculture, Grassland
<i>Recurvirostra americana</i>	American Avocet	PIF	B/W	½	Wetlands
<i>Numenius americanus</i>	Long-billed Curlew	USSCP, PIF	W	2	Grassland, Wetlands, Agriculture
<i>Amazona finschi</i>	Lilac-crowned Parrot	MX-PIF	B/W	½	Pine-Oak, Tropical Deciduous Forest
<i>Asio flammeus</i>	Short-eared Owl	PIF	W	2	Grassland, Wetlands, Agriculture
<i>Tilmatura dupontii</i>	Sparkling-tailed Hummingbird	MX-PIF	R	2	Pine-Oak, Tropical Deciduous Forest
<i>Calypte costae</i>	Costa's Hummingbird	PIF	B/W	2/1	Riparian, Desertscrub, Urban
<i>Contopus cooperi</i>	Olive-sided Flycatcher	PIF	B	2	Pine-Oak, Mixed Conifer
<i>Tyrannus crassirostris</i>	Thick-billed Kingbird	PIF, MX-PIF	R	2	Riparian, Tropical Deciduous Forest
<i>Pachyramphus major</i>	Gray-collared Becard	MX-PIF	R	2	Pine-Oak
<i>Anthus spragueii</i>	Sprague's Pipit	PIF	W	2	Grassland, Agriculture
<i>Vermivora crissalis</i>	Colima Warbler	PIF	W	2	Mixed Conifer, Pine-Oak
<i>Euthlypis lachrymosa</i>	Fan-tailed Warbler	MX-PIF	R	2	Pine-Oak, Riparian, Tropical Deciduous Forest
<i>Ammodramus bairdii</i>	Baird's Sparrow	PIF	W	2	Grassland
<i>Pheucticus chrysopheplus</i>	Yellow Grosbeak	MX-PIF	R	2	Riparian, Tropical Deciduous Forest
<i>Coccothraustes abeillei</i>	Hooded Grosbeak	MX-PIF	R	2	Pine-Oak, Mixed Conifer



Species of Regional Concern (Table 11) 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 species 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 11. Regional Concern Species in the Mexican Highlands.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Meleagris gallopavo mexicana</i>	Wild “Gould’s” Turkey	SJV	R	5	Pine-Oak, Riparian
<i>Haliaeetus leucocephalus</i>	Bald Eagle (Southwestern popn.)	SJV	B/W	5/3	Riparian, Wetlands
<i>Accipiter gentilis apache</i>	Northern “Apache” Goshawk	SJV	R	5	Pine-Oak, Riparian, Mixed Conifer
<i>Coccyzus americanus occidentalis</i>	Yellow-billed “Western” Cuckoo	SJV	B	5	Riparian, Bosque
<i>Megascops trichopsis</i>	Whiskered Screech-Owl	MX-PIF	R	5	Pine-Oak, Riparian
<i>Lampornis clemenciae</i>	Blue-throated Hummingbird	MX-PIF	B/W	5/5	Pine-Oak, Riparian
<i>Trogon mexicanus</i>	Mountain Trogon	MX-PIF	B/W	5/5	Pine-Oak, Mixed Conifer
<i>Empidonax traillii extimus</i>	Willow “Southwest” Flycatcher	SJV	B	5	Riparian
<i>Empidonax affinis</i>	Pine Flycatcher	MX-PIF	R	5	Pine-Oak
<i>Empidonax occidentalis</i>	Cordilleran Flycatcher	MX-PIF	B/W	5/5	Pine-Oak, Riparian, Mixed Conifer
<i>Tyrannus vociferans</i>	Cassin’s Kingbird	PIF, SJV	B/W	5/3	Riparian, Tropical Deciduous Forest, Agriculture, Pinyon-Juniper
<i>Poecile sclateri</i>	Mexican Chickadee	MX-PIF	B/W	5/2	Pine-Oak, Mixed Conifer
<i>Catharus occidentalis</i>	Russet Nightingale-Thrush	MX-PIF	R	5	Pine-Oak

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Myioborus pictus</i>	Painted Redstart	MX-PIF	B/W	5/4	Pine-Oak, Riparian
<i>Aimophila ruficeps</i>	Rufous-crowned Sparrow	PIF	B/W	5/5	Grassland, Desertscrub, Chaparral, Pine-Oak
<i>Ammodramus savannarum ammodramus</i>	Grasshopper “Arizona” Sparrow	SJV	B/W	5/2	Grassland
<i>Sturnella magna liliana</i>	Eastern “Lilian’s” Meadowlark	SJV	B/W	5/5	Grassland, Agriculture
<i>Accipiter cooperi</i>	Cooper’s Hawk	PIF, SJV	B/W	2/4	Pinyon-Juniper, Pine-Oak, Riparian
<i>Accipiter gentilis</i>	Northern Goshawk	MX-PIF, PIF, SJV	B/W	4/3	Pine-Oak, Riparian, Mixed Conifer
<i>Glaucidium gnoma</i>	Northern Pygmy-Owl	MX-PIF, PIF	R	4	Pine-Oak, Riparian, Mixed Conifer
<i>Caprimulgus vociferous arizonae</i>	“Stephen’s” Whip-poor-will	SJV	R	4	Pine-Oak, Riparian, Mixed Conifer
<i>Eugenes fulgens</i>	Magnificent Hummingbird	MX-PIF	B/W	4/4	Pine-Oak, Mixed Conifer, Riparian
<i>Selasphorus platycercus</i>	Broad-tailed Hummingbird	PIF	B/W	4/2	Pine-Oak, Mixed Conifer, Riparian, Pinyon-Juniper
<i>Melanerpes uropygialis</i>	Gila Woodpecker	SJV	B/W	4/4	Desertscrub, Tropical Deciduous Forest, Riparian, Bosque, Urban
<i>Mitrephanes phaeocercus</i>	Tufted Flycatcher	MX-PIF	B/W	4/3	Riparian, Pine-Oak
<i>Myiodynastes luteiventris</i>	Sulphur-bellied Flycatcher	MX-PIF, SJV	B	4	Pine-Oak, Riparian, Tropical Deciduous Forest
<i>Lanius ludovicianus</i>	Loggerhead Shrike	MX-PIF, PIF	B/W	3/4	Tropical Deciduous Forest, Grassland, Agriculture, Desertscrub
<i>Turdus assimilis</i>	White-throated Robin	MX-PIF	R	4	Riparian, Mixed Conifer, Pine-Oak, Tropical Deciduous Forest
<i>Dendroica petechia sonorana</i>	Yellow “Sonoran” Warbler	SJV	B/W	4/3	Riparian
<i>Piranga rubra</i>	Summer Tanager	MX-PIF, SJV	B/W	4/3	Riparian
<i>Piranga bidentata</i>	Flame-colored Tanager	MX-PIF	B/W	4/4	Pine-Oak, Riparian

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Pipilo fuscus</i>	Canyon Towhee	PIF, SJV	B/W	4/4	Tropical Deciduous Forest, Grassland, Desertscrub
<i>Anas platyrhynchos diazi</i>	“Mexican” Mallard	SJV	B/W	3/3	Wetland, Agriculture
<i>Asturina nitida</i>	Gray Hawk	MX-PIF, PIF, SJV	B/W	3/2	Tropical Deciduous Forest, Riparian, Bosque
<i>Aquila chrysaetus</i>	Golden Eagle	MX-PIF, SJV	B/W	3/3	Pine-Oak, Grassland, Pinyon-Juniper, Cliff/Rock, Tropical Deciduous Forest, Mixed Conifer
<i>Columbina passerine</i>	Common Ground-Dove	PIF	B/W	2/3	Tropical Deciduous Forest, Riparian, Agriculture, Desertscrub
<i>Megascops kennicottii</i>	Western Screech-Owl	MX-PIF	B/W	3/3	Desertscrub, Tropical Deciduous Forest, Bosque, Riparian, Pinyon-Juniper
<i>Phalaenoptilus nuttallii</i>	Common Poorwill	SJV	B/W	3/2	Pine-Oak, Desertscrub, Grassland, Pinyon-Juniper
<i>Amazilia violiceps</i>	Violet-crowned Hummingbird	SJV	B/W	3/2	Riparian, Tropical Deciduous Forest
<i>Camptostoma imberbe</i>	Northern Beardless-Tyrannulet	MX-PIF, PIF	B/W	3/1	Bosque, Riparian, Tropical Deciduous Forest
<i>Vireo gilvus</i>	Warbling Vireo	MX-PIF	B	3	Riparian, Mixed Conifer, Pine-Oak
<i>Cinclus mexicanus</i>	American Dipper	MX-PIF, SJV	B/W	3/2	Riparian
<i>Phainopepla nitens</i>	Phainopepla	SJV	B/W	3/3	Riparian, Bosque, Tropical Deciduous Forest, Desertscrub
<i>Aimophila cassinii</i>	Cassin’s Sparrow	PIF	B/W	3/3	Desertscrub, Grassland, Tropical Deciduous Forest
<i>Aimophila botterii</i>	Botteri’s Sparrow	MX-PIF, PIF	B/W	2/3	Grassland
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	MX-PIF, PIF, SJV	B/W	2/3	Grassland
<i>Cardinalis sinuatus</i>	Pyrrhuloxia	PIF	B/W	2/3	Desertscrub, Grassland, Tropical Deciduous Forest
<i>Sturnella neglecta</i>	Western Meadowlark	PIF	B/W	2/3	Grassland, Agriculture

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Colinus virginianus ridgwayi</i>	Northern “Masked” Bobwhite	SJV	R	2	Grassland
<i>Circus cyaneus</i>	Northern Harrier	PIF	B/W	½	Wetland, Agriculture, Grassland
<i>Parabuteo unicinclus</i>	Harris’s Hawk	PIF, SJV	B/W	2/2	Tropical Deciduous Forest, Desertscrub
<i>Buteo regalis</i>	Ferruginous Hawk	PIF	B/W	2/2	Grassland
<i>Falco femoralis</i>	Aplomado Falcon	SJV	B/W	2/2	Grassland
<i>Athene cunicularia</i>	Burrowing Owl	PIF	B/W	2/2	Desertscrub, Grassland, Agriculture
<i>Strix varia</i>	Barred Owl	MX-PIF	B/W	2/2	Pine-Oak, Mixed Conifer
<i>Asio otus</i>	Long-eared Owl	PIF	B/W	2/2	Riparian, Pinyon-Juniper, Agriculture, Pine-Oak, Desertscrub
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	MX-PIF	B/W	2/2	Pine-Oak, Mixed Conifer
<i>Calothorax Lucifer</i>	Lucifer Hummingbird	MX-PIF	B	2	Pine-Oak, Riparian, Desertscrub, Bosque
<i>Xiphorhynchus flavigaster</i>	Ivory-billed Woodcreeper	MX-PIF	R	2	Tropical Deciduous Forest, Pine-Oak
<i>Attila spadiceus</i>	Bright-rumped Attila	MX-PIF	B/W	2/2	Riparian, Tropical Deciduous Forest

The following Stewardship Responsibility Species for the Mexican Highlands (Table 12) 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 these 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 12. Additional Stewardship Responsibility Species in the Mexican Highlands.

Scientific Name	Common English Name	Season of Occurrence	RD (B/W)	Habitat
<i>Buteo albonotatus</i>	Zone-tailed Hawk	B	5	Riparian
<i>Falco peregrinus</i>	Peregrine Falcon	B	5	Cliff/Rock, Pinyon-Juniper, Desertscrub, Pine-Oak

Scientific Name	Common English Name	Season of Occurrence	RD (B/W)	Habitat
<i>Tyto alba</i>	Barn Owl	R	5	Desertscrub, Agriculture, Riparian
<i>Caprimulgus vociferus</i>	Whip-poor-will	R	5	Pine-Oak, Riparian
<i>Hylocharis leucotis</i>	White-eared Hummingbird	R	5	Riparian, Mixed Conifer
<i>Melanerpes uropygialis</i>	Gila Woodpecker	B	5	Desertscrub
<i>Contopus pertinax</i>	Greater Pewee	R	5	Pine-Oak, Mixed Conifer, Riparian
<i>Empidonax albigularis</i>	White-throated Flycatcher	B	5	Riparian, Tropical Deciduous Forest
<i>Empidonax fulvifrons</i>	Buff-breasted Flycatcher	R	5	Pine-Oak
<i>Myiarchus tuberculifer</i>	Dusky-capped Flycatcher	B	5	Riparian, Pine-Oak
<i>Vireo plumbeus</i>	Plumbeous Vireo	B	5	Pinyon-Juniper, Riparian, Pine-Oak, Mixed Conifer
<i>Aphelocoma ultramarine</i>	Mexican Jay	R	5	Pine-Oak
<i>Tachycineta thalassina</i>	Violet-green Swallow	B	5	Pinyon-Juniper, Riparian, Mixed Conifer
<i>Baeolophus wolweberi</i>	Bridled Titmouse	R	5	Riparian, Pine-Oak
<i>Baeolophus griseus</i>	Juniper Titmouse	R	5	Pinyon-Juniper
<i>Sitta pygmaea</i>	Pygmy Nuthatch	R	5	Mixed Conifer, Pine-Oak
<i>Campylorhynchus gularis</i>	Spotted Wren	R	5	Pine-Oak, Tropical Deciduous Forest
<i>Catherpes mexicanus</i>	Canyon Wren	R	5	Desertscrub, Cliff/Rock, Pinyon-Juniper, Riparian
<i>Sialia mexicana</i>	Western Bluebird	R	5	Pinyon-Juniper, Mixed Conifer, Pine-Oak
<i>Toxostoma crissale</i>	Crissal Thrasher	R	5	Riparian, Bosque, Chaparral
<i>Peucedramus taeniatus</i>	Olive Warbler	R	5	Mixed Conifer, Pine-Oak
<i>Parula superciliosa</i>	Crescent-chested Warbler	R	5	Pine-Oak, Mixed Conifer
<i>Piranga flava</i>	Hepatic Tanager	R	5	Riparian, Pine-Oak, Pinyon-Juniper, Mixed Conifer
<i>Pipilo maculatus</i>	Spotted Towhee	R	5	Pinyon-Juniper, Interior Chaparral, Pine-Oak
<i>Aimophila botterii</i>	Botteri's Sparrow	R	5	Grassland
<i>Atlapetes pileatus</i>	Rufous-capped Brush-Finch	R	5	Pine-Oak, Mixed Conifer
<i>Amphispiza bilineata</i>	Black-throated Sparrow	R	5	Desertscrub, Grassland
<i>Junco phaeonotus</i>	Yellow-eyed Junco	R	5	Pine-Oak, Mixed Conifer
<i>Icterus cucullatus</i>	Hooded Oriole	B	5	Riparian, Desertscrub, Agriculture
<i>Icterus parisorum</i>	Scott's Oriole	B	5	Desertscrub, Pinyon-Juniper, Grassland

The total number of Continental (72) and Regional (60) Concern Species (Table 13) is relatively similar to the number of species in concern categories in the Arid Borderlands Region (88 and 83 respectively). However if the species with coastal affinities (e.g., Red-billed Tropicbird) were removed from the Arid Borderlands lists, Mexican Highlands would have considerably more Concern Species than the Arid Borderlands. The Mexican Highlands is an area of high terrestrial diversity and endemism.

Table 13. Total and percentage of Concern Species in the SJV and Mexican Highlands Region.

<b>Concern Category</b>	<b>Total Number of Concern Species in the Category</b>	<b>Concern Species as a % of the regularly occurring SJV (667) species</b>	<b>Concern Species as a % of the regularly occurring Mexican Highlands (369) species</b>
Continental Concern Species (Table 10)	72	10.8%	19.5%
Continental Concern Species also with RD = 5	20	3.0%	5.4%
Regional Concern Species (Table 11)	60	9.0%	16.3%
Regional Concern Species also with RD =5	17	2.5%	4.6%
Stewardship-Only * (Table 12)	30	4.5%	8.1%
Total Stewardship species **	67	10.0%	18.6%

\* Species with RD =5 that are not also Continental or Region Concern Species.

\*\* A total of all Stewardship Species from Continental and Regional Concern, and Stewardship-Only lists.

## **Mexican Highlands Habitat Sections**

### **Habitat Discussions:**

The following sections describe the major habitats found in the Mexican Highlands 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 Mexican Highlands 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), and Corman and Wise-Gervais 2005 (Arizona).



In the tables below citations are abbreviated as follows:

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

Russell and Monson (1998) = (R&M)

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

Monterrubio-Rico and Enkerlin-Hoeflich (2004) = (M-R&E-H)

## **Habitat: Pine-Oak Forest**

**Location:** Sierra Madre Occidental and its outlying ranges in Mexico, and associated Sky Islands from the Mogollon Rim in Arizona south through Sinaloa.

**Dominant plant species:** Apache Pine (*Pinus engelmannii*), Chihuahua Pine (*P. leiophylla* var. *chihuahuana*), Ponderosa Pine (*P. ponderosa*), Emory Oak (*Quercus emoryi*), Arizona White Oak (*Q. arizonica*), Mexican Blue Oak (*Q. oblongifolia*), and many other tree species; bunchgrasses, bluestems, gramas, and various cacti and agaves.

**Physical/biological descriptions:** Foothills, bajadas, barrancas, and mountains; temperate climate, monsoon rain patterns, 330-1000 mm rain/year (extremes), generally >400 mm/year rainfall, with half falling between May and August; elevation approximately 1300-2200 m, usually adjacent and down-slope of Mixed Conifer Forest.

**Threats:** Large-scale timber extraction, erosion, unsustainable grazing, unsustainable water use, development, catastrophic fire, climate change, road construction, nonnative/invasive species, pollution, garbage, overharvest of oaks, OHVs, and capture of birds for the pet trade.

**Opportunities for cooperation on conservation actions:** Many birds use this habitat that have high visibility and recognition, such as Thick-billed Parrots, trogons, Tufted Jays, raptors, quail, Imperial Woodpeckers; work with private landowners/ ejidos, USFS, municipalities; coordination with different government agencies/levels, NGOs; habitat crosses variety of states and two countries, so there are many opportunities for collaboration between groups, agencies, residents, etc.

**Primary Conservation Needs/Actions:** Officially protect all remaining breeding habitat of the Thick-billed Parrot, enforce Mexican laws requiring retention of a minimum of five large snags (60-80 cm dbh) per hectare and continue the present prohibition of Douglas fir commercialization (Monterrubio and Enkerlin 2004); immediately search for Imperial Woodpeckers, Solitary Eagles, and Sierra Madre Sparrows and protect habitat if found; begin fire management, grazing management, forest management, erosion control, planned development (houses, roads, etc.); build conservation partnerships with landowners/stakeholders, and in Mexico, increase acreage in protected areas and strengthen status of existing protected areas with help of landowners; encourage sustainable hunting of Wild Turkeys and Crested Guans; control pet trade in wild birds.

### **Priority Species for Pine-Oak Forest**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Solitary Eagle	CC	IM	Large, undisturbed areas; extirpated?	Double/Determine Presence
<b>Imperial Woodpecker</b>	<b>CC</b>	<b>IM</b>	<b>Old growth, large snags, large undisturbed areas; extinct?</b>	<b>Double/Determine Presence</b>
Sierra Madre Sparrow	CC	IM	Bunch grass in open pine woods; extirpated? (H&W)	Double/Determine Presence
<b>Thick-billed Parrot</b>	<b>CC</b>	<b>IM</b>	<b>Large undisturbed areas, trees or snags (avg. 75cm dbh), pine cone crop (M-R&amp;E-H)</b>	<b>Double</b>
Lilac-crowned Parrot	CC	IM	Cavities for nests	Double
<b>Eared Quetzal</b>	<b>CC</b>	<b>IM</b>	<b>Cavities; requires pine-oak or pine-evergreen forest most often in undisturbed canyons</b>	<b>Increase by 50%</b>
<b>Tufted Jay</b>	<b>CC</b>	<b>IM</b>	<b>Relatively large, undisturbed areas</b>	<b>Increase by 50%</b>
<b>Wild “Gould’s” Turkey</b>	<b>RC</b>	<b>MA</b>	<b>Grassy, shrubby understory (ABBA)</b>	<b>Double</b>
Golden Eagle	RC	MA	Near cliffs/canyons, abundant prey (ABBA), protection from disturbance/shooting	Double
Crested Guan	CC	MA	Sustainable hunting	Increase by 50%
<b>Montezuma Quail</b>	<b>CC</b>	<b>MA</b>	<b>Grass and forb understory (ABBA)</b>	<b>Increase by 50%</b>
<b>Northern “Apache” Goshawk</b>	<b>RC</b>	<b>MA</b>	<b>Tall trees, open canopy (ABBA)</b>	<b>Increase by 50%</b>
<b>Band-tailed Pigeon</b>	<b>CC</b>	<b>MA</b>	<b>Dependent on pine nuts, acorns, berries (ABBA)</b>	<b>Increase by 50%</b>
Military Macaw	CC	MA	Large snags, tree cavities, rock crevices (H&W)	Increase by 50%
Flammulated Owl	CC	MA	Cavities in snags or live trees	Increase by 50%
<b>Whiskered Screech-Owl</b>	<b>RC</b>	<b>MA</b>	<b>Nests in tree cavities, medium to large trees, dense foliage (ABBA)</b>	<b>Increase by 50%</b>
Spotted Owl	CC	MA	Cavities in old growth pine-oak forests, narrow moist canyons	Increase by 50%
Eared Poorwill	CC	MA	Specifics unknown (?)	Increase by 50%
<b>Blue-throated Hummingbird</b>	<b>RC</b>	<b>MA</b>	<b>Narrow moist canyons with clearings and flowers (especially Lobelia) (R&amp;M)</b>	<b>Increase by 50%</b>

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Bumblebee Hummingbird	CC	MA	Openings with shrubs and flowers (H&W)	Increase by 50%
Elegant Trogon	CC	MA	Large trees with cavities often in riparian (H&W)	Increase by 50%
<b>Arizona Woodpecker</b>	<b>CC</b>	<b>MA</b>	<b>Dense stands of oak and stringers into grasslands (ABBA); open, undisturbed areas of oak, juniper, madrone</b>	<b>Increase by 50%</b>
<b>Gray-crowned Woodpecker</b>	<b>CC</b>	<b>MA</b>	<b>Cavity trees (R&amp;M), specifics unknown (?)</b>	<b>Increase by 50%</b>
Ivory-billed Woodcreeper	RC	MA	Specifics unknown (?)	Increase by 50%
Gray-collared Becard	CC	MA	Oak and pine-oak forests, specifics unknown (?)	Increase by 50%
<b>Sinaloa Martin</b>	<b>CC</b>	<b>MA</b>	<b>Tall snags, specifics unknown (?)</b>	<b>Increase by 50%</b>
Brown-backed Solitaire	CC	MA	Often on mesic slopes, fruiting trees (R&M)	Increase by 50%
<b>Russet Nightingale-Thrush</b>	<b>RC</b>	<b>MA</b>	<b>Specifics unknown (?)</b>	<b>Increase by 50%</b>
White-throated Robin	RC	MA	Gallery forests with undergrowth (R&M)	Increase by 50%
<b>Aztec Thrush</b>	<b>CC</b>	<b>MA</b>	<b>Specifics unknown (?)</b>	<b>Increase by 50%</b>
<b>Red-faced Warbler</b>	<b>CC</b>	<b>MA</b>	<b>Cool, moist forested canyons, ground nester (ABBA)</b>	<b>Increase by 50%</b>
Red Warbler	CC	MA	Ground nester, specifics unknown (?)	Increase by 50%
<b>Red-headed Tanager</b>	<b>CC</b>	<b>MA</b>	<b>Specifics unknown (?)</b>	<b>Increase by 50%</b>
Green-striped Brush-Finch	CC	MA	Ground dweller, specifics unknown (?)	Increase by 50%
Elf Owl	CC	MA	Cavities for nests (ABBA)	Maintain/Determine Status
Northern Saw-whet Owl	RC	MA	Woodpecker holes in conifers or aspen (ABBA)	Maintain/Determine Status
<b>White-naped Swift</b>	<b>CC</b>	<b>MA</b>	<b>Nests colonially in caves, behind waterfalls (largest swift in the world) (H&amp;W)</b>	<b>Maintain/Determine Status</b>
Lucifer Hummingbird	RC	MA	Dry, open habitats; agave flowers (R&M)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Lewis's Woodpecker</b>	CC	MA	Trees with cavities or constructs own, acorns (nonbreeding)	Maintain/Determine Status
<b>White-striped Woodcreeper</b>	CC	MA	Specifics unknown (?)	Maintain/Determine Status
Olive-sided Flycatcher	CC	MA	Snags, coniferous forests with openings (ABBA)	Maintain/Determine Status
<b>Gray Vireo</b>	CC	MA	<b>Open oak, juniper, and pinyon pine, scattered woody shrubs understory, slopes (ABBA)</b>	<b>Maintain/Determine Status</b>
Pinyon Jay	CC	MA	Pine nut crop, colonial nester, nomadic (ABBA)	Maintain/Determine Status
<b>Virginia's Warbler</b>	CC	MA	<b>Shrubby understory</b>	<b>Maintain/Determine Status</b>
Colima Warbler	CC	MA	Brushy understory, flower banks (H&W)	Maintain/Determine Status
<b>Grace's Warbler</b>	CC	MA	<b>Open areas with large pines</b>	<b>Maintain/Determine Status</b>
Fan-tailed Warbler	CC	MA	Near riparian, with rocky understory (H&W, R&M)	Maintain/Determine Status
Striped Sparrow	CC	MA	Openings, bunchgrass understory (H&W)	Maintain/Determine Status
Hooded Grosbeak	CC	MA	Specifics unknown (?)	Maintain/Determine Status
<b>Pine Flycatcher</b>	RC	PR	<b>Edge, clearings, semi-open areas with scrub and scattered trees (H&amp;W)</b>	<b>Double</b>
Cooper's Hawk	RC	PR	Riparian component nearby (ABBA)	Increase by 50%
Barred Owl	RC	PR	Specifics unknown (?)	Increase by 50%
Long-eared Owl	RC	PR	Near open areas with abundant prey; reuse nests of ravens and raptors (ABBA)	Increase by 50%
Sparkling-tailed Hummingbird	CC	PR	Edge, second growth (H&W)	Increase by 50%
<b>Mountain Trogon</b>	RC	PR	<b>Nests in tree cavities (H&amp;W)</b>	<b>Increase by 50%</b>
Tufted Flycatcher	RC	PR	Upper reaches of moist canyons (R&M)	Increase by 50%
Sulphur-bellied Flycatcher	RC	PR	Tree cavities (ABBA)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Painted Redstart</b>	<b>RC</b>	<b>PR</b>	<b>Moist, shaded canyons and slopes, tall, dense trees, closed canopies (ABBA)</b>	<b>Increase by 50%</b>
Golden-browed Warbler	CC	PR	Specifics unknown (?)	Increase by 50%
Flame-colored Tanager	RC	PR	Dense, multilayered canopy (ABBA)	Increase by 50%
Northern Pygmy-Owl	RC	PR	Taller trees with cavities (ABBA); lower elevations of Pine-Oak (R&M)	Maintain/Determine Status
Stephen's Whip-poor-will	RC	PR	Outcrops, wooded drainages (ABBA)	Maintain/Determine Status
Common Poorwill	RC	PR	Rocky hillsides (ABBA)	Maintain/Determine Status
Magnificent Hummingbird	RC	PR	Drainages, slopes, ridges (ABBA)	Maintain/Determine Status
Broad-tailed Hummingbird	RC	PR	Patches of flowers	Maintain/Determine Status
<b>Cordilleran Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Moist, shady canyons, steep drainages, edge (ABBA)</b>	<b>Maintain/Determine Status</b>
Warbling Vireo	RC	PR	Often with aspen (ABBA)	Maintain/Determine Status
<b>Mexican Chickadee</b>	<b>RC</b>	<b>PR</b>	<b>Tree cavities</b>	<b>Maintain/Determine Status</b>
Gray Silky-Flycatcher	CC	PR	Fruit/insect eater (H&W)	Maintain/Determine Status
<b>Rufous-crowned Sparrow</b>	<b>RC</b>	<b>PR</b>	<b>Open oak woodlands with grass understory (ABBA)</b>	<b>Maintain/Determine Status</b>
Elegant Euphonia	CC	PR	Mistletoe clumps (H&W); 1250-1660m (R&M)	Maintain/Determine Status

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

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

## **Habitat: Mixed Conifer Forest**

**Location:** High elevation (2000-3500 m) throughout Region.

**Dominant plant species:** Ponderosa Pine (*Pinus ponderosa*), Douglas Fir (*Pseudotsuga menziesii*), White Fir (*Abies concolor*), Quaking Aspen (*Populus tremuloides*), Apache Pine (*Pinus engelmannii*), Chihuahuan Pine (*Pinus leiophylla* var. *chihuahuana*), Engelmann Spruce (*Picea engelmannii*).

