

Chiricahua Mountains Annotated Bird Checklist

Scheduled for Publication Early This Year

Southeastern Arizona may be the premiere inland bird watching locality for the United States, and is considered by many ornithologists and birders to be excelled by few other places in the world, but only in recent years has the popularity of the area become apparent. Portal, a small community on the eastern fringe of the range caters to birding groups and dispenses information on local attractions. The U.S. Forest Service provides local information, maps and a checklist (1989) of birds in the Chiricahuas and operates recreational facilities throughout the range that are heavily used by birdwatchers from around the world.

Many come seeking to add to life lists and search for specialty birds from this region, with the most sought after birds being those from the Sierra Madre Occidental of northern Mexico. Examples of Madrean birds that regularly summer and breed in the Chiricahuas include: the Elegant Trogon (*Trogon elegans*), Sulphur-bellied Flycatcher (*Myiodynastes luteiventris*), Red-faced Warbler (*Cardellina rubrifrons*), and Painted Redstart (*Myioborus pictus*), to name a few of the more colorful species. Numerous other "Mexican species" are permanent residents, reaching their northernmost limits in the extreme southwestern United States. These include the Strickland's Woodpecker (*Picoides stricklandi*), Gray-breasted (Mexican) Jay (*Aphelocoma ultramarina*), and Mexican Chickadee (*Parus sclateri*).

For the past three years, scientists at the Cooperative Park Studies Unit at the University of Arizona (CPSU/UA) have conducted an inventory of the Chiricahuas. The method for collecting information and determining species annotated accounts was designed by R. Roy Johnson. Computerized information management and compilation of observation and breeding data were coordinated by Michael R. Kunzmann. The related project for the vegetation and habitat classification system was contributed by Peter S. Bennett.

Since the establishment of the American Museum of Natural History's Southwestern Research Station (SWRS) near Portal in 1955, researchers have come in increasing numbers to explore the biological riches of the Chiricahuas. This research has greatly expanded the knowledge of the mountain's flora and fauna and resulted in the compilation and publication of field checklists for Chiricahua NM as well as for the rest of the range. Previous to the work of the CPSU/UA, however, no annotated checklist has been available for this area. The CPSU/UA project gathered records from the past 20 years as well as new data and provides information, verification, and references on approximately 350 avian species, found in this area.

The area studied covers the entire Chiricahua Mountain range from Ft. Bowie NHS south toward the city of Douglas, encompassing approximately 700 square miles of public land including: Chiricahua NM, Ft. Bowie, Coronado NF, and some privately owned lands. Lower elevation limits on the eastern side were set at 4,200' and for the western side at 5,000'. Data and photographs were gathered from all major habitat types (see Fig. 1) from the desert floor to montane meadows, and to Engelmann spruce forests at the summit of Chiricahua Peak (elev. 9759'). Plant community structure is illustrated with photographs.

During the avian and floristic studies conducted by CPSU/UA scientists, the mountain island diversity theory was examined as well as the biological diversity of the range. The high avian species richness, and floral and vegetative diversity is largely due to the ecotonal nature of the region. Lowland diversity is derived from the convergence of species from the Chihuahuan Desert to the southeast and plains grasslands to the northeast, with those from the Sonoran Desert to the west. Species richness for montane forest and woodland diversity derives from Rocky Mountain vegetation to the north blending with vegetation from Mexico's Sierra Madrean vegetation to the south.

Publication Components and Information Management

Prominent ornithologists and others who have studied the Chiricahua Mountains were invited to submit essays that provide the reader with a broader perspective of the cultural and natural history of the area and birds found here. Dr. Jerram Brown, SUN, the top authority on Gray-breasted Jays (formerly Mexican Jay), has authored an essay on the value of long-term observations and the stability of the jay population during his 20 year study in the Chiricahuas. Alden Hayes, a resident of Portal and author of several Chaco Culture NHP reports, described the area's cul-