**Physical/biological descriptions:** Some stands are extensive, others are in isolated mountains and canyons; mean annual precipitation 460-769 mm; freezing temperatures from Sept-May.

**Threats:** Unsustainable timber harvest, risk of catastrophic fire, drought/climate change, bark beetles/insect plagues, road construction, pollution, and habitat destruction from mining.

**Opportunities for cooperation on conservation actions:** Work with the Comisión Nacional Forestal (CONAFOR), Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT), U.S. Forest Service, private landowners, indigenous communities.

**Primary Conservation Needs/Actions:** Forest management, fire management, erosion control, planned development (especially road construction); increase protected areas.

**Priority Species for Mixed Conifer Forest**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Solitary Eagle	CC	IM	Large, undisturbed areas; extirpated (?)	Double/Determine Presence
Imperial Woodpecker	CC	IM	Old growth, large trees for cavity construction, undisturbed areas	Double/Determine Presence
Sierra Madre Sparrow	CC	IM	Bunch grass openings (H&W)	Double/Determine Presence
Thick-billed Parrot	CC	IM	Large snags, trees 75cm dbh, pine seed crops, undisturbed areas (M-R and E-H 2004)	Double
Eared Quetzal	CC	IM	Undisturbed pine forest (R&M); nests in tree cavities (H&W)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Tufted Jay</b>	CC	IM	Relatively large, undisturbed areas	Increase by 50%
Golden Eagle	RC	MA	Cliff/canyons, abundant prey, undisturbed (ABBA)	Double
Crested Guan	CC	MA	Sustainable hunting	Increase by 50%
<b>Northern “Apache” Goshawk</b>	RC	MA	<b>Old growth ponderosa pine; tall trees, open canopy (ABBA)</b>	<b>Increase by 50%</b>
<b>Band-tailed Pigeon</b>	CC	MA	<b>Abundant pine nuts, acorns, berries (ABBA)</b>	<b>Increase by 50%</b>
Spotted Owl	CC	MA	Old growth, nests in tree cavities/ledges/debris piles (ABBA)	Increase by 50%
Bumblebee Hummingbird	CC	MA	Openings with shrubs and flowers (H&W)	Increase by 50%
<b>Mountain Trogon</b>	RC	MA	<b>Tree cavities (H&amp;W)</b>	<b>Increase by 50%</b>
<b>Sinaloa Martin</b>	CC	MA	<b>Tall snags, specifics unknown (?)</b>	<b>Increase by 50%</b>
White-throated Robin	RC	MA	Gallery forests with undergrowth (R&M)	Increase by 50%
<b>Aztec Thrush</b>	CC	MA	<b>Feeds in bushes, trees, ground (H&amp;W); specifics unknown (?)</b>	<b>Increase by 50%</b>
<b>Red-faced Warbler</b>	CC	MA	<b>Deep, heavily forested canyons, understory of trees and shrubs (ABBA)</b>	<b>Increase by 50%</b>
Red Warbler	CC	MA	Ground nester (H&W), specifics unknown (?)	Increase by 50%
Golden-browed Warbler	CC	MA	Specifics unknown (?)	Increase by 50%
<b>Red-headed Tanager</b>	CC	MA	<b>Forest and edge, low fruiting shrubs (H&amp;W)</b>	<b>Increase by 50%</b>
Green-striped Brush-Finch	CC	MA	Ground-dweller, specifics unknown (?)	Increase by 50%
Blue Grouse	CC	MA	Low shrubs, forbs, grasses (ABBA)	Maintain/Determine Status
Northern Saw-whet Owl	RC	MA	Woodpecker holes in conifers or aspens (ABBA)	Maintain/Determine Status
<b>Virginia’s Warbler</b>	CC	MA	<b>Shrubby deciduous component (ABBA)</b>	<b>Maintain/Determine Status</b>



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Colima Warbler	CC	MA	Brushy understory, flower banks (H&W)	Maintain/Determine Status
<b>White-striped Woodcreeper</b>	CC	MA	<b>Nests in tree cavities and crevices (H&amp;W)</b>	<b>Maintain</b>
Flammulated Owl	CC	PR	Old growth, natural or woodpecker-made cavities (ABBA)	Increase by 50%
Barred Owl	RC	PR	Specifics unknown (?)	Increase by 50%
“Stephen’s” Whip-poor-will	RC	PR	Rocky outcrops, wooded drainages (ABBA)	Maintain/Determine Status
Northern Pygmy-Owl	RC	PR	Cavities for nesting	Maintain/Determine Status
Magnificent Hummingbird	RC	PR	Uneven age ponderosa pine (ABBA) (ABBA)	Maintain/Determine Status
Broad-tailed Hummingbird	RC	PR	Patches of flowers (ABBA)	Maintain/Determine Status
<b>Cordilleran Flycatcher</b>	RC	PR	<b>Moist, shaded canyons, steep drainages, ledge nesters (ABBA)</b>	<b>Maintain/Determine Status</b>
Olive-sided Flycatcher	CC	PR	Forest, , or openings with prominent trees and snags (ABBA)	Maintain/Determine Status
Warbling Vireo	RC	PR	Often in aspen (ABBA)	Maintain/Determine Status
<b>Mexican Chickadee</b>	RC	PR	<b>Cavities in conifers (ABBA)</b>	<b>Maintain/Determine Status</b>
<b>Grace’s Warbler</b>	CC	PR	<b>Park like stands of mature trees (ABBA)</b>	<b>Maintain/Determine Status</b>
Hooded Grosbeak	CC	PR	Specifics unknown (?)	Maintain/Determine Status

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

## **Habitat: Tropical Deciduous Forest**

**Location:** Western slopes and canyons of Sierra Madre Occidental, central Sonora and continuing south through all of Sinaloa.

**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, monsoon rain patterns; canopy up to 20 m high; includes thornscrub of central Sonora; grades into Pine-Oak Forest at higher elevations and desertscrub at lower elevations.

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

**Opportunities for cooperation on conservation actions:** Work with private landowners.

**Primary Conservation Needs/Actions:** Timber harvest management, grazing management, erosion control, planned development, fire management, invasive/nonnative species control (mainly grasses).

**Priority Species for Tropical Deciduous Forest**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action*</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Golden Eagle	RC	IM	Near cliffs, abundant prey, undisturbed (ABBA)	Double
Lilac-crowned Parrot	CC	IM	Cavities (H&W)	Double
Military Macaw	CC	IM	Foothills, cavities (H&W)	Increase by 50%
Sparkling-tailed Hummingbird	CC	MA	Edge, second growth (H&W)	Increase by 50%
Elegant Trogon	CC	MA	Cavities in trees such as mesquite (R&M)	Increase by 50%
Ivory-billed Woodcreeper	RC	MA	Specifics unknown (?)	Increase by 50%
<b>Bell's Vireo</b>	<b>CC</b>	<b>MA</b>	<b>Semi-open, brushy areas (H&amp;W)</b>	<b>Increase by 50%</b>
White-throated Robin	RC	MA	Undergrowth (R&M)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action*</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Five-striped Sparrow</b>	CC	MA	<b>Rocky, well-vegetated hillsides (R&amp;M)</b>	<b>Increase by 50%</b>
Gray Hawk	RC	MA	Large trees, near water (R&M)	Maintain/Determine Status
Harris's Hawk	RC	MA	Large columnar cactus or desert trees (R&M)	Maintain/Determine Status
Elf Owl	CC	MA	Cavities in trees or columnar cactus (ABBA)	Maintain/Determine Status
Violet-crowned Hummingbird	RC	MA	Near riparian vegetation, nectar sources (R&M)	Maintain/Determine Status
Thick-billed Kingbird	CC	MA	Large trees near water (R&M)	Maintain/Determine Status
Fan-tailed Warbler	CC	MA	Mesic areas (R&M); often rocky (H&W)	Maintain/Determine Status
Rufous-winged Sparrow	CC	MA	Open, grassy areas (R&M)	Maintain/Determine Status
Yellow Grosbeak	CC	MA	Large trees, often near water, fruit (R&M)	Maintain/Determine Status
Cassin's Sparrow	RC	MA	Mesquite savannas (R&M)	Maintain
<b>White-naped Swift</b>	CC	PR	<b>Aerial, nests in foothills/highlands (H&amp;W)</b>	<b>Increase by 50%</b>
Gila Woodpecker	RC	PR	Columnar cactus for nests (R&M)	Increase by 50%
Northern Beardless-Tyrannulet	RC	PR	Tent caterpillar webs or mistletoe for nesting (R&M)	Increase by 50%
Bright-rumped Attila	RC	PR	Scrubby woodlands (H&W)	Increase by 50%
Sulphur-bellied Flycatcher	RC	PR	Natural or woodpecker-made cavities in large trees (R&M)	Increase by 50%
<b>Cassin's Kingbird</b>	RC	PR	<b>Tall, clumped trees (ABBA)</b>	<b>Increase by 50%</b>
Phainopepla	RC	PR	Mistletoe berries (R&M)	Increase by 50%
Canyon Towhee	RC	PR	Abundant seeds (R&M)	Increase by 50%
Varied Bunting	CC	PR	Edges, thickets (H&W)	Increase by 50%
Common Ground-Dove	RC	PR	Brushy thornscrub (R&M)	Maintain/Determine Status
Western Screech-Owl	RC	PR	Clumps of trees, along drainages, need cavities (R&M)	Maintain/Determine Status
Loggerhead Shrike	RC	PR	Thorny trees and shrubs (ABBA)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action*</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Pyrrhuloxia	RC	PR	Mesquite scrub (R&M)	Maintain/Determine Status

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

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### **Habitat: Mesquite Bosque Woodland**

**Location:** Upland habitat adjacent to riparian wetlands throughout the Region, usually on river benches or terraces.

**Dominant plant species:** Mesquites (*Prosopis* spp.), acacias (*Acacia* spp.), sacaton (*Sporobolus* spp.), and hackberries (*Celtis* spp.).

**Physical/biological descriptions:** Gradient from wetter conditions to drier, upland conditions; on floodplains.

**Threats:** Groundwater pumping, erosion, urbanization, nonnative/invasive species, conversion to agriculture, catastrophic fire, unsustainable grazing, unsustainable firewood harvest and charcoal production.

**Opportunities for cooperation on conservation actions:** Important component for many riparian bird species (Yellow-billed Cuckoo).

**Primary Conservation Needs/Actions:** Water conservation, erosion control, invasive/nonnative species control, planned development, forest management (charcoal production), protect old growth mesquite, fire management, grazing management, and increase protected areas.

#### **Priority Species for Mesquite Bosque Woodland**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Yellow-billed "Western" Cuckoo	RC	MA	Densely wooded, multistoried structured native vegetation (ABBA)	Increase by 50%
Gila Woodpecker	RC	MA	Large trees or saguaros to make cavities (ABBA)	Increase by 50%
Northern Beardless-Tyrannulet	RC	MA	Tent caterpillar webs or mistletoe for nesting (ABBA)	Increase by 50%
Bell's Vireo	CC	MA	Dense shrubby understory (ABBA)	Increase by 50%
Lucy's Warbler	CC	MA	Trees with cavities or exfoliating bark (ABBA)	Increase by 50%
Varied Bunting	CC	MA	Thickets and edges, low thorny shrubs (ABBA)	Increase by 50%
Gray Hawk	RC	MA	Extensive, tall mesquite (ABBA)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Elf Owl	CC	MA	Nesting cavities, large trees, densely wooded (ABBA)	Maintain/Determine Status
Lucifer Hummingbird	RC	MA	Nectar sources	Maintain/Determine Status
Western Screech-Owl	RC	PR	Mesquite, cavities (ABBA)	Maintain/Determine Status
Phainopepla	RC	PR	Mistletoe berries (ABBA)	Increase by 50%

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## **Habitat: Pinyon-Juniper Woodland**

**Location:** Along foothills and mountains primarily in central and southeastern Arizona and northern Sonora; elevations range between 1,500 m and 2,300 m.

**Dominant plant species:** Equal dominance of juniper (*Juniperus* spp.) and pinyon pine (*Pinus edulis*), oaks (*Quercus* spp.) also grade into the habitat; 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:** Cold winter temperatures; rocky, with thin soils; contact with grassland or desert scrub below, and pine or pine-oak at the higher elevations, often parkland or savanna-like.

**Threats:** Unsustainable grazing, catastrophic fire, development, overharvest of trees, firewood collection, mining, recreation OHV disturbance.

**Opportunities for cooperation on conservation actions:** Work with private landowners, U.S. Forest Service, Bureau of Land Management, municipalities, and CONANP.

**Primary Conservation Needs/Actions:** Grazing management, fire management, recreation management, increase protected areas and awareness of importance of this habitat.

### **Priority Species for Pinyon-Juniper Woodland**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Pinyon Jay	CC	IM	Pine nuts, colonial nester, nomadic (ABBA )	Maintain/Determine Status
Golden Eagle	RC	MA	Tall cliffs/canyons for nesting, abundant prey	Double
<b>Lewis’s Woodpecker</b>	CC	<b>MA</b>	<b>Brushy understory, open foraging areas (ABBA)</b>	<b>Maintain/Determine Status</b>
Gray Vireo	CC	MA	Open juniper or P-J, scattered woody shrubs understory, slopes (ABBA)	Maintain/Determine Status
<b>Virginia’s Warbler</b>	CC	<b>MA</b>	<b>Shrubby deciduous slopes (ABBA)</b>	<b>Maintain/Determine Status</b>
<b>Grace’s Warbler</b>	CC	<b>MA</b>	<b>Open P-J with ponderosa pine (ABBA)</b>	<b>Maintain/Determine Status</b>

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Cooper's Hawk	RC	PR	Riparian component nearby (ABBA)	Increase by 50%
Black-chinned Sparrow	CC	PR	Rocky slopes, shrubby structure, often with oak component (ABBA)	Increase by 50%
Western Screech-Owl	RC	PR	Abandoned woodpecker holes or natural cavities (ABBA)	Maintain/Determine Status
Long-eared Owl	RC	PR	Near open areas with abundant prey; reuse nests of ravens and raptors (ABBA)	Increase by 50%
Common Poorwill	RC	PR	Rocky hillsides (ABBA)	Maintain/Determine Status
Broad-tailed Hummingbird	RC	PR	Tall, dense P-J; often with oak or other pine, flower patches (ABBA)	Maintain/Determine Status
Cassin's Kingbird	RC	PR	Brushy cover, with vantage point for foraging (ABBA)	Increase by 50%

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

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



## **Habitat: Interior Chaparral Shrubland**

**Location:** Patchily distributed from south of the Mogollon Rim through the Pinaleno Mountains, west to the Hualapai Mountains.

**Dominant plant species:** Manzanita (*Arctostaphylos* spp.), ceanothus (*Ceanothus* spp.), sumacs (*Rhus* spp.), mountain-mahogany (*Cerocarpus* spp.), and silktassels (*Garrya* spp.).

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

**Threats:** Invasion of nonnative plants, altered fire frequencies, unsustainable grazing, soil erosion on steeper slopes.

**Opportunities for cooperation on conservation actions:** Urban/wildlands interface programs of agencies (fire management), planning/zoning to keep habitat from being converted.

**Primary Conservation Needs/Actions:** Protection from sprawling residential development, road construction, reduce off-road motorized vehicle traffic, grazing management; protect riparian zones within drainages to preserve ecotones; fire management; nonnative species removal/management.

### **Priority Species for Interior Chaparral Shrubland**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Gray Vireo	CC	MA	Scattered woody shrubs in understory, slopes (ABBA)	Maintain/Determine Status
Black-chinned Sparrow	CC	PR	Rocky slopes, shrubby structure, often with oak component (ABBA)	Increase by 50%
<b>Rufous-crowned Sparrow</b>	<b>RC</b>	<b>PR</b>	<b>Grassy areas with rocky slopes/outcrops (ABBA)</b>	<b>Maintain/Determine Status</b>

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

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

## **Habitat: Desertscrub Shrubland**

**Location:** Southeastern Arizona and northeastern Sonora; most of the area is Chihuahuan desertscrub but also includes a small portion of Sonoran Desertscrub in the western part of the area; in the lowest and driest elevations of the Mexican Highlands and along intermittent water courses.

**Dominant plant species:** Creosote (*Larrea tridentate*), Tarbush (*Flourensia cernua*), Whitethorn Acacia (*Acacia neovernicosa*), Ocotillo (*Fouquieria splendens*), Allthorn (*Koeberlinia spinosa*), Mesquite (*Prosopis* spp.), Netleaf hackberry (*Celtis reticulata*), Palo Verde (*Cercidium* spp.), Ironwood (*Olneya tesota*), Cholla and Opuntia (*Opuntia* spp.), Saltbush (*Atriplex* spp.) and large succulents (e.g., *Ferocactus pringlei*, *Echinocactus platyacanthus*).

**Physical/biological descriptions:** 400-2000 m elevation; 80% of desertscrub resides on limestone and gravel planes; semi-arid climate, monsoon rain patterns, wide temperature variation, freezing temperatures >100 nights/year; 200->300 m rain/year, most precipitation falls during summer thunderstorms; desert washes have denser vegetation than surrounding areas.

**Threats:** Sprawling development, unsustainable grazing, conversion due to agriculture, unsustainable timber extraction, sand and gravel extraction, desertification (climate change), invasive/nonnative species, catastrophic fire, disturbance and habitat destruction due to off-road vehicles.

**Opportunities for cooperation on conservation actions:** Partnerships with private landowners, ejidos, New Mexico State University, University of Chihuahua, Chihuahuan Desert Research Institute (CDRI)-Sul Ross University (Alpine, TX); desert washes gaining attention as important migratory stopover sites; CONAFOR.

**Primary Conservation Needs/Actions:** Forest and grazing management, fencing, fire management, and nonnative/invasive species control, water conservation, erosion control, recreation management.

**Priority Species for Desertscrub Habitat**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Brewer's Sparrow	CC	MA	Open grassy areas with shrub thickets (winter) (R&M)	Double

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Varied Bunting	CC	MA	Dense, low shrub thickets, dry washes, mesquite and hackberry (ABBA)	Increase by 50%
Five-striped Sparrow	CC	MA	Rocky hillsides/slopes, scattered thorny trees/shrubs (ABBA)	Increase by 50%
Scaled Quail	CC	MA	Open desert, yucca, cactus, creosote (ABBA)	Maintain/Determine Status
Elf Owl	CC	MA	Saguaros, large thorny trees for nest cavities (ABBA)	Maintain/Determine Status
Lucifer Hummingbird	RC	MA	Flowering plants such as agave, yucca, ocotillo (ABBA)	Maintain/Determine Status
Costa's Hummingbird	CC	MA	Nectar sources	Maintain/Determine Status
Loggerhead Shrike	RC	PR	Thorny trees and shrubs (ABBA)	Maintain/Determine Status
Bendire's Thrasher	CC	MA	Scattered mesquite, acacia, yucca (ABBA)	Maintain/Determine Status
Rufous-winged Sparrow	CC	MA	Grass component (ABBA) Sonoran only	Maintain/Determine Status
Swainson's Hawk	CC	MA	Scattered thorny trees, mammalian prey (ABBA)	Maintain
Long-eared Owl	RC	PR	Abundant rodent population (ABBA)	Increase by 50%
Gila Woodpecker	RC	PR	Columnar cactus and large trees for cavities (ABBA)	Increase by 50%
Phainopepla	RC	PR	Mistletoe, scattered mesquite, palo verde, ironwood (ABBA)	Increase by 50%
Canyon Towhee	RC	PR	Scattered shrubs, ground cover, wooded dry washes (ABBA)	Increase by 50%
Harris's Hawk	RC	PR	Large saguaros, desert trees for nest placement (R&M)	Maintain/Determine Status
Common Ground-Dove	RC	PR	Generalist	Maintain/Determine Status
Western Screech-Owl	RC	PR	Clumps of trees, ironwood, mesquite, palo verde, saguaros (ABBA)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Burrowing Owl	RC	PR	Open, low grass with burrows (ABBA)	Maintain/Determine Status
Common Poorwill	RC	PR	Numerous saguaros, desert trees (ABBA)	Maintain/Determine Status
Abert's Towhee	CC	PR	Dense understory, dry wash (ABBA)	Maintain/Determine Status
<b>Rufous-crowned Sparrow</b>	<b>RC</b>	<b>PR</b>	<b>Grassy areas with rocky slopes/outcrops (ABBA)</b>	<b>Maintain/Determine Status</b>
Pyrrhuloxia	RC	PR	Scattered mesquite (R&M)	Maintain/Determine Status
Cassin's Sparrow	RC	PR	Patches of grass, ground cover (ABBA)	Maintain

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

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

## **Habitat: Desert Grasslands**

**Location:** Dominates valleys, such as the Santa Cruz and San Pedro river basins in Sonora and Arizona.

**Dominant plant species:** Blue Grama (*Bouteloua gracilis*), three-awns (*Aristida* spp.), sacaton (*Sporobolus* spp.), Lehman's lovegrass (*Eragrostis lehmanniana*), Soaptree Yucca (*Yucca elata*), and various other yuccas (*Yucca* spp.).

**Physical/biological descriptions:** Temperate, dry climate, monsoon rain patterns; approximately 1300-1500 m elevation.

**Threats:** Unsustainable grazing, erosion, woody shrub encroachment, invasive/nonnative species (e.g., buffelgrass), fragmentation, increased frequency and intensity of fire, conversion to agriculture or suburban development.

**Opportunities for cooperation on conservation actions:** Importance as wintering grounds for migratory birds primarily from the Great Plains (Botteri's and Cassin's Sparrows, Lark Bunting, Burrowing Owl, Northern Harrier); recognized as one of the most threatened habitats by the Commission on Environmental Cooperation.

**Primary Conservation Needs/Actions:** Grazing management, erosion control, nonnative/invasive species control, planned development, fire management, woody shrub control.

**Priority Species for Desert Grasslands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Aplomado Falcon	RC	IM	Scattered mesquite, soaptree yucca, open spaces; extirpated (ABBA)	Protect habitat to allow for possible natural recolonization
Sierra Madre Sparrow	CC	IM	Bunchgrass meadows within pine (H&W)	Double/Determine Status
Northern "Masked" Bobwhite	RC	IM	Native grass with scattered mesquite, acacia (ABBA)	Double
Sprague's Pipit	CC	IM	Open, short grass	Double
Grasshopper "Arizona" Sparrow	RC	IM	Mid-grass (12") some woody shrubs and trees (ABBA)	Double

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Baird's Sparrow	CC	IM	Ungrazed or slightly grazed areas, short grass without trees and shrubs (Latta 1999)	Double
Golden Eagle	RC	MA	Near cliffs/canyons, abundant prey, free of disturbance (ABBA)	Double
Short-eared Owl	CC	MA	Open areas with abundant prey	Double
Brewer's Sparrow	CC	MA	Small shrub thickets (R&M)	Double
<b>Montezuma Quail</b>	<b>CC</b>	<b>MA</b>	<b>Shrub cover, water sources</b>	<b>Increase by 50%</b>
<b>Five-striped Sparrow</b>	<b>CC</b>	<b>MA</b>	<b>Rocky hillsides, scrub, scattered grass and forbs, water nearby (ABBA)</b>	<b>Increase by 50%</b>
Scaled Quail	CC	MA	Open mixed grass (ABBA)	Maintain/Determine Status
Northern Harrier	RC	MA	Relatively undisturbed open areas (ABBA)	Maintain/Determine Status
Ferruginous Hawk	RC	MA	Low shrubs or jumpers (ABBA)	Maintain/Determine Status
Burrowing Owl	RC	MA	Open, low grasslands, with burrows (ABBA)	Maintain/Determine Status
Mountain Plover	CC	MA	Short grass	Maintain/Determine Status
Long-billed Curlew	CC	MA	Short grass (R&M)	Maintain/Determine Status
Bendire's Thrasher	CC	MA	Scattered mesquite, acacia, yucca (ABBA)	Maintain/Determine Status
Rufous-winged Sparrow	CC	MA	Scattered shrubs, trees, with grass cover (ABBA)	Maintain/Determine Status
Botteri's Sparrow	RC	MA	Sacaton or other native bunch grasses (ABBA)	Maintain/Determine Status
Striped Sparrow	CC	MA	Bunchgrass, in meadows, and within open pine woodlands (H&W)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Swainson's Hawk	CC	MA	Scattered yucca, mesquite, juniper; mammalian prey (ABBA)	Maintain
Cassin's Sparrow	RC	MA	Tall, native grass, low shrubs (ABBA)	Maintain
Common Poorwill	RC	PR	Patchy grass, scattered shrubs (ABBA)	Maintain/Determine Status
Loggerhead Shrike	RC	PR	Scattered thorny trees and shrubs (ABBA)	Maintain/Determine Status
Pyrrhuloxia	RC	PR	Mesquite thickets (ABBA)	Maintain/Determine Status
Canyon Towhee	RC	PR	Scattered, dense shrubs (ABBA)	Increase by 50%
<b>Eastern "Lillian's" Meadowlark</b>	<b>RC</b>	<b>PR</b>	<b>Scattered low shrubs, also subalpine grass (ABBA)</b>	<b>Increase by 50%</b>
<b>Rufous-crowned Sparrow</b>	<b>RC</b>	<b>PR</b>	<b>Grassy areas with rocky slopes/outcrops (ABBA)</b>	<b>Maintain/Determine Status</b>
Western Meadowlark	RC	PR	Generalist	Maintain/Determine Status

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

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

## **Habitat: Riparian Wetlands**

**Location:** Along water courses throughout the Region; includes low elevation riparian along desert drainages that may be dry during portions of the year and high elevation riparian in mountain foothills and canyons.

**Dominant plant species:** Low elevation riparian: Fremont cottonwood (*Populus fremontii*), Goodding Willow (*Salix gooddingii*), various mesquite species (*Prosopis* spp.), and Netleaf Hackberry (*Celtis reticulata*); high elevation riparian: Arizona Sycamore (*Plantanus wrightii*), Fremont Cottonwood, willows (*Salix* spp.), Velvet Ash (*Fraxinus pennsylvanica*), Arizona Walnut (*Juglans major*), Arizona Cypress (*Cupressus arizonica*), Netleaf Hackberry, and Bigtooth Maple (*Acer grandidentatum*).

**Physical/biological descriptions:** Influenced by monsoon rain patterns; includes high elevation riparian imbedded in forested landscapes and low elevation riparian in desertscrub habitat.

**Threats:** Groundwater pumping, erosion, urbanization, nonnative/invasive species, water pollution (mining), disturbance and habitat destruction due to OHVs, unsustainable grazing.

**Opportunities for cooperation on conservation actions:** Known as a major migratory bird corridor, improved water quantity/quality.

**Primary Conservation Needs/Actions:** Water conservation, watershed management, grazing management, fencing, erosion control, nonnative/invasive species control, recreation management.

**Priority Species for Riparian Wetlands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Willow “Southwestern” Flycatcher</b>	RC	IM	Dense understory (esp. willow, tamarisk, seep willow) (ABBA)	Double
<b>Bald Eagle (Southwest popn.)</b>	RC	IM	Undisturbed areas with large trees, cliffs (ABBA)	Increase by 50%
<b>Yellow-billed “Western” Cuckoo</b>	RC	IM	Densely wooded, multistoried structured, native vegetation (ABBA)	Increase by 50%
<b>Spotted Owl</b>	CC	IM	Narrow, shady canyons, old-growth, uneven aged, dense canopy, rocky ledges, tree cavities (ABBA)	Increase by 50%
<b>Gray-crowned Woodpecker</b>	CC	MA	Mesic canyons, specifics unknown (?)	Increase by 50%



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Aztec Thrush</b>	CC	IM	Mesic slopes (R&M); specifics unknown (?)	Increase by 50%
<b>Wild “Gould’s” Turkey</b>	RC	MA	Grassy or brushy understory, sustainable hunting (H&W)	Double
<b>Montezuma Quail</b>	CC	MA	At high elevations; canyons and drainages; cottonwood/willow, sycamore (ABBA)	Increase by 50%
Cooper’s Hawk	RC	MA	Large deciduous trees (ABBA)	Increase by 50%
<b>Northern “Apache” Goshawk</b>	RC	MA	Tall trees, open canopy (ABBA)	Increase by 50%
<b>Whiskered Screech-Owl</b>	RC	MA	Tree cavities; medium-large trees, dense foliage (ABBA)	Increase by 50%
Long-eared Owl	RC	MA	Cottonwood/willow, sycamore, high rodent abundance (ABBA)	Increase by 50%
<b>Blue-throated Hummingbird</b>	RC	MA	Sycamore dominated drainages, with flower patches, especially lobelia (ABBA, R&M)	Increase by 50%
Elegant Trogon	CC	MA	Sycamore, cypress; tree cavities (R&M)	Increase by 50%
<b>Arizona Woodpecker</b>	CC	MA	Excavates new cavities in dead wood (ABBA)	Increase by 50%
Northern Beardless-Tyrannulet	RC	MA	Cottonwood/willow; tent caterpillar webs/ mistletoe for nests (ABBA)	Increase by 50%
Tufted Flycatcher	RC	MA	Well-wooded drainages (winter) (R&M)	Increase by 50%
<b>Bell’s Vireo</b>	CC	MA	Dense, shrubby understory(ABBA)	Increase by 50%
White-throated Robin	RC	MA	Gallery forests with undergrowth (R&M)	Increase by 50%
Lucy’s Warbler	CC	MA	Mesquite or other trees with cavities or exfoliating bark (ABBA)	Increase by 50%
Yellow “Sonoran” Warbler	RC	MA	Cottonwood/willow with dense understory (ABBA)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Red-faced Warbler	CC	MA	Cool, moist forested canyons, ground nester (ABBA)	Increase by 50%
Gray Hawk	RC	MA	Cottonwood/willow, sycamore; taller mesquite, hackberry (ABBA)	Maintain/Determine Status
Elf Owl	CC	MA	Densely wooded, cavities for nests (ABBA)	Maintain/Determine Status
Northern Pygmy-Owl	RC	MA	Wooded drainages and canyons, natural or woodpecker cavities (ABBA)	Maintain/Determine Status
Black Swift	CC	MA	Aerial, nests behind waterfalls (H&W)	Maintain/Determine Status
Violet-crowned Hummingbird	RC	MA	Sycamore, near flowers (ABBA)	Maintain/Determine Status
Magnificent Hummingbird	RC	MA	Often in cypress and sycamore (ABBA)	Maintain/Determine Status
Lucifer Hummingbird	RC	MA	Cottonwoods, mesquite, agave flowers (ABBA, R&M)	Maintain/Determine Status
Thick-billed Kingbird	CC	MA	Gallery woodlands, often mesquite (ABBA)	Maintain/Determine Status
American Dipper	RC	MA	Swift, perennial streams with rock crevices for nesting (ABBA)	Maintain/Determine Status
Fan-tailed Warbler	CC	MA	Rocky understory (H&W)	Maintain/Determine Status
Yellow Grosbeak	CC	MA	Large, dense trees (R&M), fruiting trees (H&W)	Maintain/Determine Status
Gila Woodpecker	RC	PR	Cottonwood, willow, mesquite (ABBA)	Increase by 50%
Bright-rumped Attila	RC	PR	Narrow canyons, permanent streams (R&M)	Increase by 50%
Sulphur-bellied Flycatcher	RC	PR	Sycamores, cavities natural or made by flickers (ABBA)	Increase by 50%
Cassin's Kingbird	RC	PR	Tall, clumped trees (ABBA)	Increase by 50%
<b>Brown-backed Solitaire</b>	<b>CC</b>	<b>PR</b>	<b>Mesic slopes, fruit (R&amp;M)</b>	<b>Increase by 50%</b>

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Phainopepla	RC	PR	Mistletoe, cottonwood/ willow, sycamore (ABBA)	Increase by 50%
<b>Painted Redstart</b>	<b>RC</b>	<b>PR</b>	<b>Diversity of deciduous and conifers, ground nester (ABBA)</b>	<b>Increase by 50%</b>
Flame-colored Tanager	RC	PR	Drainages with sycamore, walnut, maple (ABBA)	Increase by 50%
Varied Bunting	CC	PR	Dense, low shrub thickets (ABBA)	Increase by 50%
Common Ground-Dove	RC	PR	Cottonwood/willow, dense undergrowth or edge (ABBA)	Maintain/Determine Status
Western Screech-Owl	RC	PR	Mesquite, cavities (ABBA)	Maintain/Determine Status
“Stephen’s” Whip-poor- will	RC	PR	Outcrops, moist mountain drainages (ABBA)	Maintain/Determine Status
Costa’s Hummingbird	CC	PR	Flower source (ABBA)	Maintain/Determine Status
Broad-tailed Hummingbird	RC	PR	Patches of flowers (ABBA)	Maintain/Determine Status
<b>Cordilleran Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Moist, shady canyons and drainages, ledge nester (ABBA)</b>	<b>Maintain/Determine Status</b>
Warbling Vireo	RC	PR	Sycamore, oak drainages (ABBA)	Maintain/Determine Status
<b>Virginia’s Warbler</b>	<b>CC</b>	<b>PR</b>	<b>Shrubby deciduous understory, canyons and drainages (ABBA)</b>	<b>Maintain/Determine Status</b>
Summer Tanager	RC	PR	Tall, continuous, native trees (cottonwood, willow) (ABBA)	Maintain/Determine Status
Abert’s Towhee	CC	PR	Dense understory (ABBA)	Maintain/Determine Status

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

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

## **Habitat: Freshwater Wetlands**

**Location:** Widely scattered throughout Arizona and Sonora; e.g., various reservoirs, Rancho Los Fresnos, Villa Verde/Ejido Ignacio Zaragoza (Sonora), St. David (Arizona).

**Dominant plant species:** Mixture of aquatic emergent vegetation, dominated by cattail (*Typha domingensis*) and rushes (*Scirpus* spp.), may include surrounding cottonwoods (*Populus* spp.) and willows (*Salix* spp.).

**Physical/biological descriptions:** Freshwater, from small seeps (<1 ha) to large cienegas, also backwaters, oxbows, marshes, lakes, and reservoirs.

**Threats:** Drought, groundwater pumping, water diversion/water extraction, habitat conversion to urban/agriculture, nonnative/invasive species (e.g., fish, frogs, aquatic plants).

**Opportunities for cooperation on conservation actions:** Known as very important for migratory waterfowl and shorebirds; NAWCA projects, U.S. Fish and Wildlife Service Refuge System.

**Primary Conservation Needs/Actions:** Promote wetland “no net loss”, grazing management, fencing, manage groundwater pumping, nonnative/invasive species control, erosion control, stakeholder participation/involvement, conservation of remaining water sources, and restoration of destroyed/degraded sites.

**Priority Species for Freshwater Wetlands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Snowy Plover	CC	IM	Protected sandy, gravelly shorelines	Maintain/Determine Status
Short-eared Owl	CC	MA	Wet meadows, marshes, cienegas, open, undisturbed (ABBA)	Double
“Mexican” Mallard	RC	MA	Lakes and marshes (H&W)	Increase by 50%
<b>Bald Eagle (Southwestern popn.)</b>	<b>RC</b>	<b>MA</b>	<b>Large trees, undisturbed areas (ABBA)</b>	<b>Increase by 50%</b>
Long-billed Curlew	CC	MA	Lake edges (M&P)	Increase by 50%
Northern Pintail	CC	MA	Intermittent high-elevation wetlands, marshes and shore with abundant vegetation (ABBA)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Clark's Grebe	CC	MA	Large areas of open water, emergent vegetation for nest cover (ABBA)	Maintain/Determine Status
American Avocet	CC	MA	Open, shallow water with sparse to no vegetation; mudflats (ABBA)	Maintain/Determine Status
Northern Harrier	RC	MA	Wet meadows, marshes, cienegas; open, undisturbed (ABBA)	Maintain
Mallard	CC	PR	Dense vegetation, shallow water, abundant food (ABBA)	Maintain/Determine Status
Lesser Scaup	CC	PR	Reservoirs, below dams (winter) (ABBA)	Maintain/Determine Status

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

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

**Habitat: Cliff/Rock**

**Location:** Canyons, mountains, desert outcrops throughout the Mexican Highlands.

**Dominant plant species:** Lichens, agaves (*Agave* spp.), yucca (*Yucca* spp.); scattered and sparse vegetation of the immediate area.

**Physical/biological descriptions:** Natural ledges and crevices in cliff faces, natural caves and overhangs, rocky slopes, rock outcrops, talus slopes, and open rocky ridges and hillsides; bare ground, thin soil.

**Threats:** Disturbance and habitat destruction due to recreation, mining, wind farms.

**Opportunities for cooperation on conservation actions:** Work with recreational climbers, mining companies, power producers; coordinate with peregrine surveys.

**Primary Conservation Needs/Actions:** Recreation management, especially during raptor breeding season; education/awareness; identify and protect other important nesting areas.

**Priority Species for Cliff/Rock**

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Golden Eagle	RC	IM	Rock ledges, near abundant prey; undisturbed (ABBA)	Double
Military Macaw	CC	IM	Crevices for nesting (H&W)	Increase by 50%
Black Swift	CC	MA	Aerial, nests behind waterfalls (H&W)	Maintain/Determine Status
White-throated Swift	CC	PR	Steep canyon walls, cliffs, ridgelines with expanses of open rock in various habitats (ABBA)	Maintain/Determine Status

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

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

## **Habitat: Urban**

**Location:** Cities and towns throughout Region.

**Dominant plant species:** Variety of native and nonnative species (including eucalyptus and palm).

**Physical/biological descriptions:** Heavily altered, impervious surface (pavement, etc.); artificial lights, low vegetation cover, water sources (e.g., pools, ponds).

**Threats:** Fragmentation, bird predation by feral animals (e.g., cats), increased predators, wildlife diseases, power lines, harassment by people, vehicle, and building collisions, invasive/non-native plants, competition from avian escapees (e.g., parrots).

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

**Primary Conservation Needs/Actions:** Planned development, water conservation, greenbelts, raptor-friendly power poles, public outreach/education, native landscaping, initiate “Cats Indoors!” Program, point and non-point source pollution control.

**Priority Species for Urban Habitat**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Gila Woodpecker	RC	PR	Columnar cactus and large exotic trees (ABBA)	Increase by 50%
Costa’s Hummingbird	CC	PR	Desert landscaping, nectar sources, avoids exotic landscaping (ABBA)	Maintain/Determine Status

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

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

## **Habitat: Agriculture**

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

**Dominant plant species:** Cotton, alfalfa, grains, vineyards, citrus, pecans, etc.

**Physical/biological descriptions:** Irrigated fields, fallow fields, sod farms, alfalfa fields, field edges, ditch and canal berms, irrigation canals and run-off ponds, shelter belts, sod farms, natural edges/hedgerows, waste grain; often resulting in monocultures and low-diversity.

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

**Opportunities for cooperation on conservation actions:** Cooperating with ranchers/farmers on various projects (wildlife-friendly, added value projects); working on shorebird, waterfowl, and winter raptor habitats projects; increase collaborative efforts; reduce pesticide use; promote organic farming; and water conservation.

**Primary Conservation Needs/Actions:** Produce guidelines to farming cooperatively with priority birds, finding common objectives; pollution control; water conservation; planned development; wildlife-friendly agriculture practices.

**Priority Species for Agricultural Habitat**

<b>Species</b>	<b>Concern Category *</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Sprague's Pipit	CC	MA	Irrigated fields (R&M)	Double
Mallard	CC	MA	Near marshes, lakes	Maintain/Determine Status
"Mexican" Mallard	RC	MA	Near marshes, lakes	Maintain/Determine Status
Mountain Plover	CC	MA	Sod farms, short grass/bare fields (ABBA)	Maintain/Determine Status
Long-billed Curlew	CC	MA	Short grass fields, pastures	Maintain/Determine Status
Short-eared Owl	CC	PR	Near wet meadows, marshes, cienegas	Double
Long-eared Owl	RC	PR	Abundant rodent population (ABBA)	Increase by 50%



<b>Species</b>	<b>Concern Category *</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Cassin's Kingbird	RC	PR	Taller trees near out-buildings, stock ponds (ABBA)	Increase by 50%
Eastern "Lilian's" Meadowlark	RC	PR	Scattered low shrubs, grass in fields, pastures (ABBA)	Increase by 50%
Burrowing Owl	RC	PR	Open areas, short grass, with burrows (ABBA)	Maintain/Determine Status
Common Ground-Dove	RC	PR	Brushy or open pastures, fields, edges (ABBA)	Maintain/Determine Status
Loggerhead Shrike	RC	PR	Edge with thorny trees and shrubs (ABBA)	Maintain/Determine Status
Western Meadowlark	RC	PR	Pastures, fallow fields (ABBA)	Maintain/Determine Status
Swainson's Hawk	CC	PR	Shelter belts, pastures, fields (breeding) (ABBA)	Maintain
Northern Harrier	RC	PR	Open fields, relatively undisturbed (ABBA)	Maintain

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

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

## **Focus Areas for the Mexican Highlands 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.

This Focus Area list is dynamic and will be changed based on objectives on 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 28 Focus Areas in the Mexican Highlands/Sierra Madre Occidental Region. They are a combination of the Important Bird Areas as designated by the Arizona IBA program and the Áreas de Importancia para la Conservación de las Aves en México. Descriptions of Focus Areas can be found at <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 subsequent versions of the Conservation Plan.

### **Focus Areas in Arizona**

MH-AZ-1 San Pedro National Riparian Conservation Area  
MH-AZ-2 Agua Fria National Monument Riparian Corridors  
MH-AZ-3 Tuzigoot  
MH-AZ-4 Watson and Willow Lakes  
MH-AZ-5 Lower Oak Creek  
MH-AZ-6 Arivaca Cienega and Creek  
MH-AZ-7 California Gulch, Coronado National Forest  
MH-AZ-8 Chiracahua Mountains  
MH-AZ-9 Santa Rita Mountains  
MH-AZ-10 Sycamore Canyon  
MH-AZ-11 Appleton-Whittell Audubon Research Ranch  
MH-AZ-12 Huachuca Mountains  
MH-AZ-13 Upper Little Colorado River Watershed  
MH-AZ-14 Sabino and Lower Bear Creek

### **Focus Areas in Sonora**

MH-Son-1 Sistema de Sierras de la Sierra Madre Occidental – AICA-126

MH-Son-2 Baserac-Sierra Tabaco-Bavispe - AICA-132  
MH-Son-3 Alamos-Río Mayo - AICA-128  
MH-Son-4 Cuenca de Río Yaqui - AICA-127  
MH-Son-5 Mesa de Guacamayas - AICA-205

**Focus Areas in Sinaloa**

MH-Sin-1 Río Presidio-Pueblo Nuevo - AICA-77  
MH-Sin-2 Pericos - AICA-237  
MH-Sin-3 Parte Alta del Río Humaya - AICA-138  
MH-Sin-4 Río Choix  
MH-Sin-5 El Palmito  
MH-Sin-6 El Mineral de Nuestra Señora  
MH-Sin-7 Sierra de Tacuichamona  
MH-Sin-8 Surutato  
MH-Sin-9 Las Bufas - AICA-76

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*.

## **Pacific Lowlands Region Chapter BCRs 43 and 44**

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### **Location:**

This Region extends south from northeastern Sonora between the Sonoran Desert and the Sierra Madre Occidental to the coast of northern Sinaloa and continues along the coast to the border of Nayarit. On the eastern boundary it parallels the Pacific slope of the Sierra Madre Occidental at approximately 775 m above sea level. For purposes of this Plan, the Pacific Lowlands Region includes parts of two Bird Conservation Regions: the portion of Planicie Costera, Lomerios y Caniones del Occidente-43 that is in Sinaloa and Sonora and the small portion of Marismas Nacionales-44 that is in Sinaloa (Figure 5). This combination of BCRs was used in the regional Species Assessment for Northwest Mexico with the exception that Nayarit was included in the assessment.



Figure 5. Map of the Pacific Lowlands Region.

### **Description:**

The terrestrial plant communities in this Region are primarily thorn scrubland, tropical deciduous forest, and pine-oak forests, crossed by ribbons of riparian vegetation. Mangroves, coastal marine wetlands, shoreline, and other marine habitats are found on the coast. Important breeding bird islands and foraging waters are found offshore.

At higher elevations various pine and oak species are abundant. At lower elevations dominant plants in Tropical Deciduous Forest are: Mauto (*Lysiloma divaricata*), Amapa (*Tabebuia palmerii*), Palo Blanco (*Ipomoea arborecens*), Higuera (*Ficus mexicana*), Mesquite (*Prosopis juliflora*), Binolo (*Acacia farnesiana*), Binorama (*A. cochliacantha*), and Cardón (*Pachycereus pecten-aborigenus*). Riparian plant species include: Sauce (*Salix bonplandian*), Fresno (*Fraxinus uhdei*), Alamo (*Alnus glabrata*), Garra de León (*Clethra lanata*), *Dendropanax arboreus*, Madroño (*Arbutus xalapensis*), Guamuchil (*Pitecellobium dulce*), Alamo (*Populus dimorpha*), Ejotón (*Canavalia villosa*), Manto (*Ipomoea purpurea*), and Camote Amargo (*Dioscorea* spp.). Wetland related species, include: Red Mangrove (*Rhizophora mangle*), Black Mangrove (*Avicenia germinans*), White Mangrove (*Laguncularia racemosa*), and *Conocarpus erecta*. (Scientific names are used for readers unfamiliar with Spanish plant names.)

The area hosts important ecosystems (tropical deciduous forests, coastal lagoons, mangroves, and riparian corridors) that support an impressive and diverse flora and fauna. Tropical deciduous forests are one of the most endangered communities in the western hemisphere. The region is rich in endemic species, some of which have legal conservation status (NOM 059 ECOL 2001). Important bird species include: Bare-throated Tiger Heron, Peregrine Falcon, West Mexican Chachalaca, Yellow-Breasted Crake, Military Macaw, Sinaloa Martin, Elegant Trogon, Pale-billed Woodpecker, Purplish-backed Jay, Black-capped Vireo, Western Sandpiper, and Snowy Plover.

The region is used for a variety of activities including: agriculture, shrimp aquaculture, cattle ranching, logging, and mining, among others. Destruction of habitat is severe, especially in coastal areas. Cattle ranching, mining, agriculture, and logging cause soil erosion and habitat loss and degradation. Agricultural activities also use excessive agrochemicals and other pollutants.

Private land conservation programs are important conservation tools that currently are being used in different critical areas. However, there is also a need to increase the number of research, monitoring, and environmental education programs. Ornithological studies are desperately needed to document the area's biodiversity. They are also important in order to inform the implementation of conservation measurements. The primary conservation actions needed include increasing the amount of land in conservation programs and Natural Protected Areas, promoting ecotourism, and diversifying local economy in rural areas.

### **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 Pacific Lowlands 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 Pacific Lowlands 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 the entire area of BCR 43 and 44 within the Pacific Lowlands Region of Sinaloa and Nayarit 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: Grassland=Desert Grassland; 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 14. Continental Concern Species in the Pacific Lowlands Region.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Limosa fedoa</i>	Marbled Godwit	USSCP, PIF	W	<b>5</b>	Coastal Wetlands
<i>Sterna antillarum</i>	Least Tern	MX-PIF	B/W	5/1	Coastal Wetlands
<i>Coccyzus minor</i>	Mangrove Cuckoo	MX-PIF, PIF	R	<b>5</b>	Tropical Deciduous Forest, Coastal Wetlands
<i>Forpus cyanopygius</i>	Mexican Parrotlet	MX-PIF	B/W	5/4	Riparian, Tropical Deciduous Forest, Urban
<i>Amazona finschi</i>	Lilac-crowned Parrot	MX-PIF	R	<b>5</b>	Tropical Deciduous Forest, Pine-Oak, Coastal Wetlands
<i>Trogon elegans</i>	Elegant Trogon	MX-PIF, PIF	R	<b>5</b>	Pine-Oak, Riparian, Tropical Deciduous Forest

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Vireo bellii</i>	Bell's Vireo	PIF	W	5	Tropical Deciduous Forest
<i>Calocitta colliei</i>	Black-throated Magpie-Jay	MX-PIF	R	5	Riparian, Tropical Deciduous Forest
<i>Cyanocorax beecheii</i>	Purplish-backed Jay	MX-PIF	R	5	Riparian, Tropical Deciduous Forest, Coastal Wetlands
<i>Poliophtila nigriceps</i>	Black-capped Gnatcatcher	MX-PIF, PIF	R	5	Riparian, Tropical Deciduous Forest
<i>Aimophila quinquestriata</i>	Five-striped Sparrow	MX-PIF, PIF	R	5	Tropical Deciduous Forest, Grassland, Cliff/Rock
<i>Pheucticus chrysopheplus</i>	Yellow Grosbeak	MX-PIF	B/W	5/3	Pine-Oak, Tropical Deciduous Forest
<i>Passerina versicolor</i>	Varied Bunting	MX-PIF, PIF	W	5	Riparian, Tropical Deciduous Forest
<i>Sula nebouxii</i>	Blue-footed Booby	PIF	B/W	¾	Coastal Wetlands, Islands
<i>Sula leucogaster</i>	Brown Booby	PIF	B/W	4/4	Islands
<i>Porzana flaviventer</i>	Yellow-breasted Crane	MX-PIF	R	4	Freshwater Wetlands, Coastal Wetlands
<i>Haematopus palliatus</i>	American Oystercatcher	USSCP, PIF	B/W	¾	Islands, Coastal Wetlands
<i>Recurvirostra americana</i>	American Avocet	PIF	W	4	Coastal Wetlands, Freshwater Wetlands
<i>Larus heermanni</i>	Heermann's Gull	MX-PIF, PIF	B/W	2/4	Islands, Coastal Wetlands
<i>Sterna anaethetus</i>	Bridled Tern	PIF	B	4	Islands, Off-Shore, Coastal Wetlands
<i>Aratinga canicularis</i>	Orange-fronted Parakeet	MX-PIF	R	4	Tropical Deciduous Forest, Coastal Wetlands
<i>Streptoprocne semicollaris</i>	White-naped Swift	MX-PIF	R	4	Pine-Oak, Cliff/Rock, Tropical Deciduous Forest
<i>Chlorostilbon auriceps</i>	Golden-crowned Emerald	MX-PIF	R	4	Riparian, Tropical Deciduous Forest
<i>Tilmature dupontii</i>	Sparkling-tailed Hummingbird	MX-PIF	R	4	Riparian, Tropical Deciduous Forest
<i>Trogon citreolus</i>	Citreoline Trogon	MX-PIF	R	4	Riparian, Tropical Deciduous Forest



Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Picus auricularis</i>	Gray-crowned Woodpecker	MX-PIF	R	4	Pine-Oak, Tropical Deciduous Forest
<i>Tyrannus crassirostris</i>	Thick-billed Kingbird	MX-PIF, PIF	B/W	4/2	Riparian, Tropical Deciduous Forest
<i>Vireo atricapillus</i>	Black-capped Vireo	MX-PIF, PIF	W	-/4	Tropical Deciduous Forest, Riparian
<i>Vermivora luciae</i>	Lucy's Warbler	PIF	W	-/4	Tropical Deciduous Forest, Riparian
<i>Granatellus venustus</i>	Red-breasted Chat	MX-PIF	R	4	Riparian, Tropical Deciduous Forest
<i>Aimophila carpalis</i>	Rufous-winged Sparrow	MX-PIF, PIF	B/W	4/3	Grassland, Tropical Deciduous Forest
<i>Euphonia elegantissima</i>	Elegant Euphonia	MX-PIF	B/W	¾	Pine-Oak
<i>Anas acuta</i>	Northern Pintail	NAWMP	W	-/3	Freshwater Wetlands, Coastal Wetlands
<i>Aythya affinis</i>	Lesser Scaup	PIF	W	-/3	Freshwater Wetlands, Coastal Wetlands
<i>Aechmophorus clarkii</i>	Clark's Grebe	MX-PIF, PIF	W	-/3	Freshwater Wetlands, Coastal Wetlands
<i>Fregata magnificens</i>	Magnificent Frigatebird	PIF	B/W	3/3	Coastal Wetlands, Island
<i>Charadrius alexandrinus</i>	Snowy Plover	USSCP, PIF	B/W	3/3	Coastal Wetlands
<i>Charadrius wilsonia</i>	Wilson's Plover	USSCP, PIF	R	3	Coastal Wetlands
<i>Numenius phaeopus</i>	Whimbrel	USSCP, PIF	W	-/3	Coastal Wetlands, Agriculture
<i>Numenius americanus</i>	Long-billed Curlew	USSCP, PIF	W	-/3	Coastal Wetlands, Agriculture
<i>Calidris mauri</i>	Western Sandpiper	USSCP, PIF	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Calidris alpina</i>	Dunlin	USSCP, PIF	W	-/3	Coastal Wetlands
<i>Calidris himantopus</i>	Stilt Sandpiper	PIF	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Limnodromus griseus</i>	Short-billed Dowitcher	USSCP, PIF	W	-/3	Coastal Wetlands
<i>Sterna nilotica</i>	Gull-billed Tern	PIF	B/W	2/3	Coastal Wetlands
<i>Ara militaris</i>	Military Macaw	MX-PIF	R	3	Pine-Oak, Riparian, Cliff/Rock, Tropical Deciduous Forest

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Campephilus guatemalensis</i>	Pale-billed Woodpecker	MX-PIF	R	3	Pine-Oak, Riparian, Tropical Deciduous Forest
<i>Deltarhynchus flammulateus</i>	Flammulated Flycatcher	MX-PIF	R	3	Riparian, Tropical Deciduous Forest
<i>Vireo hypochryseus</i>	Golden Vireo	MX-PIF	B/W	3/2	Riparian, Tropical Deciduous Forest
<i>Toxostoma bendirei</i>	Bendire's Thrasher	MX-PIF	B/W	3/2	Tropical Deciduous Forest, Grassland
<i>Euthlypis lachrymose</i>	Fan-tailed Warbler	MX-PIF	B/W	2/3	Riparian, Tropical Deciduous Forest
<i>Rhodinocichla rosea</i>	Rosy Thrush-Tanager	MX-PIF	R	3	Riparian, Tropical Deciduous Forest
<i>Piranga erythrocephala</i>	Red-headed Tanager	MX-PIF	B/W	2/3	Pine-Oak
<i>Cyanocompsa parellina</i>	Blue Bunting	MX-PIF	B/W	3/2	Riparian, Tropical Deciduous Forest
<i>Passerina ciris</i>	Painted Bunting	PIF, MX-PIF	W	-/3	Riparian, Tropical Deciduous Forest
<i>Branta bernicla</i> (Pacific popn)	Brant	NAWMP, SJV	W	-/2	Coastal Wetlands
<i>Anas platyrhynchos</i>	Mallard	NAWMP	B/W	2/1	Coastal Wetlands, Freshwater Wetlands
<i>Cairina moschata</i>	Muscovy Duck	MX-PIF, PIF	R	2	Riparian, Coastal Wetlands
<i>Penelope purpurascens</i>	Crested Guan	MX-PIF	R	2	Pine-Oak, Tropical Deciduous Forest, Coastal Wetlands
<i>Puffinus griseus</i>	Sooty Shearwater	MX-PIF	W	-/2	Off-Shore
<i>Puffinus tenuirostris</i>	Short-tailed Shearwater	PIF	W	-/2	Off-Shore
<i>Puffinus opisthomelas</i>	Black-vented Shearwater	PIF, MX-PIF	W	-/2	Off-Shore
<i>Oceanodroma tethys</i>	Wedge-rumped Storm-Petrel	PIF	W	-/2	Off-Shore
<i>Oceanodroma melania</i>	Black Storm-Petrel	MX-PIF, PIF	W	-/2	Off-Shore
<i>Oceanodroma microsoma</i>	Least Storm-Petrel	MX-PIF, PIF	W	-/2	Off-Shore
<i>Phaethon aethereus</i>	Red-billed Tropicbird	PIF	B/W	2/2	Island, Off-Shore
<i>Sula sula</i>	Red-footed Booby	PIF	B	2/-	Off-Shore
<i>Phalacrocorax penicillatus</i>	Brandt's Cormorant	PIF	W	-/2	Off-Shore, Coastal Wetlands

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Egretta caerulea</i>	Little Blue Heron	PIF	R	2	Coastal Wetlands, Freshwater Wetlands
<i>Egretta rufescens</i>	Reddish Egret	MX-PIF, PIF	R	2	Coastal Wetlands, Islands
<i>Sarcoramphus papa</i>	King Vulture	MX-PIF	R-extirpated?	2	Pine-Oak, Tropical Deciduous Forest
<i>Aramides axillaries</i>	Rufous-necked Wood-Rail	MX-PIF	R	2	Coastal Wetlands
<i>Tringa solitaria</i>	Solitary Sandpiper	USSCP	W	-/2	Freshwater Wetlands, Coastal Wetlands
<i>Arenaria interpres</i>	Ruddy Turnstone	USSCP	W	-/2	Coastal Wetlands
<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 alba</i>	Sanderling	USSCP, PIF	W	-/2	Coastal Wetlands
<i>Rynchops niger</i>	Black Skimmer	PIF	B/W	2/2	Coastal Wetlands
<i>Morococcyx erythropygus</i>	Lesser Ground-Cuckoo	MX-PIF	R	2	Tropical Deciduous Forest
<i>Aratinga holochlora</i>	Green Parakeet	MX-PIF, PIF	R	2	Tropical Deciduous Forest, Pine-Oak
<i>Micrathene whitneyi</i>	Elf Owl	MX-PIF, PIF	W	-/2	Tropical Deciduous Forest
<i>Asio flammeus</i>	Short-eared Owl	PIF	W	-/2	Grassland, Coastal Wetlands, Freshwater Wetlands
<i>Nyctiphrynus mcleodii</i>	Eared Poorwill	MX-PIF	R	2	Pine-Oak
<i>Calypte costae</i>	Costa's Hummingbird	PIF	W	-/2	Tropical Deciduous Forest
<i>Empidonax traillii</i>	Willow Flycatcher	PIF	W	-/2	Tropical Deciduous Forest Riparian
<i>Pachyramphus major</i>	Gray-collared Becard	MX-PIF	R	2	Riparian, Pine-Oak
<i>Vireo pallens</i>	Mangrove Vireo	MX-PIF	R	2	Coastal Wetlands
<i>Myadestes occidentalis</i>	Brown-backed Solitaire	MX-PIF	R	2	Riparian, Pine-Oak
<i>Spiza americana</i>	Dickcissel	PIF	W	-/2	Agriculture, Grassland

Species of Regional Concern (Table 15) 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 species 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 15. Regional Concern Species in the Pacific Lowlands Region.

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Ortalis wagleri</i>	Rufous-bellied Chachalaca	MX-PIF	R	5	Tropical Deciduous Forest, Pine-Oak
<i>Aratinga holochlora brewsteri</i>	Green “Cuchajaqui” Parakeet	SJV	R	5	Pine-Oak, Tropical Deciduous Forest
<i>Myiarchus nuttingi</i>	Nutting’s Flycatcher	MX-PIF	R	5	Tropical Deciduous Forest, Grassland
<i>Myiarchus tyrannulus</i>	Brown-crested Flycatcher	MX-PIF	R	5	Riparian, Tropical Deciduous Forest, Pine-Oak
<i>Thryothorus sinaloa</i>	Sinaloa Wren	MX-PIF	R	5	Tropical Deciduous Forest, Riparian
<i>Thryothorus felix</i>	Happy Wren	MX-PIF	R	5	Tropical Deciduous Forest, Riparian
<i>Charadrius collaris</i>	Collared Plover	MX-PIF	B/W	4/3	Coastal Wetlands
<i>Amazilia violiceps</i>	Violet-crowned Hummingbird	MX-PIF	R	4	Riparian, Tropical Deciduous Forest
<i>Xiphorhynchus flavigaster</i>	Ivory-billed Woodcreeper	MX-PIF	R	4	Tropical Deciduous Forest
<i>Parula pitiaiyumi</i>	Tropical Parula	MX-PIF	B/W	4/3	Tropical Deciduous Forest, Coastal Wetlands, Pine-Oak
<i>Melospiza kieneri</i>	Rusty-crowned Ground-Sparrow	MX-PIF	B/W	4/2	Riparian, Tropical Deciduous Forest
<i>Aimophila botteri</i>	Botteri’s Sparrow	MX-PIF, PIF	B/W	4/2	Tropical Deciduous Forest, Grassland
<i>Anas strepera</i>	Gadwall	NAWMP	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Anas discors</i>	Blue-winged Teal	NAWMP	W	-/3	Coastal Wetlands, Freshwater Wetlands

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Anas cyanoptera</i>	Cinnamon Teal	NAWMP	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Anas clypeata</i>	Northern Shoveler	NAWMP	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Anas crecca</i>	Green-winged Teal	NAWMP	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Aythya valisineria</i>	Canvasback	NAWMP	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Aythya americana</i>	Redhead	NAWMP	W	-/3	Coastal Wetlands, Freshwater Wetlands
<i>Meleagris gallopavo</i>	Wild Turkey	MX-PIF	B/W	3/2	Pine-Oak
<i>Tigrisoma mexicanum</i>	Bare-throated Tiger-Heron	MX-PIF	B/W	3/2	Freshwater Wetlands, Coastal Wetlands, Riparian
<i>Parabuteo unicinctus</i>	Harris's Hawk	MX-PIF	R	3	Tropical Deciduous Forest
<i>Porphyrio martinica</i>	Purple Gallinule	SJV	R	3	Freshwater Wetlands
<i>Columba flavivestris</i>	Red-billed Pigeon	MX-PIF, PIF	R	3	Tropical Deciduous Forest, Pine-Oak, Riparian
<i>Ciccaba virgata</i>	Mottled Owl	MX-PIF	R	3	Tropical Deciduous Forest, Pine-Oak
<i>Caprimulgus ridgwayi</i>	Buff-collared Nightjar	MX-PIF	R	3	Tropical Deciduous Forest
<i>Camptostoma imberbe</i>	Northern Beardless-Tyrannulet	MX-PIF	R	3	Riparian, Tropical Deciduous Forest
<i>Myiodynastes luteiventris</i>	Sulphur-bellied Flycatcher	MX-PIF	B	3/-	Tropical Deciduous Forest, Pine-Oak
<i>Vireo flavoviridis</i>	Yellow-green Vireo	MX-PIF	B	3/-	Riparian, Tropical Deciduous Forest
<i>Turdus assimilis</i>	White-throated Robin	MX-PIF	B/W	2/3	Tropical Deciduous Forest, Pine-Oak, Riparian
<i>Melanotis caerulescens</i>	Blue Mockingbird	MX-PIF	R	3	Pine-Oak, Riparian, Tropical Deciduous Forest
<i>Arremonops rufivirgatus</i>	Olive Sparrow	MX-PIF	R	3	Riparian, Tropical Deciduous Forest
<i>Crypturellus cinnamomeus</i>	Thicket Tinamou	MX-PIF	R	2	Tropical Deciduous Forest
<i>Chen caerulescens</i>	Snow Goose – Lesser (Western Central Flyway)	NAWMP	W	-/2	Coastal Wetlands, Freshwater Wetlands

Scientific Name	Common English Name	Plan	Season of Occurrence	RD (B/W)	Habitat
<i>Aythya collaris</i>	Ring-necked Duck	NAWMP	W	-/2	Freshwater Wetlands
<i>Chondrohierax uncinatus</i>	Hook-billed Kite	MX-PIF	R	2	Tropical Deciduous Forest, Coastal Wetlands
<i>Busarellus nigricollis</i>	Black-collared Hawk	MX-PIF	R	2	Freshwater Wetlands, Riparian, Coastal Wetlands
<i>Micrastur semitorquatus</i>	Collared Forest-Falcon	MX-PIF	R	2	Tropical Deciduous Forest
<i>Herpetotheres cachinnans</i>	Laughing Falcon	MX-PIF	R	2	Tropical Deciduous Forest
<i>Falco rufigularis</i>	Bat Falcon	MX-PIF	R	2	Tropical Deciduous Forest, Pine-Oak
<i>Arenaria interpres</i>	Ruddy Turnstone	USSCP	W	-/2	Coastal Wetlands
<i>Coccyzus americanus</i> (Western popn.)	Yellow-billed “Western” Cuckoo	SJV	B	2/-	Riparian
<i>Megascops guatemalae</i>	Vermiculated Screech-Owl	MX-PIF	B/W	2/2	Tropical Deciduous Forest, Pine-Oak
<i>Trogon mexicanus</i>	Mountain Trogon	MX-PIF	R	2	Pine-Oak
<i>Mitrephanes phaeocercus</i>	Tufted Flycatcher	MX-PIF	R	2	Riparian, Pine-Oak
<i>Empidonax occidentalis</i>	Cordilleran Flycatcher	MX-PIF	B/W	2/1	Riparian, Pine-Oak
<i>Attila spadiceus</i>	Bright-rumped Attila	MX-PIF	R	2	Tropical Deciduous Forest, Pine-Oak
<i>Pachyramphus aglaiae</i>	Rose-throated Becard	MX-PIF	R	2	Pine-Oak, Riparian, Tropical Deciduous Forest
<i>Myioborus pictus</i>	Painted Redstart	MX-PIF	R	2	Pine-Oak, Riparian, Tropical Deciduous Forest
<i>Myioborus miniatus</i>	Slate-throated Redstart	MX-PIF	R	2	Pine-Oak
<i>Piranga bidentata</i>	Flame-colored Tanager	MX-PIF	R	2	Pine-Oak, Riparian
<i>Melospiza melodia</i>	Song Sparrow	MX-PIF	R	2	Freshwater Wetlands, Riparian

The following Stewardship Responsibility Species (Table 16) for the Pacific Lowlands Region 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 these 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 16. Additional Stewardship Responsibility Species for the Pacific Lowlands Region.

Scientific Name	Common English Name	Season of Occurrence	RD (B/W)	Habitat
<i>Callipepla douglasii</i>	Elegant Quail	R	5	Tropical Deciduous Forest
<i>Dendrocygna bicolor</i>	Fulvous Whistling-Duck	R	5	Riparian, Coastal Wetlands, Freshwater Wetlands
<i>Amazilia rutila</i>	Cinnamon Hummingbird	R	5	Tropical Deciduous Forest, Riparian
<i>Helimaster constantii</i>	Plain-capped Starthroat	R	5	Tropical Deciduous Forest, Riparian
<i>Melanerpes uropygialis</i>	Gila Woodpecker	R	5	Tropical Deciduous Forest, Islands, Pine-Oak
<i>Lanius ludovicianus</i>	Loggerhead Shrike	B/W	4/5	Tropical Deciduous Forest, Agriculture, Grasslands
<i>Turdus rufopalliatus</i>	Rufous-backed Robin	R	5	Tropical Deciduous Forest, Riparian, Pine-Oak
<i>Toxostoma curvirostre</i>	Curve-billed Thrasher	R	5	Tropical Deciduous Forest
<i>Icterus pustulatus</i>	Streak-backed Oriole	B/W	5/4	Tropical Deciduous Forest, Pine-Oak, Riparian
<i>Saltator coerulescens</i>	Grayish Saltator	R	5	Tropical Deciduous Forest Pine-Oak, Riparian
<i>Cacicus melanicterus</i>	Yellow-winged Cacique	R	5	Tropical Deciduous Forest, Agriculture

The total number of species in the Continental (88) and Regional (51) Concern Species lists is second only to the Arid Borderlands total number of species (88 and 83 respectively). The percentage of Continental Concern Species is the highest of all of the Regions in the SJV area. The total number of Stewardship Responsibility Species is second lowest of the SJV's Regions. This is possibly due to the fact that many of the Tropical Deciduous Forest species' ranges continue south and east along the Mexican coast line and the SJV has part of their entire ranges.

Table 17. Total and percentage of Concern Species and Stewardship Responsibility Species in the SJV and the Pacific Lowlands Region.

<b>Concern Category</b>	<b>Total Number of Concern Species in the Category</b>	<b>Concern Species as a % of the regularly occurring SJV (667) species</b>	<b>Concern Species as a % of the regularly occurring Pacific Lowlands (384) species</b>
Continental Concern Species (Table 14)	88	13.2%	22.9%
Continental Concern Species also with RD = 5	13	1.9%	3.4%
Regional Concern Species (Table 15)	51	7.6%	13.3%
Regional Concern Species also with RD =5	6	0.9%	1.6%
Stewardship-Only * (Table 16)	11	1.6%	2.9%
Total Stewardship species **	30	4.5%	7.8%

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

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



## **Pacific Lowlands Habitat Sections**

### **Habitat Discussions:**

The following sections describe the major habitats found in the Pacific Lowlands 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 Pacific Lowlands 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), and Ybarra (2004; Gulf of California).

Abbreviations for sources for Habitat Needs are as follows:

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

Russell and Monson (1998) = (R&M)

Pronatura-Sinaloa expert group, pers. comm. = (PS)

## **Habitat: Tropical Deciduous Forest**

**Location:** Western slope and canyons of Sierra Madre Occidental parallel with the coastline.

**Dominant plant species:** Mauto (*Lysiloma divaricata*), Kapok/Pochote (*Ceiba acuminata*), Copal/Torote (*Bursera laxiflora*), Hecho/Cardón (*Pachycereus pecten-aboriginum*).

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

**Threats:** Erosion, unsustainable grazing, land conversion/development, catastrophic fires, invasive/nonnative species; capture and sale of parrots (psittacines) and Painted Buntings; unsustainable timber harvesting, habitat conversion due to agriculture, mining.

**Opportunities for cooperation on conservation actions:** Work with private landowners and ejidos; coordinate with current efforts on Painted Bunting protection.

**Primary Conservation Needs/Actions:** Timber harvest management, sustainable harvest of Vara Blanca (*Croton fragilis*), grazing management, erosion control, planned development, fire management, nonnative species control (grasses); educate about the unsustainable capture and sale of psittacines, Painted Buntings, and other species; promote education of the importance of tropical deciduous forest; protect various examples of intact TDF, protect tall trees within TDF, protect cavity trees and trees used for foraging.

### **Priority Species for Tropical Deciduous Forest**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
King Vulture	CC	IM	Former resident breeder, humid and semi-humid forest (H&W); extirpated?	Double/Determine Presence
<b>Green “Cuchajaqui” Parakeet</b>	CC	<b>IM</b>	<b>Nest in tree cavities, termitaries, and colonially in rock crevices (H&amp;W); <i>A.h.brewsteri</i> only</b>	<b>Double</b>
Military Macaw	CC	IM	Semi-deciduous forests in foothills, nests in tree cavities and rock crevices (H&W)	Double
<b>Lilac-crowned Parrot</b>	CC	<b>IM</b>	<b>Semi-deciduous forest and edge, cavity nester (H&amp;W)</b>	<b>Double</b>
Painted Bunting	CC	IM	Arid thorn forest (nonbreeding) (H&W)	Double
Crested Guan	CC	IM	Tall trees in canyons (PS)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Mexican Parrotlet</b>	CC	IM	Semi-deciduous to deciduous forest, cavity nester (H&W)	Increase by 50%
Vermiculated Screech-Owl	RC	MA	Semi-deciduous forest, dense scrubby woodland (H&W)	Double
<b>Bell's Vireo</b>	CC	MA	<b>Brushy woodland, semi-open areas with bushes, scrub, and hedges (H&amp;W)</b>	<b>Double</b>
Hook-billed Kite	RC	MA	Thorn forest, land snails (H&W)	Increase by 50%
Collared Forest-Falcon	RC	MA	Deciduous forest (H&W)	Increase by 50%
<b>Mangrove Cuckoo</b>	CC	MA	<b>Woodland and edge (H&amp;W)</b>	<b>Increase by 50%</b>
Buff-collared Nightjar	RC	MA	Brushy woodland, scrub, thorn forest (H&W)	Increase by 50%
Gray-crowned Woodpecker	CC	MA	Specifics unknown (?)	Increase by 50%
Ivory-billed Woodcreeper	RC	MA	Forest and edge, specifics unknown (H&W)	Increase by 50%
Black-capped Vireo	CC	MA	Brushy second growth and forest edge (nonbreeding) (H&W)	Increase by 50%
<b>Purplish-backed Jay</b>	CC	MA	<b>Arid to semi-arid forest and edge (H&amp;W)</b>	<b>Increase by 50%</b>
Red-breasted Chat	CC	MA	Arid to semi-arid thorn forest, scrubby woodland (H&W)	Increase by 50%
Botteri's Sparrow	RC	MA	Thorn forest with grassy clearings (H&W); tall, coarse grass with associated scattered shrubs (R&M)	Increase by 50%
Bat Falcon	RC	PR	Forest edge and clearings with scattered trees, cavity nester (H&W)	Double
Rosy Thrush-Tanager	CC	PR	Dense understory of brushy woodland (H&W)	Double
Thicket Tinamou	RC	PR	Second growth woodland, thickets, and edge (H&W)	Increase by 50%
Laughing Falcon	RC	PR	Forest, edge, open areas with scattered trees, cavity nester (H&W)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Rufous-bellied Chachalaca</b>	<b>RC</b>	<b>PR</b>	<b>Arid to semi-humid woodland, thorn forest, and second growth (H&amp;W)</b>	<b>Increase by 50%</b>
Red-billed Pigeon	RC	PR	Large fruiting trees especially along streams and around clearings (R&M)	Increase by 50%
Lesser Ground-Cuckoo	CC	PR	Thorn forest, brushy scrub, and forest patches (H&W)	Increase by 50%
Mottled Owl	RC	PR	Forest edges and semi-open areas, cavity nester (H&W); near riparian areas with large trees (R&M)	Increase by 50%
Sparkling-tailed Hummingbird	CC	PR	Forest edge, brushy second growth (H&W)	Increase by 50%
Citreoline Trogon	CC	PR	Nests in termitaries and cavities (H&W)	Increase by 50%
<b>Elegant Trogon</b>	<b>CC</b>	<b>PR</b>	<b>Cavity nester (H&amp;W)</b>	<b>Increase by 50%</b>
Pale-billed Woodpecker	CC	PR	Forest and edge, cavity nester (H&W)	Increase by 50%
Northern Beardless-Tyrannulet	RC	PR	Arid to semi-humid woodland, second growth, semi-open areas with scrub and scattered trees (H&W); with some trees >8m tall, near water (R&M)	Increase by 50%
Willow Flycatcher	CC	PR	Humid to semi-arid scrubby fields with hedges, fences, woodland and edge (nonbreeding) (H&W)	Increase by 50%/Determine Breeding Status in NE Sonora
Bright-rumped Attila	RC	PR	Humid to semi-arid forest and edge, scrubby woodland (H&W)	Increase by 50%
<b>Nutting's Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Arid to semi-arid scrubby woodland, thorn forest, semi-open areas with scrub and small trees, cavity nester (H&amp;W)</b>	<b>Increase by 50%</b>
<b>Brown-crested Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Arid to semi-humid forest and edge, scrubby woodland, open areas with hedges, scattered trees, cavity nester (H&amp;W)</b>	<b>Increase by 50%</b>
Flammulated Flycatcher	CC	PR	Arid to semi-arid thorn forest and scrubby woodland, cavity nester (H&W)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Sulphur-bellied Flycatcher	RC	PR	Humid to semi-arid forest, edge and clearings, cavity nester (H&W)	Increase by 50%
Thick-billed Kingbird	CC	PR	Woodland and edge, semi-open areas with trees, hedges, scrub (H&W)	Increase by 50%
Rose-throated Becard	RC	PR	Near riparian (R&M)	Increase by 50%
Golden Vireo	CC	PR	Arid to semi-humid scrub, thorn forest, woodland, forest edge (H&W)	Increase by 50%
Yellow-green Vireo	RC	PR	Forest and woodland, scrubby forest edge (H&W)	Increase by 50%
<b>Black-throated Magpie-Jay</b>	<b>CC</b>	<b>PR</b>	<b>Arid to semi-humid woodland, semi-open areas with scattered trees (H&amp;W)</b>	<b>Increase by 50%</b>
<b>Sinaloa Wren</b>	<b>RC</b>	<b>PR</b>	<b>Forest, edge, second growth (H&amp;W); large emergent trees, arroyo banks and slopes with undergrowth (R&amp;M)</b>	<b>Increase by 50%</b>
<b>Happy Wren</b>	<b>RC</b>	<b>PR</b>	<b>Forest, edge, second growth (H&amp;W); dense thickets, near water and large trees (R&amp;M)</b>	<b>Increase by 50%</b>
<b>Black-capped Gnatcatcher</b>	<b>CC</b>	<b>PR</b>	<b>Arid to semi-arid scrub, thorn forest (H&amp;W); dense vegetation along washes (R&amp;M)</b>	<b>Increase by 50%</b>
White-throated Robin	RC	PR	Forest and edge, arid deciduous forest (at least seasonally) (H&W)	Increase by 50%
Blue Mockingbird	RC	PR	Scrubby woodland and understory (H&W)	Increase by 50%
Tropical Parula	RC	PR	Large trees with Spanish moss (H&W)	Increase by 50%
Fan-tailed Warbler	CC	PR	Open, rocky understory (H&W)	Increase by 50%
<b>Yellow Grosbeak</b>	<b>CC</b>	<b>PR</b>	<b>Large trees, near well-wooded watercourses (R&amp;M); Edge, scrubby woodland, thorn forest (H&amp;W)</b>	<b>Increase by 50%</b>
Blue Bunting	CC	PR	Brushy forest, woodland, and edge, scrubby thickets (H&W)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Varied Bunting</b>	CC	PR	<b>Thorn forest, edge, scrubby woodland, overgrown clearings (H&amp;W); also scrub near riparian (R&amp;M)</b>	<b>Increase by 50%</b>
Rusty-crowned Ground-Sparrow	RC	PR	Brushy woodlands and thorn forest, hedges and thickets (H&W)	Increase by 50%
Olive Sparrow	RC	PR	Arid to semi-humid, deciduous forest, woodland, thorn forest (H&W)	Increase by 50%
Rufous-winged Sparrow	CC	PR	Arid to semi-arid thorn forest and brushy scrub (H&W); thornscrub with tall tobosa grasses to short false grama grass (R&M)	Increase by 50%
<b>Five-striped Sparrow</b>	CC	PR	<b>Arid to semiarid brushy scrub and thorn forest, typically on rocky slopes, more open scrub and grassy areas in winter (H&amp;W); rocky well-vegetated hillsides and canyon slopes (R&amp;M)</b>	<b>Increase by 50%</b>
Elf Owl	CC	PR	Arid to semi-arid wooded canyons, thorn forest, semi-open areas with scrub and scattered trees, cavity nester (H&W); nest in cavities large cacti or trees (R&M)	Maintain/Determine Status
Costa's Hummingbird	CC	PR	Arid to semi-arid scrub, open areas with scattered bushes and trees (H&W); nonbreeding? (R&M)	Maintain/Determine Status
Bendire's Thrasher	CC	PR	Arid to semi-arid, open and semi-open areas, with scattered scrub, cacti, hedges (H&W); nonbreeding? (R&M)	Maintain/Determine Status
Harris's Hawk	RC	PR	Arid to semi-arid areas with brush, large cacti, thorn scrub, nests in large cacti or tree (H&W); nest in large saguaro, cardón, or hecho (R&M)	Maintain



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Orange-fronted Parakeet	CC	PR	Arid to semi humid forest, scattered forest patches and trees, nest in termitaries, or cavities (H&W)	Maintain
White-naped Swift	CC	PR	Cavity nester (PS); aerial and wide-ranging, arid highlands (H&W)	Maintain
Golden-crowned Emerald	CC	PR	Brushy woodland and scrub, overgrown clearings, forest edge (H&W)	Maintain
Violet-crowned Hummingbird	RC	PR	Arid to semi-arid scrub, thorn forest (H&W); near riparian (R&M)	Maintain
Lucy's Warbler	CC	PR	Arid scrub, mesquite, (H&W); nests behind loose bark or in cavity, breeds northern part of region only, winters southern part (R&M)	Maintain

\* 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:** This habitat type extends from the north central part of Sonora and Chihuahua to the northern part of the state of Jalisco along the Sierra Madre Occidental; the Pine-Oak zone is located from 800 m to the highest peaks of the Sierra.