Classical Checklist Categories	Breedings Birds	Brown, Lowe & Pase Categories	Merriam's Life Zones
Forest Spruce-Fir Forest Spruce-Fir-Aspen	Mexican Chickadee Red Crossbill Golden-crowned Kinglet Steller's Jay Olive Warbler Red-faced Warbler Flammulated Owl Grace's Warbler Hepatic Tanager Greater Pewee	Madrean Subalpine Forest 121.5	Hudsonian Zone
Pine-Fir		Madrean Mixed Conifer 122.61	Canadian Zone Boreal Zone
Ponderosa Pine		Madrean Pine Series 122.62	Transition Zone
Woodland Pine-Oak Woodland Pinyon-Juniper	Magnificent Hummingbird Strickland's Woodpecker Whiskered Screech-Owl Gray-breasted Jay Montezuma's Quail Black-throated Gray Warbler	Madrean Oak-Pine Series 123.32	
Oak Woodland		Madrean Encinal (Oak) Series 123.31	
Brush Interior Chaparral	Bushtit Black-chinned Sparrow Scrub Jay Crisal Thrasher Poor-will	Scrubland Interior Chap 133.3	Upper Sonoran Zone
Desert Chihuahuan Semidesert Grassland	Scaled Quail Cassin's Sparrow Chihuahuan Raven Verdin	Semidesert Grassland 143.1	
Chihuahuan Desertscrub	Cactus Wren White-winged Dove Greater Roadrunner	Chihuahuan Desertscrub 153.2	Lower Sonoran Zone
Montane Meadows Montane Meadow	Yellow-eyed Junco American Robin Chipping Sparrow Broad-tailed Hummingbird	Madrean Sub-Alpine Grassland 141.6 Madrean Montane Grassland 142.6	Hudsonian Zone Canadian Zone and Transition Zone
Wetlands/ Riparian Areas Mixed Deciduous Canyon	Elegant Trogon Blue-throated Hummingbird Sulfur-bellied Flycatcher Painted Redstart Bridled Titmouse	Mixed Broadleaf Series 223.2211 Sycamore/Ash/Pine	Higher Zones
Mixed Deciduous Wash	Dusky-capped Flycatcher Lucy's Warbler	Mixed Broadleaf Series 223.2212	
Desert Arroyo (Wash)	Ladder-backed Woodpecker Black-chinned Hummingbird Black-tailed Gnatcatcher	Xeroriparian Series 233.23	Upper Sonoran and Lower Sonoran Zone
Water Areas Madrean Marsh Lakes/Ponds/Stock Tanks	Black Phoebe Vermilion Flycatcher	Madrean Marshland N A 243.5	Most Zones
Cultural Rural Areas	Hooded Oriole Bronzed Cowbird	N A	Lower Zones

Figure 1. Chiricahua habitat classifications.

tural and political history. Robert Morse, a local Portal retired engineer and ornithological enthusiast, suggests birding tips and etiquette.

Dr. Steve Russell, professor of ornithology at U/AZ, contributed an essay on mountain island diversity. He also was co-author of "Birds in Southeastern Arizona" with William Davis. Drs. Noel and Helen Snyder discuss the restoration efforts for the extirpated Thick-billed Parrot (*Rhynchopsitta pachyrhyncha*) in the Chiricahuas begun by the USFWS in the mid-1980s. Drs. Walter and Sally Spofford, retired Cornell Lab of Ornithology researchers and permanent residents of Portal, provided professional advice in their essay on observations, keeping good records, and on specialty birds in the area. The Spoffords and Robert Morse were especially effective in contributing critical information and observation records that have greatly assisted in producing an accurate checklist.

GIS technology has largely replaced paper and mylar maps, traditionally used to spatially locate natural resources. Computerized databases linked to GIS workstations retrieve and map resource information more efficiently than traditional methods. With an eye towards the future, a standardized database has been developed to collect locality information on all 350 plus species of birds in our study area. The program, written in Foxbase Pro, operates in an IBM/DOS 3.31 environment with at least 1.5 megabytes of hard disk storage.