**Dominant plant species:** The two most dominant groups are pines (*Pinus* spp.) and oaks (*Quercus* spp.), other species found include madrone (*Arbutus* spp.).

**Physical/biological descriptions:** From savannah-like woodlands to forest; includes mixed conifer forests in mountains with appropriate elevation.

**Threats:** Unsustainable logging, unsustainable grazing, erosion, and conversion to other uses. Opportunities for cooperation on conservation actions: Work with ejidos, local communities, CONANP.

**Primary Conservation Needs/Actions:** Protection of large trees, cavity trees, and extensive forested landscapes; augment protection zones; prevent loss and reduction of quality habitat areas.

**Priority Species in Pine-Oak Forest**

<b>Species</b>	<b>Concern Category</b>	<b>Cons. Action</b>	<b>Habitat Need</b>	<b>Population Objective</b>
King Vulture	CC	IM	Humid and semi-humid forest (H&W)	Determine status
<b>Green “Cuchajaqui” Parakeet</b>	CC	<b>IM</b>	<b>Nests in tree cavities, termitaries, and colonially in rock crevices (H&amp;W); <i>A.h.brewsteri</i> only</b>	<b>Double</b>
Military Macaw	CC	IM	Large snags, tree cavities, rock crevices (H&W)	Double
<b>Lilac-crowned Parrot</b>	CC	<b>IM</b>	<b>Cavity nester (H&amp;W)</b>	<b>Double</b>
Crested Guan	CC	IM	Tall trees in canyons (PS)	Increase by 50%
Bat Falcon	RC	MA	Nest in tree cavities, edges and clearings, scattered trees (H&W)	Double
<b>Rufous-bellied Chachalaca</b>	<b>RC</b>	<b>PR</b>	<b>Arid to semi-humid woodland, and second growth (H&amp;W)</b>	<b>Increase by 50%</b>
Wild Turkey	RC	MA	Grassy understory with some shrubs	Increase by 50%

Species	Concern Category	Cons. Action	Habitat Need	Population Objective
Gray-crowned Woodpecker	CC	MA	Cavity trees, specifics unknown (?)	Increase by 50%
Elegant Euphonia	CC	MA	Tall trees in canyons; mistletoe (PS)	Maintain/Determine Status
Red-billed Pigeon	RC	PR	Riparian vegetation (PS)	Increase by 50%
Vermiculated Screech-Owl	RC	PR	Dense woods and shrubs (H&W)	Increase by 50%
Mottled Owl	RC	PR	Nest in tree cavities, old nests of other birds (H&W)	Increase by 50%
Mountain Trogon	RC	PR	Nest in tree cavities/rotten stumps (H&W)	Increase by 50%
<b>Elegant Trogon</b>	<b>CC</b>	<b>PR</b>	<b>Nest in tree cavities (H&amp;W)</b>	<b>Increase by 50%</b>
Pale-billed Woodpecker	CC	PR	Large trees for cavities, open gallery forest (R&M)	Increase by 50%
Tufted Flycatcher	RC	PR	Humid to semi-humid forest and edge (H&W)	Increase by 50%
Cordilleran Flycatcher	RC	PR	Shady arroyos (H&W)	Increase by 50%
Bright-rumped Attila	RC	PR	Nest in epiphytes, tree cavities, banks (H&W)	Increase by 50%
<b>Brown-crested Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Near riparian, extensive large trees with a closed canopy (R&amp;M)</b>	<b>Increase by 50%</b>
Sulphur-bellied Flycatcher	RC	PR	Nest in tree cavities, natural or woodpecker-made (R&M)	Increase by 50%
Gray-collared Becard	CC	PR	Oak-dominated (R&M)	Increase by 50%
Rose-throated Becard	RC	PR	Near riparian (R&M)	Increase by 50%
Brown-backed Solitaire	CC	PR	Specifics unknown (?)	Increase by 50%
White-throated Robin	RC	PR	Deep canyon bottoms, near water (R&M)	Increase by 50%
Blue Mockingbird	RC	PR	Dense understory (H&W)	Increase by 50%
Tropical Parula	RC	PR	Humid to semi-arid forest and edge (H&W)	Increase by 50%
Painted Redstart	RC	PR	Nest in bank or on slope (H&W)	Increase by 50%
Slate-throated Redstart	RC	PR	Semi-humid forest and woodland (H&W)	
Flame-colored Tanager	RC	PR	Pines and Arizona cypresses (R&M)	Increase by 50%
Red-headed Tanager	CC	PR	Specifics unknown?	Increase by 50%

<b>Species</b>	<b>Concern Category</b>	<b>Cons. Action</b>	<b>Habitat Need</b>	<b>Population Objective</b>
<b>Yellow Grosbeak</b>	CC	PR	<b>Often in fruiting trees (H&amp;W)</b>	<b>Increase by 50%</b>
Eared Poorwill	CC	PR	Specifics unknown (?)	Maintain/Determine Status
White-naped Swift	CC	PR	Cavity nester; specifics unknown (?)	Maintain/Determine Status

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

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

## **Habitat: Desert Grassland**

**Location:** In the northern portion of the Region; in valleys at lower elevations.

**Dominant plant species:** Originally perennial bunch grasses, continuous grazing has shifted to low growing sod grasses; dry-tropic shrubs and small trees such as mesquite were natural elements but now found in greater abundance.

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

**Threats:** Unsustainable grazing, erosion, woody shrub encroachment, nonnative/invasive species.

**Opportunities for cooperation on conservation actions:** Importance as wintering grounds for migratory birds from the Great Plains, work with landowners to improve habitat in partnership with northern states and provinces.

**Primary Conservation Needs/Actions:** Grazing management, erosion control, nonnative/invasive species control, woody shrub control, proper fire management.

### **Priority Species for Desert Grassland**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Short-eared Owl	CC	MA	Open areas, with abundant prey (nonbreeding) (ABBA)	Double
Botteri's Sparrow	RC	MA	Sacaton or other native bunch grass (ABBA); tall, coarse grass with scattered shrubs (R&M);	Increase by 50%
<b>Five-striped Sparrow</b>	CC	PR	<b>Rocky hillsides, scrub, scattered grass and forbs (ABBA)</b>	<b>Increase by 50%/Determine presence</b>
<b>Nutting's Flycatcher</b>	RC	PR	<b>Cavity nester (R&amp;M)</b>	<b>Increase by 50%</b>
Dickcissel	CC	PR	Overgrown, weedy fields (nonbreeding) (H&W)	Increase by 50%
Bendire's Thrasher	CC	PR	Open country and grassy area with scattered scrub, cacti, hedges (H&W); scattered mesquite, acacia, yucca (ABBA)	Maintain/Determine Status
Rufous-winged Sparrow	CC	PR	Scattered shrub, trees, with grass cover (ABBA); tall tobosa grass to short false grama (R&M)	Maintain

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

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

## **Habitat: Riparian Wetland**

**Location:** Along water courses, throughout Pacific Lowlands Region, all elevations.

**Dominant plant species:** Cottonwoods (*Populus* spp.), willows (*Salix* spp.), sycamores (*Plantanus* spp.).

**Physical/biological descriptions:** Water present at least during a part of the year.

**Threats:** Groundwater pumping, erosion, nonnative/invasive species, pollution, disturbance due to recreation; unsustainable timber harvest, habitat loss due to urban and agricultural expansion.

**Opportunities for cooperation on conservation actions:** Work with local people to improve habitat.

**Primary Conservation Needs/Actions:** Water conservation, watershed management, grazing management, fencing, erosion control, nonnative/invasive species control; sustainable hunting of Muscovy Duck and sustainable capture of macaws, parrots, and parrotlets; protection of riparian habitat.

### **Priority Species in Riparian Wetland**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Military Macaw	CC	IM	Cavity nester	Double
Painted Bunting	CC	IM	Winter and in migration (R&M, H&W)	Double
Muscovy Duck	CC	MA	Cavity nester; wooded rivers; locally extirpated by hunting (H&W)	Double
Rosy Thrush-Tanager	CC	MA	Specifics unknown (?)	Double
<b>Mexican Parrotlet</b>	<b>CC</b>	<b>MA</b>	<b>Cavity nester, protection from capture (PS)</b>	<b>Increase by 50%</b>
Yellow-billed "Western" Cuckoo	RC	MA	Densely wooded, multi-structured, native vegetation (ABBA)	Increase by 50%
Citreoline Trogon	CC	MA	Cavity nester (PS)	Increase by 50%
<b>Elegant Trogon</b>	<b>CC</b>	<b>MA</b>	<b>Cavity nester (PS)</b>	<b>Increase by 50%</b>
Black-capped Vireo	CC	MA	Humid brushy second growth and edge (H&W)	Increase by 50%
<b>Purplish-backed Jay</b>	<b>CC</b>	<b>MA</b>	<b>Forest and edge (H&amp;W); near water</b>	<b>Increase by 50%</b>
Red-breasted Chat	CC	MA	Shrubby areas (PS)	Increase by 50%

Species	Concern Category*	Cons. Action**	Habitat Need	30-Year Population Objective
Song Sparrow	RC	MA	Flowing streams or ciénegas with thickets of <i>Senecio salignus</i> , batamote, and willow (R&M)	Increase by 50%
Black-collared Hawk	RC	PR	Slow moving rivers (H&W); tall trees (PS), specifics unknown (?)	Double
Bare-throated Tiger-Heron	RC	PR	Wooded edges or trees but not in heavy forest (H&W)	Increase by 50%
Red-billed Pigeon	RC	PR	Tall trees and canyons (PS)	Increase by 50%
Sparkling-tailed Hummingbird	CC	PR	Nectar sources and nearby perches (PS)	Increase by 50%
Pale-billed Woodpecker	CC	PR	Specifics unknown (?)	Increase by 50%
Northern Beardless-Tyrannulet	RC	PR	Shrubby, with some trees at least 8m tall, flowing water often present (R&M)	Increase by 50%
Tufted Flycatcher	RC	PR	Humid to semi-humid forest and edge, riparian in winter (H&W)	Increase by 50%
Willow Flycatcher	CC	PR	Mesic riparian in winter (nonbreeding) (PS)	Increase by 50%
Cordilleran Flycatcher	RC	PR	Specifics unknown in winter (?)	Increase by 50%
<b>Brown-crested Flycatcher</b>	<b>RC</b>	<b>PR</b>	<b>Extensive large trees with a closed canopy (R&amp;M)</b>	<b>Increase by 50%</b>
Flammulated Flycatcher	CC	PR	Cavity nester (H&W)	Increase by 50%
Thick-billed Kingbird	CC	PR	Edges and semi-open areas (H&W)	Increase by 50%
Gray-collared Becard	CC	PR	Specifics unknown (?)	Increase by 50%
Rose-throated Becard	RC	PR	Edges, open areas, and groves (H&W)	Increase by 50%
Golden Vireo	CC	PR	Scrub and edges (H&W)	Increase by 50%
Yellow-green Vireo	RC	PR	Not in heavy forest (H&W)	Increase by 50%
<b>Black-throated Magpie-Jay</b>	<b>CC</b>	<b>PR</b>	<b>Specifics unknown (?)</b>	<b>Increase by 50%</b>
Sinaloa Wren	RC	PR	Shrubby edge and second growth (H&W)	Increase by 50%
Happy Wren	RC	PR	Shrubby edge and second growth (H&W)	Increase by 50%
Black-capped Gnatcatcher	CC	PR	Dense vegetation along water courses (R&M)	Increase by 50%



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Brown-backed Solitaire	CC	PR	Use riparian in northern part of range? (R&M)	Increase by 50%
White-throated Robin	RC	PR	Deep canyon bottoms (H&W)	Increase by 50%
Blue Mockingbird	RC	PR	Mountain streams, floodplain thickets (R&M)	Increase by 50%
Painted Redstart	RC	PR	Wintering in riparian woodlands (R&M)	Increase by 50%
Fan-tailed Warbler	CC	PR	Sycamores in Sonora (R&M)	Increase by 50%
Flame-colored Tanager	RC	PR	High elevation riparian (?) (R&M)	Increase by 50%
Blue Bunting	CC	PR	Specifics unknown (?)	Increase by 50%
<b>Varied Bunting</b>	<b>CC</b>	<b>PR</b>	<b>Scrub adjacent to riparian (R&amp;M)</b>	<b>Increase by 50%</b>
Olive Sparrow	RC	PR	Shrubby areas (PS); specifics unknown (?)	Increase by 50%
Rusty-crowned Ground-Sparrow	RC	PR	Shrubby areas (PS); specifics unknown (?)	Increase by 50%
Golden-crowned Emerald	CC	PR	Brushy woodland, scrub and edge (H&W)	Maintain/Determine Status
Violet-crowned Hummingbird	RC	PR	Riparian woodland (H&W); gallery riparian woodland in northern range, riparian within thornscrub and deciduous forest in southern range (R&M)	Maintain
Lucy's Warbler	CC	PR	Mesquite bosques, washes with ironwoods, mesquites, palo verde and chinios, at low elevation in willows, sycamores and oaks (R&M); cavity nester or nests behind bark shred; winters only south of Hermosillo	Maintain

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

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

## **Habitat: Freshwater Wetlands**

**Location:** Widely scattered throughout the Region.

**Dominant plant species:** Mixture of aquatic emergent vegetation, dominated by cattails (*Typha* spp.) and rushes (*Scirpus* spp.).

**Physical/biological descriptions:** Freshwater, from small seeps (<1 ha) to large reservoirs including cienegas, marshes, backwaters, oxbows, and along minor and major rivers especially lower portions of basins.

**Threats:** Groundwater pumping, water diversions/water extraction, land conversion to urban and agriculture, draining, nonnative/invasive species (e.g., fish, bullfrogs, crayfish, aquatic plants), and unsustainable grazing.

**Opportunities for cooperation on conservation actions:** North American Wetland Conservation Act projects; work with Natural Protected Areas.

**Primary Conservation Needs/Actions:** Promote no net loss, encourage restoration of destroyed or degraded sites, awareness, avoid development near wetlands, manage the hunting season (i.e., bag limits, seasons).

### **Priority Species for Freshwater Wetlands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Muscovy Duck	CC	IM	Wooded marshes, cavity nester (H&W); sustainable hunting	Double
Yellow-breasted Crake	CC	IM	Aquatic vegetation (PS); grassy marshes, floating aquatic vegetation (H&W)	Increase by 50%
Northern Pintail	CC	MA	Marshes (nonbreeding) (H&W)	Double
Short-eared Owl	CC	MA	Marshes (nonbreeding) (H&W)	Double
Song Sparrow	RC	MA	Freshwater marshes (H&W); thickets of Composite spp. ( <i>Senecio salignus</i> ), Batamote ( <i>Baccharis salicifolia</i> ), and Willow spp. (R&M)	Double
Bare-throated Tiger-Heron	RC	MA	Wooded edges or trees nearby, nests in trees (H&W)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
American Avocet	CC	MA	Lakes and marshes (nonbreeding) (H&W)	Maintain/Determine Status
Lesser Scaup	CC	PR	Lakes and ponds (H&W)	Double
Black-collared Hawk	RC	PR	Marshes and lakes, nests in shrub or tree (H&W)	Double
Clark's Grebe	CC	PR	Freshwater lakes with surrounding reedy vegetation (nonbreeding) (H&W)	Maintain/Determine Status
Little Blue Heron	CC	PR	Nests in bushes and trees (H&W)	Maintain/Determine Status
Purple Gallinule	RC	PR	Freshwater marshes with reedbeds and large areas of floating vegetation (H&W)	Maintain/Determine Status
Solitary Sandpiper	CC	PR	Freshwater marshes, lakes, and ponds (nonbreeding) (H&W)	Maintain/Determine Status
Western Sandpiper	CC	PR	Lakes, reservoirs, ponds (R&M)	Maintain/Determine Status
Stilt Sandpiper	CC	PR	Freshwater marshes and lakes (nonbreeding) (H&W)	Maintain/Determine Status
Lesser Snow Goose- western Central Flyway	RC	PR	Extensive marshes (nonbreeding) (H&W)	Maintain
Gadwall	RC	PR	Marshes (nonbreeding) (H&W)	Maintain
Mallard	CC	PR	Marshes (nonbreeding) (H&W)	Maintain
Blue-winged Teal	RC	PR	Marshes (nonbreeding) (H&W)	Maintain
Cinnamon Teal	RC	PR	Marshes (nonbreeding) (H&W)	Maintain
Northern Shoveler	RC	PR	Marshes (nonbreeding) (H&W)	Maintain
Green-winged Teal	RC	PR	Marshes (nonbreeding) (H&W)	Maintain
Canvasback	RC	PR	Lakes (nonbreeding) (H&W)	Maintain
Redhead	RC	PR	Lakes and marshes with emergent vegetation (nonbreeding) (H&W)	Maintain
Ring-necked Duck	RC	PR	Wooded ponds, lakes, and marshes (nonbreeding) (H&W)	Maintain

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

## **Habitat: Coastal Wetlands**

**Location:** Occurring along the coast of Sinaloa.

**Dominant plant species:** Iodine Bush (*Allenrolfea occidentalis*) saltbushes (*Atriplex spp.*), Batis (*Batis maritima*), saltgrass (*Distichlis spp.*) and seagrasses/eelgrass (*Zostera spp.*); includes red (*Rhizophora mangle*), white (*Laguncularia racemosa*), and black (*Avicennia germinans*) mangroves.

**Physical/biological descriptions:** Salt water and brackish, tide-flooded estuaries, protected bays, lagoons; little freshwater input; in-shore waters; includes sand, shell, rock shores, beaches, mudflats in the intertidal zone or strand.

**Threats:** Land conversion for aquaculture/tourism/agriculture/urban, wood extraction (mangroves), silting, sewage and other pollutants, unsustainable fishing, disturbance due to off-road vehicles, human disturbance particularly during nesting, and excessive take during hunting.

**Opportunities for cooperation on conservation actions:** Existing heightened awareness of coastal concerns; presence of charismatic species (sea turtles, whales) to bring awareness to ecosystem; work with the Esteros Working Group from the Gulf of California, also the initiative to protect mangrove estuaries; develop local groups to protect nesting colonies; use nesting colonies as an educational opportunity.

**Primary Conservation Needs/Actions:** Protect nesting areas and colonies from disturbance and development; promote sustainable fisheries; protect eelgrass beds from pollution, dredging, and other damage; manage sustainable waterfowl hunting, manage hunting of Muscovy Ducks, and reduce hunting of Brown and Blue-footed boobies; conserve and protect existing coastal wetlands; environmental education; modify Norma Oficial 022 in order to prevent further mangrove deforestation, protect existing mangroves; improve awareness and education; and reduce pet trade of parrots.

**Priority Species in Coastal Wetlands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Muscovy Duck	CC	IM	Mangroves, nests in tree cavities (PS; H&W)	Double
Lilac-crowned Parrot	CC	IM	Mangroves, cavity nester (PS)	Double

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Gull-billed Tern	CC	IM	Beaches, salt marshes, coastal lagoons, rarely off-shore; nests in scrapes (H&W)	Increase by 50%
Collared Plover	RC	IM	Sandy beaches, coastal lagoons (H&W); nests in scrapes	Maintain/Determine Status
Snowy Plover	CC	IM	Sandy beaches, salt ponds, salt flats (H&W); nests in scrapes	Maintain/Determine Status
<b>Least Tern</b>	<b>CC</b>	<b>IM</b>	<b>Sandy beaches and islets, coastal bays and lagoons, estuaries; nests colonially on beaches (H&amp;W)</b>	<b>Maintain/Determine Status</b>
Northern Pintail	CC	MA	Estuaries (nonbreeding)(H&W)	Double
Short-eared Owl	CC	MA	Marshes (nonbreeding) (H&W)	Double
Bare-throated Tiger-Heron	RC	MA	Mangroves, nests in trees (H&W)	Increase by 50%
Hook-billed Kite	RC	MA	Mangroves (H&W)	Increase by 50%
Crested Guan	CC	MA	Mangroves (PS)	Increase by 50%
Yellow-breasted Crake	CC	MA	Aquatic vegetation (PS); grassy marshes, floating aquatic vegetation (H&W)	Increase by 50%
<b>Mangrove Cuckoo</b>	<b>CC</b>	<b>MA</b>	<b>In mangroves only in southern part of region (R&amp;M)</b>	<b>Increase by 50%</b>
<b>Purplish-backed Jay</b>	<b>CC</b>	<b>MA</b>	<b>Mangroves (H&amp;W)</b>	<b>Increase by 50%</b>
Blue-footed Booby	CC	MA	Inshore waters often feeds in shallow water off beaches (H&W)	Maintain/Determine Status
Magnificent Frigatebird	CC	MA	Roosts on trees and cliffs; nests in bushes or low trees (H&W)	Maintain/Determine Status
Little Blue Heron	CC	MA	Variety of brackish habitats; nests in bushes and trees (H&W)	Maintain/Determine Status
Reddish Egret	CC	MA	Coastal lagoons, beaches, estuaries, rarely away from salt water; nests in bushes or ground (H&W); mangroves (PS)	Maintain/Determine Status
Rufous-necked Wood-Rail	CC	MA	Mangroves (H&W); specifics unknown (?)	Maintain/Determine Status

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Wilson's Plover	CC	MA	Sandy beaches, coastal lagoons, salt ponds (H&W); nests in scrapes	Maintain/Determine Status
American Oystercatcher	CC	MA	Sandy and rocky coasts, rarely estuaries; nest scrape on ground (H&W)	Maintain/Determine Status
Bridled Tern	CC	MA	Rocky islets, adjacent beaches, and headlands; nests in crevice or rather hidden (H&W)	Maintain/Determine Status
Black Skimmer	CC	MA	Coastal lagoons, estuaries, beaches; nest scrape on ground (H&W)	Maintain
Orange-fronted Parakeet	CC	MA	Mnagroves (PS) nest in termitaries, or cavities (H&W)	Maintain
Brant	CC	PR	Coastal bays and estuaries (nonbreeding) (H&W)	Double
Lesser Scaup	CC	PR	Coastal lagoons, estuaries, rarely open ocean (nonbreeding)(H&W)	Double
Black-collared Hawk	RC	PR	Mangroves; nests in bush or tree near water (H&W); specifics unknown (?)	Double
Whimbrel	CC	PR	Estuaries, sandy beaches, lagoons (nonbreeding)(H&W)	Double
Sanderling	CC	PR	Sandy beaches, salt lagoons, less often estuaries, rocky coasts (H&W)	Double
Dunlin	CC	PR	Estuaries, coastal lagoons, beaches (nonbreeding)(H&W)	Double
Short-billed Dowitcher	CC	PR	Estuaries, coastal lagoons, beaches (nonbreeding)(H&W)	Double
Long-billed Curlew	CC	PR	Estuaries, salt marshes, lagoons (nonbreeding)(H&W)	Increase by 50%
<b>Marbled Godwit</b>	<b>CC</b>	<b>PR</b>	Estuaries, salt marshes, lagoons, beaches (nonbreeding)(H&W)	<b>Increase by 50%</b>
Surfbird	CC	PR	Rocky coasts (nonbreeding) (H&W)	Increase by 50%
Mangrove Vireo	CC	PR	Mangroves (H&W); specifics unknown (?)	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Tropical Parula	RC	PR	Mangroves (H&W); specifics unknown (?)	Increase by 50%
Clark's Grebe	CC	PR	Coastal bays and estuaries (nonbreeding)(H&W)	Maintain/Determine Status
Brandt's Cormorant	CC	PR	Sea coasts, large bays (nonbreeding)(H&W)	Maintain/Determine Status
American Avocet	CC	PR	Estuaries, lagoons (nonbreeding)(H&W)	Maintain/Determine Status
Solitary Sandpiper	CC	PR	Marshes (nonbreeding) (PS)	Maintain/Determine Status
Ruddy Turnstone	RC	PR	Beaches	Maintain/Determine Status
Black Turnstone	CC	PR	Rocky coasts, estuaries, beaches (nonbreeding)(H&W)	Maintain/Determine Status
Western Sandpiper	CC	PR	Coastal lagoons, estuaries, beaches, salt ponds (nonbreeding)(H&W)	Maintain/Determine Status
Stilt Sandpiper	CC	PR	Coastal lagoons, less often estuaries, beaches (nonbreeding)(H&W)	Maintain/Determine Status
Lesser Snow Goose- western central flyway	RC	PR	Estuaries (nonbreeding)(H&W)	Maintain
Gadwall	RC	PR	Coastal lagoons (nonbreeding)(H&W)	Maintain
Mallard	CC	PR	Estuaries (nonbreeding)(H&W)	Maintain
Blue-winged Teal	RC	PR	Coastal lagoons (nonbreeding)(H&W)	Maintain
Cinnamon Teal	RC	PR	Coastal lagoons (nonbreeding)(H&W)	Maintain
Northern Shoveler	RC	PR	Estuaries (nonbreeding)(H&W)	Maintain
Green-winged Teal	RC	PR	Estuaries (nonbreeding)(H&W)	Maintain
Canvasback	RC	PR	Coastal bays and lagoons (nonbreeding)(H&W)	Maintain
Redhead	RC	PR	Coastal bays and lagoons (nonbreeding)(H&W)	Maintain
Heermann's Gull	CC	PR	Rocky sea coasts, beaches, harbors, estuaries; nests colonially on ground (H&W)	Maintain

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

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

## **Habitat: Islands**

**Location:** Along the coast of Sinaloa.

**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.

**Threats:** Introduced nonnative species (e.g., cats, rodents, goats, other livestock) that prey on young at nest, human disturbance of breeding colonies, overuse of resources, egg collection, pollution, unsustainable fishing 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](http://www.islandconservation.org)), Comunidad y Biodiversidad, AC (COBI), Conservación de Territorio Isular (ISLA), Secretaria de Marina, CONANP, and the National Institute of Ecology (INE); work with local fishermen. All of the species or subspecies below breed on islands, some only breed on islands, several nest only on islands in the SJV area, bestowing a high level of responsibility on the JV.

**Primary Conservation Needs/Actions:** Remove exotic species, exclude livestock from nesting colonies, protect colonies from disturbance, initiate an education program for fishermen and other groups; reduce threats from pollution, oil spills, overfishing of prey species, and entanglement in fishing nets and lines.

### **Priority Species for Islands**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Brown Booby	CC	MA	Nests on steeper and more broken ground than other boobies (H&W); Nayarit breeding	Increase by 50%
Bridled Tern	CC	MA	Rocky islets, Nest in crevice or rather hidden (H&W); Nayarit	Increase by 50%
Red-billed Tropicbird	CC	MA	Nests on islands with steep cliffs; nest in crevices, burrows, shady places on rocky islands (H&W)	Maintain/Determine Status



<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Blue-footed Booby	CC	MA	Nests on fairly flat ground (H&W)	Maintain/Determine Status
Red-footed Booby	CC	MA	Nests in trees and bushes (H&W); Nayarit breeding	Maintain/Determine Status
Magnificent Frigatebird	CC	MA	Roosts on trees, cliffs; nests in bushes or low trees (H&W)	Maintain/Determine Status
Reddish Egret	CC	MA	Nests in bushes or ground (H&W)	Maintain/Determine Status
American Oystercatcher	CC	MA	Sandy and rocky coasts, nest scrape on ground (H&W)	Maintain/Determine Status
Heermann's Gull	CC	PR	Rocky sea coasts, beaches; nests colonially on ground (H&W)	Maintain

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

**Habitat: Off Shore/Pelagic**

**Location:** Off the coast of Sinaloa and the interior of the Sea of Cortez.

**Dominant plant species:** None.

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

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

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

**Primary Conservation Needs/Actions:** There are a large number of species using the open ocean primarily for foraging for fish during the non-breeding months. Needs are protection from entanglement in fishing lines and nets, and protection of fish stocks. The “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 nonbreeding habitats 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. SJV partners working off-shore can use this information to increase awareness and devise solutions to entanglement problems and over-fishing of certain stocks. This information is provided to show a complete picture of the diversity of the JV. Some of these birds breed on islands off the coast of Sinaloa; others only winter here, breeding elsewhere. The SJV has Planning and Responsibility for their Conservation Action in this habitat. They may have other Conservation Actions in other habitats that they use, especially species that breed in the SJV area.

**Priority Species for Off Shore/Pelagic Habitats**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Sooty Shearwater	CC	PR	Open sea, free from entanglement in fishing lines and nets, and with adequate fish stocks	Increase by 50%
Black-vented Shearwater	CC	PR	“	Increase by 50%
Black Storm-Petrel	CC	PR	“	Increase by 50%

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Least Storm-Petrel	CC	PR	“	Increase by 50%
Bridled Tern	CC	PR	“	Increase by 50%
Short-tailed Shearwater	CC	PR	“	Maintain/Determine Status
Wedge-rumped Storm-Petrel	CC	PR	“	Maintain/Determine Status
Red-billed Tropicbird	CC	PR	“	Maintain/Determine Status
Red-footed Booby	CC	PR	“	Maintain/Determine Status
Brandt’s Cormorant	CC	PR	“	Maintain/Determine Status

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

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

## **Habitat: Cliff-Rock**

**Location:** Canyons, mountains, outcrops throughout the Region especially in canyons and mountainous areas.

**Dominant plant species:** Lichens, agave (*Agave* spp.), yucca (*Yucca* spp.); scattered and sparse vegetation of the immediate area.

**Physical/biological descriptions:** Natural ledges and crevices in cliff faces, natural caves and overhangs, rocky slopes, rock outcrops, and open rocky ridges and hillsides; bare ground, thin soil.

**Threats:** Disturbance of nesting sites.

**Opportunities for cooperation on conservation actions:** Work with landowners to protect sensitive sites.

**Primary Conservation Needs/Actions:** Identify and protect important sites; education/awareness; prevent disturbance to nests.

**Priority Species for Cliff-Rock Habitat**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Military Macaw	CC	IM	Nests in rock crevices (H&W)	Double
Five-striped Sparrow	CC	PR	Rocky slopes with scrub and thorn forest (H&W)	Increase by 50%
White-naped Swift	CC	PR	Nests colonially in caves, sinkholes, limestone regions, also near waterfalls (H&W)	Maintain

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

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

## **Habitat: Urban**

**Location:** Cities and towns throughout the Region.

**Dominant plant species:** Diversity of native and nonnative species, including mesquite (*Prosopis* spp.), eucalyptus (*Eucalyptus* spp.), palms (*Washingtonia* spp. and others), and olive trees (*Elaeagnus* spp.).

**Physical/biological descriptions:** Heavily altered, impervious surface (pavement, etc.); artificial lights, low vegetation cover, water sources (e.g., pools, ponds).

**Threats:** Fragmentation, predation by feral animals (e.g., cats), wildlife diseases, power lines, harassment by people, vehicle and building collisions, invasive/nonnative plants, competition from avian escapees (e.g., parrots).

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

**Primary Conservation Needs/Actions:** Planned development; water conservation; greenbelts; raptor-friendly power poles; public outreach/education; native landscaping.

**Priority Species for Urban Habitats**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action*</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
<b>Mexican Parrotlet</b>	CC	MA	<b>Protection from harassment and capture</b>	<b>Increase by 50%</b>

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

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

## **Habitat: Agriculture**

**Location:** Valleys and flat topography throughout Region.

**Dominant plant species:** Corn, cotton, grasses (pasture), vineyards, orchards.

**Physical/biological descriptions:** Monoculture, low-diversity, crop fields, pastures, disturbed fields, irrigated fields, fallow fields, and shelter belts.

**Threats:** Pesticides, urban encroachment, water scarcity, abandonment, wildlife conflicts.

**Opportunities for cooperation on conservation actions:** Cooperating with ranchers/farmers on various projects (wildlife-friendly, value-added projects); to use agriculture to increase shorebirds, waterfowl, and winter raptors.

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

**Priority Species for Agricultural Habitats**

<b>Species</b>	<b>Concern Category*</b>	<b>Cons. Action**</b>	<b>Habitat Need</b>	<b>30-Year Population Objective</b>
Whimbrel	CC	PR	Meadows, fields (Skeel and Mallory 1996)	Double
Long-billed Curlew	CC	PR	Wet pastures, flooded agricultural fields (Dugger and Dugger 2002)	Increase by 50%
Dickcissel	CC	PR	Overgrown weedy fields (H&W)	Increase by 50%

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

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

## **Focus Areas for the Pacific Lowlands 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 26 Focus Areas in the Pacific Lowlands Region. They are the Important Bird Areas as designated by the Áreas de Importancia para la Conservación de las Aves en México. Descriptions of these Focus Areas can be found at <http://conabioweb.conabio.gob.mx/aicas/doctos/aicas.html>. A map of the combined SJV Focus Areas will be produced at a later date and included on the SJV website and subsequent versions of the Conservation Plan.

### **Focus Areas in Sonora**

PL-Son-1 Cuenca del Río Yaqui - AICA127

PL-Son-2 Alamos-Rio Mayo - AICA128

PL-Son-3 Sistema de Sierras de la Sierra Madre Occidental - AICA 126

### **Focus Areas in Sinaloa**

PL-Sin-1 Bahía Santa Maria - AICA 228

PL-Sin-2 Ensenada de Pabellones - AICA 146

PL-Sin-3 Sistema Lagunario Huizache-Caimanero - AICA 147

PL-Sin-4 Marismas Nacionales - AICA47

PL-Sin-5 Pericos - AICA 237

PL-Sin-6 Parte Alta del Río Humaya - AICA 138

PL-Sin-7 San Juan de Camarones - AICA 74

PL-Sin-8 Las Bufas - AICA 76

PL-Sin-9 Río Presidio-Pueblo Nuevo - AICA 77

PL-Sin-10 Río Choix - S1

PL-Sin-11 Imala - S2

PL-Sin-12 Río Tamazula - S3

PL-Sin-13 El Tule - S4

PL-Sin-14 El Mineral de Nuestra Señora - S5  
PL-Sin-15 Cienega de Casán - S6  
PL-Sin-16 Bahía de Cueta- S7  
PL-Sin-17 Sierra de Tacuichamona - S8  
PL-Sin-18 Meseta de Cacaxtla - S9  
PL-Sin-19 El Palmito - S10  
PL-Sin-20 Sierra del Ocote - S11  
PL-Sin-21 Surutato - S12  
PL-Sin-22 Panuco - S13  
PL-Sin-23 Plomosas - S14

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*. S# refers to an ad hoc numbering system devised by SJV partners in Sinaloa for the additional Focus Areas.



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## APPENDICES

**APPENDIX A.** List of regularly occurring (RD>1) avian species and subspecies found in the Sonoran Joint Venture area.

The following is a list of all regularly occurring (i.e., RD>1) avian species and subspecies in the SJV area. For complete scores and sources for these species, contact Carol Beardmore ([carol\\_beardmore@fws.gov](mailto:carol_beardmore@fws.gov)). Arizona Game and Fish Department's Species of Greatest Conservation Need (X) are shown in same column as the U.S. Fish and Wildlife Service's Focal Species (FS). The four right columns correspond to the Regional chapters in this Plan (CC=Continental Concern Species, RC=Regional Concern Species, and SS=Stewardship Responsibility Species).

Snaou7	Cnaou7	AGFD/BCC (X/FS)	Arid Borderlands	Californian Coasts and Mountains	Mexican Highlands	Pacific Lowlands
<i>Crypturellus cinnamomeus</i>	Thicket Tinamou					RC
<i>Dendrocygna autumnalis</i>	Black-bellied Whistling-Duck	X				
<i>Dendrocygna bicolor</i>	Fulvous Whistling- Duck		RC			RC
<i>Anser albifrons</i>	Greater White-fronted Goose	X				
<i>Chen caerulescens</i>	Snow Goose	X	SS			
<i>Chen caerulescens</i>	Snow Goose (Lesser	FS	RC			RC
<i>Chen rossii</i>	Ross's Goose	X				
<i>Branta hutchinsii</i>	Cackling Goose	X				
<i>Branta hutchinsii leucopaeia</i>	Cackling "Aleutian" Goose					
<i>Branta canadensis</i>	Canada Goose	X				
<i>Branta bernicla</i>	Brant	FS	CC	CC		CC
<i>Cairina moschata</i>	Muscovy Duck					CC
<i>Aix sponsa</i>	Wood Duck	X/FS				
<i>Anas strepera</i>	Gadwall	X	RC			RC
<i>Anas penelope</i>	Eurasian Wigeon					
<i>Anas americana</i>	American Wigeon	X/FS		RC		
<i>Anas platyrhynchos</i>	Mallard	X/FS	CC	CC	CC	CC
<i>Anas platyrhynchos diazi</i>	"Mexican" Duck					

<i>Anas discors</i>	Blue-winged Teal	XX	RC			RC
<i>Anas cyanoptera</i>	Cinnamon Teal		RC	RC		RC
<i>Anas clypeata</i>	Northern Shoveler	X		RC		RC
<i>Anas acuta</i>	Northern Pintail	X/FS	CC	CC	CC	CC
<i>Anas crecca</i>	Green-winged Teal	X				RC
<i>Aythya valisineria</i>	Canvasback	X	RC			RC
<i>Aythya americana</i>	Redhead	X	RC			RC
<i>Aythya collaris</i>	Ring-necked Duck	X	RC			RC
<i>Aythya marila</i>	Greater Scaup	X/FS		RC		
<i>Aythya affinis</i>	Lesser Scaup	X/FS	CC	CC	CC	CC
<i>Melanitta perspicillata</i>	Surf Scoter	X/FS	CC	CC		
<i>Melanitta fusca</i>	White-winged Scoter	FS		CC		
<i>Melanitta nigra</i>	Black Scoter	FS		CC		
<i>Bucephala albeola</i>	Bufflehead	X		RC		
<i>Bucephala clangula</i>	Common Goldeneye	X				
<i>Bucephala islandica</i>	Barrow's Goldeneye	X				
<i>Lophodytes cucullatus</i>	Hooded Merganser	X				
<i>Mergus merganser</i>	Common Merganser	X				
<i>Mergus serrator</i>	Red-breasted Merganser	X				
<i>Nomonyx dominicus</i>	Masked Duck					
<i>Oxyura jamaicensis</i>	Ruddy Duck	X	SS			
<i>Ortalis wagleri</i>	Rufous-bellied Chachalaca					RC
<i>Penelope purpurascens</i>	Crested Guan				CC	CC
<i>Alectoris chukar</i>	Chukar	X				
<i>Phasianus colchicus</i>	Ring-necked Pheasant					
<i>Dendragapus obscurus</i>	Blue Grouse	X			CC	
<i>Meleagris gallopavo</i>	Wild Turkey					RC
<i>Meleagris gallopavo merriami</i>	Wild "Merriam's" Turkey					
<i>Meleagris gallopavo mexicana</i>	Wild "Gould's" Turkey	X			RC	

<i>Oreortyx pictus</i>	Mountain Quail			CC		
<i>Callipepla squamata</i>	Scaled Quail	X	CC		CC	
<i>Callipepla douglasii</i>	Elegant Quail		RC			SS
<i>Callipepla californica</i>	California Quail			SS		
<i>Callipepla gambelii</i>	Gambel's Quail		SS			
<i>Colinus virginianus</i>	Northern Bobwhite					
<i>Colinus virginianus ridgwayi</i>	Northern "Masked" Bobwhite	X	RC		RC	
<i>Cyrtonyx montezumae</i>	Montezuma Quail	X	CC		CC	
<i>Gavia stellata</i>	Red-throated Loon	FS				
<i>Gavia pacifica</i>	Pacific Loon	X				
<i>Gavia immer</i>	Common Loon	X				
<i>Tachybaptus dominicus</i>	Least Grebe		RC			
<i>Podilymbus podiceps</i>	Pied-billed Grebe	X				
<i>Podiceps auritus</i>	Horned Grebe	X	CC	CC		
<i>Podiceps grisegena</i>	Red-necked Grebe					
<i>Podiceps nigricollis</i>	Eared Grebe	X				
<i>Aechmophorus occidentalis</i>	Western Grebe	X				
<i>Aechmophorus clarkii</i>	Clark's Grebe	X	CC	CC	CC	CC
<i>Phoebastria immutabilis</i>	Laysan Albatross	FS	CC			
<i>Phoebastria nigripes</i>	Black-footed Albatross	FS	CC	CC		
<i>Fulmarus glacialis</i>	Northern Fulmar					
<i>Puffinus creatopus</i>	Pink-footed Shearwater		CC	CC		
<i>Puffinus carneipes</i>	Flesh-footed Shearwater		CC	CC		
<i>Puffinus bulleri</i>	Buller's Shearwater		CC	CC		
<i>Puffinus griseus</i>	Sooty Shearwater		CC	CC		CC
<i>Puffinus tenuirostris</i>	Short-tailed Shearwater	FS	CC	CC		CC
<i>Puffinus opisthomelas</i>	Black-vented Shearwater		CC	CC		CC
<i>Oceanodroma leucorhoa</i>	Leach's Storm-Petrel		RC	RC		
<i>Oceanodroma homochroa</i>	Ashy Storm-Petrel	FS	CC	CC		

<i>Oceanodroma melania</i>	Black Storm-Petrel		CC	CC		CC
<i>Oceanodroma macrodactyla</i>	Guadalupe Storm-Petrel			CC		
<i>Oceanodroma microsoma</i>	Least Storm-Petrel		CC	CC		CC
<i>Phaethon aethereus</i>	Red-billed Tropicbird		CC			CC
<i>Sula dactylatra</i>	Masked Booby		CC	CC		
<i>Sula nebouxii</i>	Blue-footed Booby		CC	CC		CC
<i>Sula leucogaster</i>	Brown Booby		CC	CC		CC
<i>Sula sula</i>	Red-footed Booby			CC		CC
<i>Pelecanus erythrorhynchos</i>	American White Pelican	X				
<i>Pelecanus occidentalis</i>	Brown Pelican	X/FS	SS			
<i>Pelecanus occidentalis californicus</i>	Brown "California" Pelican			RC		
<i>Phalacrocorax penicillatus</i>	Brandt's Cormorant		CC	CC		CC
<i>Phalacrocorax brasilianus</i>	Neotropic Cormorant					
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	X/FS	RC			
<i>Phalacrocorax pelagicus</i>	Pelagic Cormorant		CC	CC		
<i>Anhinga anhinga</i>	Anhinga					
<i>Fregata magnificens</i>	Magnificent Frigatebird		CC			CC
<i>Botaurus lentiginosus</i>	American Bittern	X	RC	RC		
<i>Ixobrychus exilis</i>	Least Bittern		RC	RC		
<i>Tigrisoma mexicanum</i>	Bare-throated Tiger-Heron					RC
<i>Ardea herodias</i>	Great Blue Heron					
<i>Ardea alba</i>	Great Egret	X				
<i>Egretta thula</i>	Snowy Egret	X		RC		
<i>Egretta caerulea</i>	Little Blue Heron	X	CC	CC		CC
<i>Egretta tricolor</i>	Tricolored Heron	X	RC	RC		
<i>Egretta rufescens</i>	Reddish Egret	X/FS	CC	CC		CC
<i>Bubulcus ibis</i>	Cattle Egret	X				
<i>Butorides virescens</i>	Green Heron	X		SS		
<i>Nycticorax nycticorax</i>	Black-crowned Night-Heron	X		SS		

<i>Nyctanassa violacea</i>	Yellow-crowned Night-Heron					
<i>Cochlearius cochlearius</i>	Boat-billed Heron					
<i>Eudocimus albus</i>	White Ibis					
<i>Plegadis chihi</i>	White-faced Ibis	X				
<i>Ajaia ajaja</i>	Roseate Spoonbill		RC			
<i>Mycteria americana</i>	Wood Stork		CC			
<i>Coragyps atratus</i>	Black Vulture	X				
<i>Cathartes aura</i>	Turkey Vulture	X				
<i>Gymnogyps californianus</i>	California Condor	X		CC		
<i>Sarcoramphus papa</i>	King Vulture					CC
<i>Pandion haliaetus</i>	Osprey	X				
<i>Chondrohierax uncinatus</i>	Hook-billed Kite					RC
<i>Elanus leucurus</i>	White-tailed Kite	X		SS		
<i>Ictinia mississippiensis</i>	Mississippi Kite	X				
<i>Haliaeetus leucocephalus</i>	Bald Eagle	X	RC			
<i>Haliaeetus leucocephalus</i> (southwestern US popn.)	Bald "Southwest" Eagle		RC		RC	
<i>Busarellus nigricollis</i>	Black-collared Hawk					RC
<i>Circus cyaneus</i>	Northern Harrier	X	RC	RC	RC	
<i>Accipiter striatus</i>	Sharp-shinned Hawk	X				
<i>Accipiter cooperii</i>	Cooper's Hawk	X			RC	
<i>Accipiter gentilis</i>	Northern Goshawk	X			RC	
<i>Accipiter gentilis apache</i>	Northern "Apache" Goshawk	X			RC	
<i>Geranospiza caerulescens</i>	Crane Hawk					
<i>Asturina nitida</i>	Gray Hawk	X	RC		RC	
<i>Buteogallus anthracinus</i>	Common Black-Hawk	X	RC			
<i>Buteogallus urubitinga</i>	Great Black-Hawk					
<i>Parabuteo unicinctus</i>	Harris's Hawk		RC		RC	RC
<i>Harpyhaliaetus solitarius</i>	Solitary Eagle				CC	

<i>Buteo lineatus</i>	Red-shouldered Hawk	X				
<i>Buteo platypterus</i>	Broad-winged Hawk					
<i>Buteo brachyurus</i>	Short-tailed Hawk	X				
<i>Buteo swainsoni</i>	Swainson's Hawk	X	CC		CC	
<i>Buteo albicaudatus</i>	White-tailed Hawk					
<i>Buteo albonotatus</i>	Zone-tailed Hawk	X	RC		SS	
<i>Buteo jamaicensis</i>	Red-tailed Hawk					
<i>Buteo regalis</i>	Ferruginous Hawk	X/FS			RC	
<i>Buteo lagopus</i>	Rough-legged Hawk	X				
<i>Aquila chrysaetos</i>	Golden Eagle	X	RC	RC	RC	
<i>Micrastur semitorquatus</i>	Collared Forest-Falcon					RC
<i>Caracara cheriway</i>	Crested Caracara	X				
<i>Caracara lutosus?</i>	Guadalupe Caracara			CC		
<i>Herpetotheres cachinnans</i>	Laughing Falcon					RC
<i>Falco sparverius</i>	American Kestrel	X				
<i>Falco columbarius</i>	Merlin	X				
<i>Falco femoralis</i>	Aplomado Falcon				RC	
<i>Falco femoralis septentrionalis</i>	Aplomado "Northern" Falcon	X				
<i>Falco rufigularis</i>	Bat Falcon					RC
<i>Falco peregrinus</i>	Peregrine Falcon	X/FS			SS	
<i>Falco mexicanus</i>	Prairie Falcon	X				
<i>Laterallus jamaicensis</i>	Black Rail	FS	CC	CC		
<i>Laterallus jamaicensis coturniculus</i>	Black "California" Rail	X	RC	RC		
<i>Rallus longirostris</i>	Clapper Rail	FS	RC	RC		
<i>Rallus longirostris yumanensis</i>	Clapper "Yuma" Rail	X	RC			
<i>Rallus longirostris levipes</i>	Clapper "Light-footed" Rail			RC		
<i>Rallus longirostris rhizophorae</i>	Clapper "Magdalena" Rail					
<i>Rallus longirostris magdalenae</i>	Clapper "Sonoran" Rail					
<i>Rallus longirostris beldingii</i>	Clapper "Belding's" Rail					



<i>Rallus longirostris nayaritensis</i>	Clapper "Nayarit" Rail					
<i>Rallus limicola</i>	Virginia Rail	X	RC	RC		
<i>Aramides axillaris</i>	Rufous-necked Wood-Rail					CC
<i>Porzana carolina</i>	Sora	X		RC		
<i>Porzana flaviventer</i>	Yellow-breasted Crake					CC
<i>Porphyryla martinica</i>	Purple Gallinule					RC
<i>Gallinula chloropus</i>	Common Moorhen					
<i>Fulica americana</i>	American Coot		SS			
<i>Grus canadensis</i>	Sandhill Crane	X/FS				
<i>Pluvialis squatarola</i>	Black-bellied Plover	X				
<i>Charadrius collaris</i>	Collared Plover					RC
<i>Charadrius alexandrinus</i>	Snowy Plover	FS	CC	CC	CC	CC
<i>Charadrius alexandrinus nivosus</i>	Snowy "Western" Plover	X				
<i>Charadrius alexandrinus tenuirostris</i>	Snowy "Interior" Plover					
<i>Charadrius wilsonia</i>	Wilson's Plover	FS	CC			CC
<i>Charadrius semipalmatus</i>	Semipalmated Plover	X				
<i>Charadrius vociferus</i>	Killdeer	X				
<i>Charadrius montanus</i>	Mountain Plover	X/FS	CC	CC	CC	
<i>Haematopus palliatus</i>	American Oystercatcher	FS	CC			CC
<i>Haematopus bachmani</i>	Black Oystercatcher	FS	CC	CC		
<i>Himantopus mexicanus</i>	Black-necked Stilt		SS			
<i>Recurvirostra americana</i>	American Avocet	X	CC	CC	CC	CC
<i>Jacana spinosa</i>	Northern Jacana					
<i>Tringa melanoleuca</i>	Greater Yellowlegs	X				
<i>Tringa flavipes</i>	Lesser Yellowlegs	X				
<i>Tringa solitaria</i>	Solitary Sandpiper	X				CC
<i>Catoptrophorus semipalmatus</i>	Willet	X				
<i>Heteroscelus incanus</i>	Wandering Tattler					
<i>Actitis macularia</i>	Spotted Sandpiper	X				

<i>Numenius phaeopus</i>	Whimbrel	X	CC	CC		CC
<i>Numenius americanus</i>	Long-billed Curlew	X/FS	CC	CC	CC	CC
<i>Limosa fedoa</i>	Marbled Godwit	X/FS	CC	CC		CC
<i>Arenaria interpres</i>	Ruddy Turnstone		RC	RC		CC
<i>Arenaria melanocephala</i>	Black Turnstone		CC	CC		CC
<i>Aphriza virgata</i>	Surfbird		CC	CC		CC
<i>Calidris canutus</i>	Red Knot		CC	CC		
<i>Calidris alba</i>	Sanderling	X	CC	CC		CC
<i>Calidris mauri</i>	Western Sandpiper	X	CC	CC		CC
<i>Calidris minutilla</i>	Least Sandpiper	X				
<i>Calidris alpina</i>	Dunlin	X	CC	CC		CC
<i>Calidris himantopus</i>	Stilt Sandpiper	X				CC
<i>Limnodromus griseus</i>	Short-billed Dowitcher	X	CC	CC		CC
<i>Limnodromus scolopaceus</i>	Long-billed Dowitcher	X	SS			
<i>Gallinago delicata</i>	Wilson's Snipe	X				
<i>Phalaropus tricolor</i>	Wilson's Phalarope	X/FS		CC		
<i>Phalaropus lobatus</i>	Red-necked Phalarope	X				
<i>Phalaropus fulicaria</i>	Red Phalarope	X				
<i>Stercorarius pomarinus</i>	Pomarine Jaeger					
<i>Stercorarius parasiticus</i>	Parasitic Jaeger					
<i>Larus atricilla</i>	Laughing Gull					
<i>Larus philadelphia</i>	Bonaparte's Gull	X				
<i>Larus heermanni</i>	Heermann's Gull		CC	CC		CC
<i>Larus canus</i>	Mew Gull					
<i>Larus delawarensis</i>	Ring-billed Gull	X				
<i>Larus californicus</i>	California Gull	X				
<i>Larus argentatus</i>	Herring Gull	X				
<i>Larus thayeri</i>	Thayer's Gull					
<i>Larus livens</i>	Yellow-footed Gull		CC			