By standardizing the information collected, different researchers can enter data in a consistent, defined format which is searchable by key fields, species, locality, habitat, date, and numerous other combinations. The program is linked with two related databases, one that references all 941 species of North American birds (including Hawaii) and another database referencing typical habitats found throughout the range. Future efforts will be directed toward linking UTM locality data with GIS, so species distribution maps can be produced directly.

Maps produced by Lois Kain, U/AZ, depict the study area boundary and show the Chiricahuas in relation to surrounding ranges involved in our mountain island diversity studies. The reader's understanding of the mountain's cultural history is enhanced by the adaptation of a Cochise County map from the 1890s. A schematic cross section of the range shows spatial relationships of vegetation types discussed by Peter Bennett in relation to avian distribution.

BERYLLINE HUMMINGBIRD (*Amazilia beryllina*) Erratic summer resident throughout range. Nesting: SWRS, 1976 (unsuccessful, Monson & Phillips 1981); Chiricahua Nat. Mon., Natural Bridge trailhead, 18 August to 15 September 1984 was the 3rd U.S. Nesting Record and 3rd for Arizona (Amer. Birds 39:86-90, 1985). Additional sightings: Cave Creek Canyon 30 June to 1 August 1970 (H. Snyder et al.); SWRS 26 June 1981 (Pimm et. al.); Portal 9 June 1983 (P.S. Boyd); South Fork 29 June 1984 (B. Zimmer et al.); Silver Creek Spring 2 July 1984 (R. Morse); Rustler Park trail near Barfoot crossing 18 July 1984 (D. Horn); SWRS 5 August 1986 (T. Mack). Photographs, nest collected 29 September 1984.

Figure 2. Sample of species annotated account.

Species	National Geographic	Peterson Guide (1989 edition)	Golden Guide
White-throated Swift	252	246	184
Broad-tailed Hummingbird	260	218	184
White-eared Hummingbird	256	218	190
Berylline Hummingbird	254	220	N/A
Violet-crowned Hummingbird	256	220	190
Blue-throated Hummingbird	256	218	190
Magnificent Hummingbird	256	218	190
Plain-capped Starthroat	256	220	N/A
Lucifer Hummingbird	254	220	190
Black-chinned Hummingbird	258	220	188
Anna's Hummingbird	258	216	186
Costa's Hummingbird	258	220	188
Calliope Hummingbird	260	220	186
Broad-tailed Hummingbird	260	216	186
Rufous Hummingbird	260	216	188
Allen's Hummingbird	260	216	188
Elegant Trogon	232	206	192
Eared Trogon	232	206	192
Belted Kingfisher	262	206	192
Lewis' Woodpecker	266	222	198
Red-headed Woodpecker	266	222	198
Acorn Woodpecker	266	222	198
Gila Woodpecker	264	228	196
Red-naped Sapsucker	268	226	N/A
Williamson's Sapsucker	268	226	198
Ladder-backed Woodpecker	272	228	196
Downy Woodpecker	270	224	200
Hairy Woodpecker	270	224	200
Stickland's Woodpecker	272	228	200
Northern Flicker	264	226	194

Figure 3. Sample of Chiricahua Mountains cross-referenced checklist.

Species occurring in the Chiricahuas are discussed in the species account portion of the checklist (Fig. 2). Abundance and status information for preparing species accounts was determined by analyzing observation records from CPSU/UA and other field data, Chiricahua NM and Ft. Bowie NHS wildlife observation records, USFS "Birds of the Chiricahua Mountains" field checklist (1989), SWRS records, and museum specimens from various collections, especially the University of Arizona. More than 100 articles from journals and other publications provided additional avifaunal data. A list of all species recorded from the range is keyed to pages from the three most widely used field guides (Fig. 3) for the benefit of birders visiting the Chiricahuas.

Summary

The Chiricahua annotated checklist has been patterned after two annotated checklists previously produced by CPSU/UA biologists, one for Grand Canyon NP and the other for Organ Pipe Cactus NM. The coverage of this checklist has been expanded to make it more usable for both resource managers and visitors. It is scheduled to be published early in 1991 as a CPSU/UA Technical Report, after which it will be submitted to Southwest Parks and Monument Association for publication as a sale item at area visitor centers.

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