<i>Larus occidentalis</i>	Western Gull					
<i>Larus glaucescens</i>	Glaucous-winged Gull					
<i>Rissa tridactyla</i>	Black-legged Kittiwake					
<i>Sterna nilotica</i>	Gull-billed Tern	FS	CC	CC		CC
<i>Sterna nilotica vanrossemi</i>	Gull-billed "Western" Tern		RC			
<i>Sterna caspia</i>	Caspian Tern	X/FS	RC			
<i>Sterna maxima</i>	Royal Tern		SS			
<i>Sterna elegans</i>	Elegant Tern	FS	CC	CC		
<i>Sterna hirundo</i>	Common Tern	X/FS				
<i>Sterna forsteri</i>	Forster's Tern	X		RC		
<i>Sterna antillarum</i>	Least Tern	X	CC			CC
<i>Sterna antillarum browni</i>	Least "California" Tern	FS	RC	RC		
<i>Sterna antillarum mexicana</i>	Least "Mexican" Tern					
<i>Sterna anaethetus</i>	Bridled Tern					CC
<i>Sterna fuscata</i>	Sooty Tern					
<i>Anous stolidus</i>	Brown Noddy					
<i>Rynchops niger</i>	Black Skimmer		CC	CC		CC
<i>Uria aalge</i>	Common Murre					
<i>Cepphus columba</i>	Pigeon Guillemot			CC		
<i>Synthliboramphus hypoleucus</i>	Xantus's Murrelet	FS	CC	CC		
<i>Synthliboramphus hypoleucus scrippsi</i>	Xantus's "Scripp's" Murrelet					
<i>Synthliboramphus hypoleucus hypoleucus</i>	Xantus's "White-faced" Murrelet					
<i>Synthliboramphus craveri</i>	Craveri's Murrelet		CC	CC		
<i>Ptychoramphus aleuticus</i>	Cassin's Auklet	FS	RC			
<i>Fratercula cirrhata</i>	Tufted Puffin			RC		
<i>Columba livia</i>	Rock Pigeon					
<i>Columba flavirostris</i>	Red-billed Pigeon		RC			RC
<i>Columba fasciata</i>	Band-tailed Pigeon	X/FS	CC	CC	CC	
<i>Columba fasciata monilis</i>	Band-tailed "Coastal" Pigeon					

<i>Columba fasciata fasciata</i>	Band-tailed "Interior" Pigeon					
<i>Columba fasciata vioscae</i>	Band-tailed "Sierra de la Laguna" Pigeon		SS			
<i>Streptopelia decaocto</i>	Eurasian Collared-Dove					
<i>Streptopelia chinensis</i>	Spotted Dove					
<i>Zenaida asiatica</i>	White-winged Dove	X	RC			
<i>Zenaida macroura</i>	Mourning Dove	X/FS				
<i>Columbina inca</i>	Inca Dove					
<i>Columbina passerina</i>	Common Ground-Dove	X	RC	RC	RC	
<i>Columbina talpacoti</i>	Ruddy Ground-Dove					
<i>Leptotila verreauxi</i>	White-tipped Dove					
<i>Geotrygon montana</i>	Ruddy Quail-Dove					
<i>Aratinga holochlora</i>	Green Parakeet					CC
<i>Aratinga holochlora brewsteri</i>	Green "Cuchujaqui" Parakeet					RC
<i>Aratinga canicularis</i>	Orange-fronted Parakeet					CC
<i>Ara militaris</i>	Military Macaw				CC	CC
<i>Rhynchopsitta pachyrhyncha</i>	Thick-billed Parrot	X			CC	
<i>Forpus cyanopygius</i>	Mexican Parrotlet					CC
<i>Amazona albifrons</i>	White-fronted Parrot		RC			
<i>Amazona finschi</i>	Lilac-crowned Parrot				CC	CC
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	FS	RC			
<i>Coccyzus americanus occidentalis</i>	Yellow-billed "Western" Cuckoo	X	RC	RC	RC	RC
<i>Coccyzus minor</i>	Mangrove Cuckoo					CC
<i>Piaya cayana</i>	Squirrel Cuckoo					
<i>Morococcyx erythropygus</i>	Lesser Ground-Cuckoo					CC
<i>Geococcyx velox</i>	Lesser Roadrunner					
<i>Geococcyx californianus</i>	Greater Roadrunner		SS			
<i>Crotophaga sulcirostris</i>	Groove-billed Ani					
<i>Tyto alba</i>	Barn Owl		RC		SS	
<i>Otus flammeolus</i>	Flammulated Owl	X	CC	CC	CC	

<i>Otus kennicottii</i>	Western Screech-Owl	X	RC		RC	
<i>Otus trichopsis</i>	Whiskered Screech-Owl	X			CC	
<i>Otus guatemalae</i>	Vermiculated Screech-Owl					RC
<i>Bubo virginianus</i>	Great Horned Owl					
<i>Glaucidium gnoma</i>	Northern Pygmy-Owl	X	RC		RC	
<i>Glaucidium gnoma californicum</i>	Northern "California" Pygmy-Owl					
<i>Glaucidium gnoma gnoma</i>	Northern "Mountain" Pygmy-Owl					
<i>Glaucidium gnoma hoskinsii</i>	Northern "Cape" Pygmy-Owl					
<i>Glaucidium palmarum</i>	Colima Pygmy-Owl					
<i>Glaucidium brasilianum</i>	Ferruginous Pygmy-Owl	FS				
<i>Glaucidium brasilianum cactorum</i>	Ferruginous "Cactus" Pygmy-Owl	X	RC			
<i>Micrathene whitneyi</i>	Elf Owl	X	CC		CC	CC
<i>Athene cunicularia</i>	Burrowing Owl	X/FS	RC		RC	
<i>Ciccaba virgata</i>	Mottled Owl					RC
<i>Strix occidentalis</i>	Spotted Owl			CC	CC	
<i>Strix occidentalis lucida</i>	Spotted "Mexican" Owl	X				
<i>Strix occidentalis occidentalis</i>	Spotted "California" Owl					
<i>Strix varia</i>	Barred Owl				RC	
<i>Asio otus</i>	Long-eared Owl	X	RC	RC	RC	
<i>Asio stygius</i>	Stygian Owl					
<i>Asio flammeus</i>	Short-eared Owl	X/FS	CC	CC	CC	CC
<i>Aegolius acadicus</i>	Northern Saw-whet Owl	X/FS			RC	
<i>Chordeiles acutipennis</i>	Lesser Nighthawk	X				
<i>Chordeiles minor</i>	Common Nighthawk	X				
<i>Nyctidromus albigollis</i>	Common Pauraque					
<i>Phalaenoptilus nuttallii</i>	Common Poorwill	X			RC	
<i>Nyctiphrynus mcleodii</i>	Eared Poorwill				CC	CC
<i>Caprimulgus ridgwayi</i>	Buff-collared Nightjar	X	RC			RC
<i>Caprimulgus vociferus</i>	Whip-poor-will	X			SS	

Caprimulgus vociferus arizonae	“Stephen’s” Whip-poor-will				RC	
Nyctibius jamaicensis	Northern Potoo					
Cypseloides niger	Black Swift			CC	CC	
Streptoprocne rutila	Chestnut-collared Swift					
Streptoprocne semicollaris	White-naped Swift				CC	CC
Chaetura pelagica	Chimney Swift					
Chaetura vauxi	Vaux’s Swift	X				
Aeronautes saxatalis	White-throated Swift	X	CC	CC	CC	
Chlorostilbon auriceps	Golden-crowned Emerald					CC
Hylocharis leucotis	White-eared Hummingbird	X				
Hylocharis xantusii	Xantus’s Hummingbird		SS			
Amazilia beryllina	Berylline Hummingbird	X				
Amazilia rutila	Cinnamon Hummingbird					SS
Amazilia violiceps	Violet-crowned Hummingbird	X			RC	RC
Lampornis clemenciae	Blue-throated Hummingbird	X			RC	
Eugenes fulgens	Magnificent Hummingbird	X			RC	
Heliomaster constantii	Plain-capped Starthroat					SS
Tilmatura dupontii	Sparkling-tailed Hummingbird				CC	CC
Calothorax lucifer	Lucifer Hummingbird	X			RC	
Archilochus alexandri	Black-chinned Hummingbird	X				
Calypte anna	Anna’s Hummingbird	X				
Calypte costae	Costa’s Hummingbird	X	CC	CC	CC	CC
Stellula calliope	Calliope Hummingbird	X				
Atthis heloisa	Bumblebee Hummingbird				CC	
Selasphorus platycercus	Broad-tailed Hummingbird	X			RC	
Selasphorus rufus	Rufous Hummingbird	X		CC		
Selasphorus sasin	Allen’s Hummingbird	X		CC		
Trogon citreolus	Citreoline Trogon					CC
Trogon mexicanus	Mountain Trogon				RC	RC

Trogon elegans	Elegant Trogon	X			CC	CC
Euptilotis neoxenus	Eared Quetzal				CC	
Momotus mexicanus	Russet-crowned Motmot					
Ceryle torquata	Ringed Kingfisher					
Ceryle alcyon	Belted Kingfisher	X				
Chloroceryle amazona	Amazon Kingfisher					
Chloroceryle americana	Green Kingfisher	X				
Melanerpes lewis	Lewis's Woodpecker	X	CC	CC	CC	
Melanerpes chrysogenys	Golden-cheeked Woodpecker					
Melanerpes uropygialis	Gila Woodpecker		RC		RC	SS
Sphyrapicus thyroideus	Williamson's Sapsucker					
Sphyrapicus varius	Yellow-bellied Sapsucker	X/FS				
Sphyrapicus nuchalis	Red-naped Sapsucker	X				
Sphyrapicus ruber	Red-breasted Sapsucker					
Picoides scalaris	Ladder-backed Woodpecker		RC			
Picoides nuttallii	Nuttall's Woodpecker			CC		
Picoides pubescens	Downy Woodpecker	X				
Picoides villosus	Hairy Woodpecker					
Picoides arizonae	Arizona Woodpecker	X			CC	
Picoides albolarvatus	White-headed Woodpecker			CC		
Picoides dorsalis	American Three-toed Woodpecker	X				
Piculus auricularis	Gray-crowned Woodpecker				CC	CC
Colaptes auratus	Northern Flicker	X				
Colaptes chrysoides	Gilded Flicker	FS	RC			
Dryocopus lineatus	Lineated Woodpecker					
Campephilus guatemalensis	Pale-billed Woodpecker					CC
Campephilus imperialis	Imperial Woodpecker				CC	
Xiphorhynchus flavigaster	Ivory-billed Woodcreeper				RC	RC
Lepidocolaptes leucogaster	White-striped Woodcreeper				CC	

<i>Camptostoma imberbe</i>	Northern Beardless-Tyrannulet	X			RC	RC
<i>Mitrephanes phaeocercus</i>	Tufted Flycatcher				RC	RC
<i>Contopus cooperi</i>	Olive-sided Flycatcher	X/FS		CC	CC	
<i>Contopus pertinax</i>	Greater Pewee	X			SS	
<i>Contopus sordidulus</i>	Western Wood-Pewee	X				
<i>Empidonax traillii</i>	Willow Flycatcher	X	CC	CC	CC	CC
<i>Empidonax traillii extimus</i>	Willow "Southwestern" Flycatcher	X	RC	RC	RC	
<i>Empidonax albigularis</i>	White-throated Flycatcher				SS	
<i>Empidonax minimus</i>	Least Flycatcher					
<i>Empidonax hammondi</i>	Hammond's Flycatcher	X				
<i>Empidonax wrightii</i>	Gray Flycatcher	X				
<i>Empidonax oberholseri</i>	Dusky Flycatcher	X				
<i>Empidonax affinis</i>	Pine Flycatcher				RC	
<i>Empidonax difficilis</i>	Pacific-slope Flycatcher	X				
<i>Empidonax occidentalis</i>	Cordilleran Flycatcher	X			RC	RC
<i>Empidonax fulvifrons</i>	Buff-breasted Flycatcher	X/FS			SS	
<i>Sayornis nigricans</i>	Black Phoebe	X		SS		
<i>Sayornis saya</i>	Say's Phoebe	X	SS			
<i>Pyrocephalus rubinus</i>	Vermilion Flycatcher	X				
<i>Attila spadiceus</i>	Bright-rumped Attila				RC	RC
<i>Myiarchus tuberculifer</i>	Dusky-capped Flycatcher	X			SS	
<i>Myiarchus cinerascens</i>	Ash-throated Flycatcher	X	RC			
<i>Myiarchus nuttingi</i>	Nutting's Flycatcher		RC			RC
<i>Myiarchus tyrannulus</i>	Brown-crested Flycatcher	X				RC
<i>Deltarhynchus flammulatus</i>	Flammulated Flycatcher					CC
<i>Pitangus sulphuratus</i>	Great Kiskadee					
<i>Megarynchus pitangua</i>	Boat-billed Flycatcher					
<i>Myiozetetes similis</i>	Social Flycatcher					
<i>Myiodynastes luteiventris</i>	Sulphur-bellied Flycatcher	X	RC		RC	RC



<i>Tyrannus melancholicus</i>	Tropical Kingbird	X				
<i>Tyrannus vociferans</i>	Cassin's Kingbird	X			RC	
<i>Tyrannus crassirostris</i>	Thick-billed Kingbird	X	CC		CC	CC
<i>Tyrannus verticalis</i>	Western Kingbird	X				
<i>Pachyramphus major</i>	Gray-collared Becard				CC	CC
<i>Pachyramphus aglaiae</i>	Rose-throated Becard	X	RC			RC
<i>Tityra semifasciata</i>	Masked Tityra					
<i>Lanius ludovicianus</i>	Loggerhead Shrike	X/FS	RC	RC	RC	SS
<i>Lanius ludovicianus mearnsi</i>	Loggerhead "San Clemente" Shrike			RC		
<i>Lanius excubitor</i>	Northern Shrike	X				
<i>Vireo pallens</i>	Mangrove Vireo		CC			CC
<i>Vireo bellii</i>	Bell's Vireo		CC	CC	CC	CC
<i>Vireo bellii arizonae</i>	Bell's "Arizona" Vireo	X				
<i>Vireo bellii pusillus</i>	Bell's "Least" Vireo			RC		
<i>Vireo atricapillus</i>	Black-capped Vireo					CC
<i>Vireo vicinior</i>	Gray Vireo	X/FS	CC	CC	CC	
<i>Vireo plumbeous</i>	Plumbeous Vireo	X			SS	
<i>Vireo cassinii</i>	Cassin's Vireo	X		SS		
<i>Vireo huttoni</i>	Hutton's Vireo					
<i>Vireo hypochryseus</i>	Golden Vireo					CC
<i>Vireo gilvus</i>	Warbling Vireo	X			RC	
<i>Vireo gilvus swainsoni</i>	Warbling "Western" Vireo					
<i>Vireo flavoviridis</i>	Yellow-green Vireo					RC
<i>Cyanocitta stelleri</i>	Steller's Jay	X				
<i>Calocitta coliei</i>	Black-throated Magpie-Jay					CC
<i>Cyanocorax dicyi</i>	Tufted Jay				CC	
<i>Cyanocorax beecheii</i>	Purplish-backed Jay					CC
<i>Aphelocoma insularis</i>	Island Scrub-Jay			CC		
<i>Aphelocoma californica</i>	Western Scrub-Jay			SS		

<i>Aphelocoma ultramarina</i>	Mexican Jay	X			SS	
<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay		CC	CC	CC	
<i>Nucifraga columbiana</i>	Clark's Nutcracker	X				
<i>Pica nuttalli</i>	Yellow-billed Magpie			CC		
<i>Corvus brachyrhynchos</i>	American Crow	X				
<i>Corvus sinaloae</i>	Sinaloa Crow					
<i>Corvus cryptoleucus</i>	Chihuahuan Raven	X				
<i>Corvus corax</i>	Common Raven	X				
<i>Eremophila alpestris</i>	Horned Lark	X				
<i>Progne subis</i>	Purple Martin					
<i>Progne subis arboricola</i>	Purple "Woods" Martin	X				
<i>Progne subis hesperia</i>	Purple "Arizona" Martin	X	RC			
<i>Progne sinaloae</i>	Sinaloa Martin				CC	
<i>Progne chalybea</i>	Gray-breasted Martin					
<i>Tachycineta bicolor</i>	Tree Swallow	X				
<i>Tachycineta albilinea</i>	Mangrove Swallow					
<i>Tachycineta thalassina</i>	Violet-green Swallow	X			SS	
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	X	SS			
<i>Riparia riparia</i>	Bank Swallow	X				
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	X				
<i>Hirundo rustica</i>	Barn Swallow	X				
<i>Poecile gambelii</i>	Mountain Chickadee	X				
<i>Poecile sclateri</i>	Mexican Chickadee	X			RC	
<i>Poecile rufescens</i>	Chestnut-backed Chickadee					
<i>Baeolophus wollweberi</i>	Bridled Titmouse	X	RC		SS	
<i>Baeolophus inornatus</i>	Oak Titmouse		CC	CC		
<i>Baeolophus ridgwayi</i>	Juniper Titmouse				SS	
<i>Auriparus flaviceps</i>	Verdin		RC			
<i>Psaltiriparus minimus</i>	Bushtit			RC		

<i>Sitta canadensis</i>	Red-breasted Nuthatch					
<i>Sitta carolinensis</i>	White-breasted Nuthatch					
<i>Sitta pygmaea</i>	Pygmy Nuthatch				SS	
<i>Certhia americana</i>	Brown Creeper	X				
<i>Campylorhynchus gularis</i>	Spotted Wren				SS	
<i>Campylorhynchus brunneicapillus</i>	Cactus Wren	X	RC	RC		
<i>Campylorhynchus brunneicapillus couesi</i>	Cactus "San Diego" Wren			RC		
<i>Campylorhynchus brunneicapillus affinis</i> group	Cactus "Baja California group" Wren					
<i>Salpinctes obsoletus</i>	Rock Wren	X	RC	SS		
<i>Catherpes mexicanus</i>	Canyon Wren				SS	
<i>Thryothorus sinaloa</i>	Sinaloa Wren					RC
<i>Thryothorus felix</i>	Happy Wren					RC
<i>Thryomanes bewickii</i>	Bewick's Wren			SS		
<i>Troglodytes aedon</i>	House Wren	X				
<i>Troglodytes aedon brunneicollis</i>	House "Brown-throated" Wren					
<i>Troglodytes troglodytes</i>	Winter Wren	X				
<i>Cistothorus platensis</i>	Sedge Wren	FS				
<i>Cistothorus palustris</i>	Marsh Wren	X	RC	RC		
<i>Cinclus mexicanus</i>	American Dipper	X			RC	
<i>Regulus satrapa</i>	Golden-crowned Kinglet	X				
<i>Regulus calendula</i>	Ruby-crowned Kinglet	X	SS	SS		
<i>Poliophtila caerulea</i>	Blue-gray Gnatcatcher	X				
<i>Poliophtila californica</i>	California Gnatcatcher		CC	CC		
<i>Poliophtila melanura</i>	Black-tailed Gnatcatcher		SS			
<i>Poliophtila nigriceps</i>	Black-capped Gnatcatcher	X	CC			CC
<i>Sialia sialis</i>	Eastern Bluebird					
<i>Sialia sialis fulva</i>	Eastern "Azure" Bluebird	X				
<i>Sialia mexicana</i>	Western Bluebird	X			SS	
<i>Sialia currucoides</i>	Mountain Bluebird	X				

<i>Myadestes townsendi</i>	Townsend's Solitaire	X				
<i>Myadestes occidentalis</i>	Brown-backed Solitaire				CC	CC
<i>Catharus aurantiirostris</i>	Orange-billed Nightingale-Thrush					
<i>Catharus occidentalis</i>	Russet Nightingale-Thrush				RC	
<i>Catharus ustulatus</i>	Swainson's Thrush	X				
<i>Catharus guttatus</i>	Hermit Thrush	X				
<i>Turdus assimilis</i>	White-throated Robin				RC	RC
<i>Turdus rufopalliat</i>	Rufous-backed Robin	X				SS
<i>Turdus migratorius</i>	American Robin	X				
<i>Turdus migratorius confinis</i>	American "San Lucas" Robin		RC			
<i>Ixoreus naevius</i>	Varied Thrush					
<i>Ridgwayia pinicola</i>	Aztec Thrush				CC	
<i>Chamaea fasciata</i>	Wrentit			CC		
<i>Dumetella carolinensis</i>	Gray Catbird	X				
<i>Mimus polyglottos</i>	Northern Mockingbird	X				
<i>Oreoscoptes montanus</i>	Sage Thrasher	X				
<i>Toxostoma cinereum</i>	Gray Thrasher		SS			
<i>Toxostoma bendirei</i>	Bendire's Thrasher	X/FS	CC		CC	CC
<i>Toxostoma curvirostre</i>	Curve-billed Thrasher		SS			SS
<i>Toxostoma redivivum</i>	California Thrasher			CC		
<i>Toxostoma crissale</i>	Crissal Thrasher	X	RC		SS	
<i>Toxostoma lecontei</i>	Le Conte's Thrasher	X	CC			
<i>Toxostoma lecontei lecontei</i>	Le Conte's "Northern" Thrasher					
<i>Toxostoma lecontei arenicola</i>	Le Conte's "Vizcaino" Thrasher					
<i>Melanotis caerulescens</i>	Blue Mockingbird					RC
<i>Sturnus vulgaris</i>	European Starling					
<i>Anthus rubescens</i>	American Pipit	X				
<i>Anthus spragueii</i>	Sprague's Pipit	X/FS	CC		CC	
<i>Bombicilla cedrorum</i>	Cedar Waxwing	X				

<i>Ptilonys cinereus</i>	Gray Silky-flycatcher				CC	
<i>Phainopepla nitens</i>	Phainopepla	X	RC		RC	
<i>Peucedramus taeniatus</i>	Olive Warbler	X			SS	
<i>Vermivora celata</i>	Orange-crowned Warbler	X				
<i>Vermivora ruficapilla</i>	Nashville Warbler	X				
<i>Vermivora virginiae</i>	Virginia's Warbler	X	CC		CC	
<i>Vermivora crissalis</i>	Colima Warbler				CC	
<i>Vermivora luciae</i>	Lucy's Warbler	X	CC		CC	CC
<i>Parula pitiayumi</i>	Tropical Parula					RC
<i>Dendroica petechia</i>	Yellow Warbler	X				
<i>Dendroica petechia bryanti</i>	Yellow "Mangrove" Warbler		RC			
<i>Dendroica petechia sonorana</i>	Yellow "Sonoran" Warbler		RC		RC	
<i>Parula superciliosa</i>	Crescent-chested Warbler				SS	
<i>Dendroica coronata</i>	Yellow-rumped Warbler	X				
<i>Dendroica nigrescens</i>	Black-throated Gray Warbler	X				
<i>Dendroica townsendi</i>	Townsend's Warbler	X				
<i>Dendroica occidentalis</i>	Hermit Warbler	X				
<i>Dendroica graciae</i>	Grace's Warbler	X			CC	
<i>Dendroica palmarum</i>	Palm Warbler					
<i>Mniotilta varia</i>	Black-and-white Warbler	X				
<i>Setophaga ruticilla</i>	American Redstart	X				
<i>Seiurus noveboracensis</i>	Northern Waterthrush	X				
<i>Seiurus motacilla</i>	Louisiana Waterthrush					
<i>Oporornis tolmiei</i>	MacGillivray's Warbler	X				
<i>Geothlypis trichas</i>	Common Yellowthroat	X				
<i>Geothlypis beldingi</i>	Belding's Yellowthroat		CC			
<i>Geothlypis poliocephala</i>	Gray-crowned Yellowthroat					
<i>Wilsonia pusilla</i>	Wilson's Warbler	X				
<i>Cardellina rubrifrons</i>	Red-faced Warbler	X			CC	

<i>Ergaticus ruber</i>	Red Warbler				CC	
<i>Myioborus pictus</i>	Painted Redstart	X			RC	RC
<i>Myioborus miniatus</i>	Slate-throated Redstart					RC
<i>Euthlypis lachrymosa</i>	Fan-tailed Warbler				CC	CC
<i>Basileuterus rufifrons</i>	Rufous-capped Warbler	X				
<i>Basileuterus belli</i>	Golden-browed Warbler				CC	
<i>Icteria virens</i>	Yellow-breasted Chat	X				
<i>Granatellus venustus</i>	Red-breasted Chat					CC
<i>Rhodinocichla rosea</i>	Rosy Thrush-Tanager					CC
<i>Piranga flava</i>	Hepatic Tanager	X			SS	
<i>Piranga rubra</i>	Summer Tanager	X			RC	
<i>Piranga rubra cooperi</i>	Summer "Cooper's" Tanager					
<i>Piranga ludoviciana</i>	Western Tanager	X				
<i>Piranga bidentata</i>	Flame-colored Tanager	X			RC	RC
<i>Piranga erythrocephala</i>	Red-headed Tanager				CC	CC
<i>Volatinia jacarina</i>	Blue-black Grassquit					
<i>Sporophila torqueola</i>	White-collared Seedeater					
<i>Atlapetes pileatus</i>	Rufous-capped Brush-Finch				SS	
<i>Buarremon virenticeps</i>	Green-striped Brush-Finch				CC	
<i>Arremonops rufivirgatus</i>	Olive Sparrow					RC
<i>Melospiza kieneri</i>	Rusty-crowned Ground-Sparrow					RC
<i>Pipilo chlorurus</i>	Green-tailed Towhee	X				
<i>Pipilo maculatus</i>	Spotted Towhee	X			SS	
<i>Pipilo erythrophthalmus</i>	Eastern Towhee					
<i>Pipilo fuscus</i>	Canyon Towhee				RC	
<i>Pipilo crissalis</i>	California Towhee			SS		
<i>Pipilo crissalis eremophilus</i>	California "Inyo" Towhee		RC			
<i>Pipilo aberti</i>	Abert's Towhee	X	CC		CC	
<i>Aimophila carpalis</i>	Rufous-winged Sparrow	X	CC		CC	CC

<i>Aimophila cassinii</i>	Cassin's Sparrow	X			RC	
<i>Aimophila botterii</i>	Botteri's Sparrow	X			RC	RC
<i>Aimophila botterii botterii</i>	Botteri's "Arizona" Sparrow					
<i>Aimophila ruficeps</i>	Rufous-crowned Sparrow	X	RC	RC	RC	
<i>Aimophila ruficeps sanctorum</i>	Rufous-crowned "Todos Santos" Sparrow			RC		
<i>Aimophila rufescens</i>	Rusty Sparrow					
<i>Aimophila quinquestrata</i>	Five-striped Sparrow	X	CC		CC	CC
<i>Oriturus superciliosus</i>	Striped Sparrow				CC	
<i>Spizella passerina</i>	Chipping Sparrow	X				
<i>Spizella pallida</i>	Clay-colored Sparrow	X				
<i>Spizella breweri</i>	Brewer's Sparrow	X	CC		CC	
<i>Spizella breweri taverneri</i>	Brewer's "Timberline" Sparrow					
<i>Spizella pusilla</i>	Field Sparrow					
<i>Spizella atrogularis</i>	Black-chinned Sparrow	X	CC	CC	CC	
<i>Poocetes gramineus</i>	Vesper Sparrow	X				
<i>Chondestes grammacus</i>	Lark Sparrow	X				
<i>Amphispiza bilineata</i>	Black-throated Sparrow	X	SS		SS	
<i>Amphispiza belli</i>	Sage Sparrow	X		RC		
<i>Amphispiza belli belli</i>	Sage "Bell's" Sparrow			RC		
<i>Amphispiza belli cinerea</i>	Sage "Baja" Sparrow					
<i>Calamospiza melanocorys</i>	Lark Bunting	X	RC			
<i>Passerculus sandwichensis</i>	Savannah Sparrow	X		RC		
<i>Passerculus sandwichensis beldingi</i>	Savannah "Belding's" Sparrow			RC		
<i>Passerculus sandwichensis rostratus</i>	Savannah "Large-billed" Sparrow		RC			
<i>Passerculus sandwichensis sanctorum</i>	Savannah "Islas San Benito" Sparrow					
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	X/FS		RC	RC	
<i>Ammodramus savannarum amolegus</i>	Grasshopper "Arizona" Sparrow	X			RC	

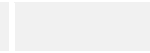
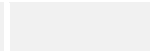
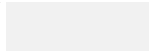
<i>Ammodramus bairdii</i>	Baird's Sparrow	X/FS	CC		CC	
<i>Xenospiza baileyi</i>	Sierra Madre Sparrow				CC	
<i>Passerella iliaca</i>	Fox Sparrow	X				
<i>Melospiza melodia</i>	Song Sparrow	X				RC
<i>Melospiza lincolnii</i>	Lincoln's Sparrow	X				
<i>Melospiza georgiana</i>	Swamp Sparrow	X				
<i>Zonotrichia albicollis</i>	White-throated Sparrow	X				
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	X	SS			
<i>Zonotrichia atricapilla</i>	Golden-crowned Sparrow	X				
<i>Junco hyemalis</i>	Dark-eyed Junco	X				
<i>Junco hyemalis insularis</i>	Dark-eyed "Guadalupe" Junco					
<i>Junco phaeonotus</i>	Yellow-eyed Junco	X			SS	
<i>Junco phaeonotus bairdi</i>	Yellow-eyed "Baird's" Junco		CC			
<i>Calcarius mccownii</i>	McCown's Longspur	X	CC			
<i>Calcarius ornatus</i>	Chestnut-collared Longspur	X	RC			
<i>Saltator coerulescens</i>	Grayish Saltator					SS
<i>Cardinalis cardinalis</i>	Northern Cardinal					
<i>Cardinalis sinuatus</i>	Pyrrhuloxia				RC	
<i>Pheucticus chrysopheplus</i>	Yellow Grosbeak				CC	CC
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak	X				
<i>Cyanocompsa parellina</i>	Blue Bunting					
<i>Guiraca caerulea</i>	Blue Grosbeak	X				
<i>Passerina amoena</i>	Lazuli Bunting	X				
<i>Passerina cyanea</i>	Indigo Bunting	X				
<i>Passerina versicolor</i>	Varied Bunting	X	CC		CC	CC
<i>Passerina ciris</i>	Painted Bunting	X/FS				
<i>Spiza americana</i>	Dickcissel	X				CC
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	X				
<i>Agelaius tricolor</i>	Tricolored Blackbird	FS		CC		



<i>Sturnella magna</i>	Eastern Meadowlark	X/FS				
<i>Sturnella magna lilianae</i>	Eastern "Lilian's" Meadowlark				RC	
<i>Sturnella neglecta</i>	Western Meadowlark	X	RC	RC	RC	
<i>Xanthocephalus xanthocephalus</i>	Yellow-headed Blackbird	X	SS			
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird	X				
<i>Quiscalus mexicanus</i>	Great-tailed Grackle	X				
<i>Molothrus aeneus</i>	Bronzed Cowbird	X				
<i>Molothrus ater</i>	Brown-headed Cowbird	X				
<i>Icterus wagleri</i>	Black-vented Oriole					
<i>Icterus spurius</i>	Orchard Oriole					
<i>Icterus cucullatus</i>	Hooded Oriole	X			SS	
<i>Icterus pustulatus</i>	Streak-backed Oriole					SS
<i>Icterus bullockii</i>	Bullock's Oriole	X	RC			
<i>Icterus parisorum</i>	Scott's Oriole	X			SS	
<i>Cacicus melanicterus</i>	Yellow-winged Cacique					SS
<i>Euphonia affinis</i>	Scrub Euphonia					
<i>Euphonia elegantissima</i>	Elegant Euphonia				CC	CC
<i>Pinicola enucleator</i>	Pine Grosbeak	X				
<i>Carpodacus purpureus</i>	Purple Finch	X				
<i>Carpodacus cassinii</i>	Cassin's Finch	X				
<i>Carpodacus mexicanus</i>	House Finch	X				
<i>Loxia curvirostra</i>	Red Crossbill					
<i>Carduelis pinus</i>	Pine Siskin					
<i>Carduelis notata</i>	Black-headed Siskin					
<i>Carduelis psaltria</i>	Lesser Goldfinch	X	RC			
<i>Carduelis lawrencei</i>	Lawrence's Goldfinch	X	CC	CC		
<i>Carduelis tristis</i>	American Goldfinch					
<i>Coccothraustes abeillei</i>	Hooded Grosbeak				CC	
<i>Coccothraustes vespertinus</i>	Evening Grosbeak	X				

Passer domesticus

House Sparrow



**APPENDIX B.** List of endemic and near-endemic species and subspecies found in the Sonoran Joint Venture area.

The following lists show the species and subspecies that are endemic (>98% of world population) or near-endemic (90-98% of world population) to the SJV area.

**Resident Endemic Species/Subspecies**

Guadalupe Storm-Petrel \*  
Brown Booby (western hemisphere)  
Guadalupe Caracara  
Clapper “Yuma” Rail  
Clapper “Light-footed” Rail  
Yellow-footed Gull  
Northern “Cape” Pygmy-Owl  
Xantus’s Hummingbird  
Gilded Flicker  
Island Scrub-Jay  
California Gnatcatcher  
American “San Lucas” Robin  
Gray Thrasher  
Belding’s Yellowthroat  
Rufous-crowned “Todos Santos” Sparrow  
Savannah “Large-billed” Sparrow  
Rufous-winged Sparrow  
Grasshopper “Arizona” Sparrow  
Dark-eyed “Guadalupe” Junco  
Yellow-eyed “Baird’s” Junco

**Breeding Endemic Species**

Black Storm-Petrel  
Least Storm-Petrel  
Black-vented Shearwater  
Elegant Tern  
Xantus’s Murrelet  
Craveri’s Murrelet

**Near Endemic-Breeding Species**

Heermann’s Gull

**Near Endemic-Resident Species**

Elegant Quail  
Gila Woodpecker

Purplish-backed Jay  
Sinaloa Crow  
Le Conte's Thrasher  
Abert's Towhee  
Five-striped Sparrow

**Near-Endemic Wintering Species**

Gray Vireo  
Lawrence's Goldfinch

**Near-Endemic Breeding Subspecies**

Yellow "Sonoran" Warbler

\*possibly extinct

## **APPENDIX C.** Priority Waterfowl from the North American Waterfowl Management Plan Update.

The following is a comparison of waterfowl priorities from the North American Waterfowl Management Plan Update (“Model-base Strategic Planning and Evaluation for Waterfowl Conservation”) and the SJV Plan designations of Concern Level. If a species has a “Highest”, “High”, “Moderately High”, or “Moderate” Continental Priority in the Waterfowl Update, it is referred to as a “Continental Concern” species in this Plan unless a species has a “Low” Regional Importance designation (Table A). If a species has a “Mod High” or higher designation in either the “Need for Conservation” or “Importance” column in the waterfowl strategy, it is considered a “Regional Concern” species in this Plan (see Table xxx for the decision matrix). For comparison, all “Moderately High” Continental Priority species are shown even if the Need for Conservation is less than Mod High. “WCR” are Waterfowl Conservation Regions found in the Waterfowl Update and are equal to BCRs used in this Plan except that WCRs 32, 33, and 34 are only the U. S. portions, WCR 101 is all of the Baja Peninsula, and WCR 102 is Sonora, Sinaloa, and Nayarit. Additional Continental Concern or Regional Concern species may be added to the SJV Concern lists through the use of methods especially the Mexican Species Assessment Process.

### Waterfowl Priorities and SJV Plan designations.

WCR	Species	Continental Priority	Regional Breeding Importance	Breeding Need for Conservation	Regional Non-Breeding Importance	Non-breeding Need for Conservation	SJV Plan Designation
32	<b>Brant-Pacific</b>	<b>High</b>			<b>High</b>	<b>Highest</b>	<b>CC</b>
	<b>Lesser Scaup</b>	<b>High</b>			<b>Mod High</b>	<b>High</b>	<b>CC</b>
	<b>Mallard</b>	<b>High</b>	<b>Mod Low</b>	<b>Moderate</b>	<b>Mod Low</b>	<b>Moderate</b>	<b>CC</b>
	<b>Northern Pintail</b>	<b>High</b>			<b>Mod High</b>	<b>High</b>	<b>CC</b>
	American Wigeon	Mod High			Mod High	Mod High	RC
	Black Scoter	Mod High			Mod High	Mod High	RC
	Canvasback	Mod High			Mod Low	Mod Low	
	Common Goldeneye	Mod High			Mod Low	Mod Low	
	Surf Scoter	Mod High			Mod High	Mod High	RC
	White-winged Scoter	Mod High			Mod High	Mod High	RC
	Bufflehead	Moderate			Mod High	Mod High	RC
	Greater Scaup	Moderate			Mod High	Mod High	RC
	Northern Shoveler	Moderate			Mod High	Mod High	RC

33	Trumpeter Swan – Rocky Mountain	High			Mod Low	Moderate	*
	<b>Mallard</b>	<b>High</b>			<b>Mod Low</b>	<b>Moderate</b>	<b>CC</b>
	<b>Northern Pintail</b>	<b>High</b>			<b>Mod Low</b>	<b>Moderate</b>	<b>CC</b>
	American Wigeon	Mod High			Mod Low	Mod Low	
	Blue-winged/Cinnamon Teal	Mod High			Mod Low	Mod Low	
	Canvasback	Mod High			Mod Low	Mod Low	
	Common Goldeneye	Mod High			Mod Low	Mod Low	
	Redhead	Mod High			Mod Low	Mod Low	
34	<b>Mallard</b>	<b>High</b>			<b>Mod Low</b>	<b>Moderate</b>	<b>CC</b>
	<b>Northern Pintail</b>	<b>High</b>			<b>Mod Low</b>	<b>Moderate</b>	<b>CC</b>
	Canvasback	Mod High			Mod Low	Mod Low	
101	<b>Brant – Pacific</b>	<b>High</b>			<b>High</b>	<b>Highest</b>	<b>CC</b>
	<b>Northern Pintail</b>	<b>High</b>			<b>Mod High</b>	<b>High</b>	<b>CC</b>
	<b>Lesser Scaup</b>	<b>High</b>			<b>Mod Low</b>	<b>Moderate</b>	<b>CC</b>
	American Wigeon	Mod High			Mod Low	Mod Low	
	Blue-winged Teal	Mod High			Mod Low	Mod Low	
	Canvasback	Mod High			Mod Low	Mod Low	
	Cinnamon Teal	Mod High			Mod Low	Mod Low	
	Redhead	Mod High			Mod High	Mod High	RC
	Gadwall	Moderate			Mod High	Mod High	RC
102	<b>Brant – Pacific</b>	<b>High</b>			<b>Mod High</b>	<b>High</b>	<b>CC</b>
	Lesser Snow Goose – Western Central Flyway	Moderate			Mod High	High	RC
	<b>Mallard</b>	<b>High</b>			<b>Mod High</b>	<b>High</b>	<b>CC</b>
	<b>Lesser Scaup</b>	<b>High</b>			<b>Mod Low</b>	<b>Moderate</b>	<b>CC</b>
	<b>Northern Pintail</b>	<b>High</b>			<b>High</b>	<b>Highest</b>	<b>CC</b>
	American Wigeon	Mod High			Mod Low	Mod Low	

	Blue-winged Teal	Mod High			Mod High	Mod High	RC
	Canvasback	Mod High			Mod High	Mod High	RC
	Cinnamon Teal	Mod High			Mod High	Mod High	RC
	Masked Duck	Mod High	Mod Low	Mod Low	Mod Low	Mod Low	
	Redhead	Mod High			Mod High	Mod High	RC
	Gadwall	Moderate			Mod High	Mod High	RC
	Green-winged Teal	Moderate			Mod High	Mod High	RC
	Northern Shoveler	Moderate			Mod High	Mod High	RC
	Ring-necked Duck	Moderate			Mod High	Mod High	RC
	Fulvous Whistling-Duck	Mod Low	High	High	Mod High	Moderate	RC

\*The Mod Low designation in this WCR might be a mistake. They are not listed in Small 1994, Monson and Phillips 1981, or Massey and Zembal 2002. There is only one record of Trumpeter Swan in Arizona (Mitchell 1994). There may be some confusion with Tundra Swans, which are found every winter along the Lower Colorado River.

The following table was used to make decisions for assignment to Continental or Regional Concern levels for the SJV Plan.

Continental Priority/ Regional Importance or Need*	High/Highest	Moderately High	Moderate	Moderately Low	Low
WMP - High	CC**	CC	CC	-	-
WMP - Moderately High	CC	RC	RC	-	-
WMP- Moderate	RC	RC	-	-	-
WMP - Moderately Low	RC	-	-	-	-
WMP-Low	-	-	-	-	-

\* From the North American Waterfowl Management Plan Update 2004.

\*\* SJV Plan Continental (CC) or Regional (RC) Concern level.

**APPENDIX D.** Priority Shorebirds from the U.S. Shorebird Conservation Plan

By agreement with the U.S. Shorebird National Coordinator, United States Shorebird Conservation Plan (USSCP) designations of “Highly Imperiled-Global and North American” and “High Concern-Global” are considered equal to the SJV Plan’s Continental Concern (CC) designation (Table 2). The designation “High Concern” at the North American level in the USSCP is equivalent to Regional Concern (RC) for the SJV Plan. Additional shorebirds may be added or elevated in their concern level based on assessments of SJV partners.

Comparison of USSCP priority designations and SJV Plan designation.

Species	USSCP Designation	USSCP Level	SJV Regions*	SJV Designation
Mountain Plover	Highly Imperiled	Global	AB/CCM/MH	CC
Long-billed Curlew	Highly Imperiled	Global	AB/CCM/MH	CC
Snowy Plover	Highly Imperiled	North American	AB/CCM/MH/PL	CC
Black Oystercatcher	High Concern	Global	AB/CCM	CC
Solitary Sandpiper	High Concern	Global	AB/CCM/PL	CC
Marbled Godwit	High Concern	Global	AB/CCM/PL	CC
Black Turnstone	High Concern	Global	AB/CCM/PL	CC
Surfbird	High Concern	Global	AB/CCM/PL	CC
Western Sandpiper	High Concern	Global	AB/CCM/PL	CC
Short-billed Dowitcher	High Concern	Global	AB/CCM/PL	CC
Wilson’s Phalarope	High Concern	Global	CCM	CC
Wilson’s Plover	High Concern	North American	AB/PL	CC (RC in Shorebird plan)
American Oystercatcher	High Concern	North American	AB/PL	CC (RC in Shorebird plan)
Whimbrel	High Concern	North American	AB/CH/PL	CC (RC in Shorebird plan)
Ruddy Turnstone	High Concern	North American	AB/CH/PL	RC
Red Knot	High Concern	North American	AB/CH	CC (RC in Shorebird plan)
Sanderling	High Concern	North American	AB/CH/PL	CC (RC in Shorebird plan)
Dunlin	High Concern	North American	AB/CH/PL	CC (RC in Shorebird plan)

\*AB=Arid Borderlands, CCM=Californian Coasts and Mountains, MH=Mexican Highlands, PL=Pacific Lowlands, corresponding to the chapters in this Plan.



## **APPENDIX E.** Priority Colonial Waterbirds from the North American Waterbird Conservation Plan

By agreement with the U.S. National Waterbird Coordinator, “Highly Imperiled” and “High” from the North American Waterbird Conservation Plan (NAWCP) would be equivalent to Continental Concern and Regional Concern, respectively, in this Plan. Table 3 below presents a comparison of the NAWCP concern species and the Plan Concern Species by Regional Chapter (SJV designations are coded: N=not present; ND=no designation, CC=Continental Concern, RC=Regional Concern). The lower portion of the table shows species that are a SJV Concern Species but not considered by NAWCP to be at that level.

Colonial Waterbird Priorities and SJV Plan designations.

<b>Species</b>	<b>NAWCP designation</b>	<b>Equivalent NAWCP designation</b>	<b>SJV designation by Region - AB*</b>	<b>CCM</b>	<b>MH</b>	<b>PL</b>
Black Skimmer	High- 2a	RC	CC/RC	CC	N	CC
Gull-billed Tern	High -2a	RC	CC/RC	CC	N	CC/RC
Least Tern	High -2a	RC	CC	CC/RC	N	CC
Bridled Tern	High -2a	RC	N	N	N	ND
Bare-throated Tiger-Heron	High -na	RC	N	N	N	ND
Wood Stork	High -2a	RC	RC	ND	N	N
Magnificent Frigatebird	High -2a	RC	CC/RC	N	N	CC
Pink-footed Shearwater	High -2a	RC	CC/RC	N	N	CC
Black-vented Shearwater	High -2a	RC	CC/RC	CC/RC	N	CC
Laysan Albatross	High -2a	RC	CC	N	N	N
Least Storm-Petrel	High -2a	RC	CC/RC	CC	N	CC
Black Storm-Petrel	High -2a	RC	CC/RC	CC/RC	N	CC
Ashy Storm-Petrel	Highly Imperiled -1a	CC	CC/RC	CC/RC	N	N
Xantus's Murrelet	High -2a	RC	CC/RC	CC/RC	N	N
Craveri's Murrelet	High -2a	RC	CC/RC	CC	N	N
Red-billed Tropicbird	High -2a	RC	CC/RC	N	N	CC/RC
Blue-footed Booby	High -2a	RC	CC	ND	N	CC
Masked Booby	High -2a	RC	CC	CC	N	N
Red-footed Booby	High -2a	RC	N	CC	N	N
Brown Booby	High -2a	RC	CC	CC	N	CC

Brandt's Cormorant	High -2a	RC	CC	CC	N	CC
Pelagic Cormorant	High -2a	RC	CC	CC	N	CC
Tricolored Heron	High -2a	RC	RC	ND	N	ND
Little Blue Heron	High -2a	RC	CC	N	N	CC
Snowy Egret	High -2a	RC	ND	ND	N	ND
Black-footed Albatross	Highly Imperiled -1a	CC	CC/RC	CC	N	N
Reddish Egret	3c		CC/RC	CC	N	CC/RC
Flesh-footed Shearwater	4a		CC	CC	N	N
Buller's Shearwater	5		CC	CC	N	N
Sooty Shearwater	3b		CC/RC	CC	N	CC
Short-tailed Shearwater	5		CC	CC	N	CC
Leach's Storm-Petrel	4b		RC	ND	N	N
Wedge-rumped Storm-Petrel	4a		CC	N	N	ND
Guadalupe Storm-Petrel	Not on list		CC/RC	N	N	N
Brown Pelican	3c		ND	RC	N	ND
Double-crested Cormorant	5		RC	RC	ND	ND
Heermann's Gull	3b		CC	ND	N	CC
Yellow-footed Gull	3b		CC	N	N	N
Caspian Tern	4b		CC/RC	ND	N	ND
Elegant Tern	3b		CC/RC	CC	N	N
Common Tern	4b		RC	ND	N	N
Forster's Tern	3b		ND	RC	N	ND
Pigeon Guillemot	3b		N	CC	N	N
Cassin's Auklet	3c		RC	N	N	N

\*AB=Arid Borderlands, CCM=Californian Coasts and Mountains, MH=Mexican Highlands, PL=Pacific Lowlands, corresponding to the Chapters in this Plan.

**APPENDIX F.** List of plant names used in this Plan.

Acacia (*Acacia* spp.)  
Agave (*Agave* spp.)  
Alligator Juniper (*Juniperus deppeana*)  
Allthorn (*Koeberlinia spinosa*)  
Ambrosia (such as ragweed)  
Apache Pine (*Pinus engelmannii*)  
Arizona Cypress (*Cupressus arizonica*)  
Arizona Sycamore (*Plantanus wrightii*)  
Arizona Walnut (*Juglans major*)  
Arizona White oak (*Quercus arizonica*)  
Artemisia (sagebrush)  
Ash (*Fraxinus* spp.)  
*Baccharis* spp. (such as seep willow and desert broom)  
Black Willow (*Salix nigra*)  
Blue Grama (*Bouteloua gracilis*)  
Buffel grass (*Cenchrus ciliaris*)  
Bulrushes (*Scirpus* spp.)  
*Bursera* spp. (such as copal, torote)  
California Blackberry (*Rubus vitifolius*)  
California Black Oak (*Quercus kelloggii*)  
California Sagebrush (*Artemesia californica*)  
Canyon Live Oak (*Quercus chrysolepis*)  
Cattail (*Typha domingensis*)  
Ceanothus (*Ceanothus* spp.)  
Chamisa-Chamiso de vera prieta (*Ademostoma fasciculatum*)  
Chihuahuan Oak (*Quercus chihuahuensis*)  
Chihuahuan Pine (*Pinus leiophylla* var. *chihuahuana*)  
Coast Live Oak (*Quercus agrifolia*)  
Cholla (*Opuntia* spp.)  
Copal/Torote (*Bursera* spp.)  
Cordgrass (*Spartina foliosa*)  
Cottonwood (*Populus fremontii*)  
Creosote (*Larrea tridentata*)  
Cypress (*Cupressus* spp.)  
Desert Hackberry (*Celtis pallida*)  
Desert Willow (*Chilopsis linearis*)  
Douglas Fir (*Pseudotsuga menziesii*)  
Eelgrass (*Zostera marina*)  
Elephant Tree (*Bursura microphylla*)  
Emory Oak (*Q. emoryi*)

Engelmann Spruce (*Picea engelmannii*)  
Eucalyptus (*Eucalyptus* spp.)  
Fremont Cottonwood (*Populus fremontii*)  
Glassworts (*Salicornia* spp.)  
Goodding Willow (*Salix gooddingii*)  
Grama (*Bouteloua* spp.)  
Hecho/Cardón (*Pachycereus pecten-aboriginum*)  
Incense Cedar (*Libocedrus decurrens*)  
Ironwood (*Olneya tesota*)  
Jeffrey Pine (*Pinus jeffreyi*)  
Joshua Tree (*Yucca brevifolia*)  
Juniper (*Juniperus* spp.)  
Lehman's Lovegrass (*Eragrostis lehmanniana*)  
Lemonade Sumac (*Rhus integrifolia*)  
Lemon Berry (*Malosma laurina*)  
Mangroves (Red, white, and black respectively *Rhizophora mangle*, *Laguncularia racemosa*, and *Avicennia germinans*)  
Manzanita (*Arctostaphylos* spp.)  
Mauto (*Lysiloma divaricata*)  
Mexican Blue Oak (*Q. oblongifolia*)  
Mexican Elder (*Sambucus mexicana*)  
Mesquite (*Prosopis* spp.)  
Mistletoe (*Phoradendron californicum*)  
*Muhlenbergia* spp. (such as Bush Muhly)  
Oaks (*Quercus* spp.)  
Ocotillo (*Fouquieria splendens*)  
Olive Trees (*Elaeagnus angustifolia*)  
Opuntia (*Opuntia* spp.)  
Palm trees (such as *Sabal* spp., *Washingtonia* spp.)  
Palo verde (*Cercidium* spp.)  
Parry Buckeye (*Aesculus parryi*)  
Pecan (*Carya illinoensis*)  
Pickleweed (*Allenrolfea occidentalis*)  
Pinyon Pine (*Pinus cembroides*)  
Pochote/Kapok (*Ceiba acuminata*)  
Poison Oak (*Rhus diversiloba*)  
Ponderosa Pine (*Pinus ponderosa*)  
Quaking Aspen (*Populus tremuloides*)  
Rushes (*Juncus* spp.)  
Sacaton (*Sporobolus* spp.)  
Sages (*Salvia* spp.)  
Saguaro (*Carnegiea gigantea*)

Saltbush (*Atriplex* spp.)  
Salt cedar (*Tamarix chinensis*)  
Saltgrass (*Distichilis* spp.)  
Seagrass (*Zostera marina* or *Zostera* spp.)  
Smoketree (*Psorothamnus spinosa*)  
Soaptree yucca (*Yucca elata*)  
Sugar Pine (*Pinus lambertiana*)  
Sumac (*Rhus* spp.)  
Sycamore (*Plantanus racemosa*)  
Tarbush (*Flourensia cernua*)  
Three-awns (*Aristada* spp.)  
Velvet Ash (*Fraxinus pennsylvanica*)  
White Alder (*Alnus rhombifolia*)  
White Fir (*Abies concolor*)  
Whitethorn Acacia (*Acacia neovernicosa*)  
Willow (*Salix* spp.)  
Yucca (*Yucca* spp.)

**APPENDIX G.** List of acronyms used in this Plan.

ABBA - Arizona Breeding Bird Atlas project (Corman and Wise-Gervais 2005)  
AICA - Área de Importancia de las Conservación de las Aves  
BBS - Breeding Bird Survey  
BCR - Bird Conservation Region  
BMP - Best Management Practices  
CCM - Californian Coasts and Mountains authors  
CDRI - Chihuahuan Desert Research Institute  
CICESE - Centro de Investigación Científica y de Educación Superior de Ensenada  
COBI - Comunidad y Biodiversidad, AC  
CONAFOR - Comisión Nacional Forestal  
CONANP - Comisión Nacional de Áreas Naturales Protegidas  
GECI - Grupo de Ecología y Conservación de Islas  
H&W - Howell and Webb 1995  
IBA - Important Bird Area  
INE - National Institute of Ecology  
ISLA - Conservación de Territorio Isular  
MX-PIF - Mexican Species Assessment Process  
NABCI - North American Bird Conservation Initiative  
NAWCA - North American Wetlands Conservation Act  
NAWCP - North American Waterbird Conservation Plan  
NAWMP - North American Waterfowl Management Plan  
OHV - Off-road Vehicles  
PIF - Partners in Flight  
PS - Pacific Lowlands authors from Pronatura-Sinaloa  
RD - Relative Density  
R&M - Russell and Monson 1998  
SEMARNAT - Secretaría de Medio Ambiente y Recursos Naturales  
SJV - Sonoran Joint Venture  
TDF - Tropical Deciduous Forest  
USSCP - U.S. Shorebird Conservation Plan  
WCR - Waterfowl Conservation Regions