

Fires took a toll on forests in the Mazatzal, Pinaleno, and White Mountain ranges. Quenching monsoon rains arrived late and were subpar in many parts of the state, providing little relief from the prolonged drought. Southbound marsh-nesting migrants appeared early, and a wave of juvenile Brown Pelicans appeared in late June and wandered the state through July. Ruddy Ground-Doves nested for the second time in the state's history, Wilson's Warbler possibly for the first, and a distinctive subspecies of Yellow Warbler was added to the state's avifauna.

Abbreviations: A.V.S.T.P. (Avra Valley S.T.P.), B.A.N.W.R. (Buenos Aires N.W.R.), H.R.P. (Hassayampa River Preserve, Wickensburg), L.C.R.V. (Lower Colorado R. valley), N.I.R. (Navajo Indian Reservation), S.C.L. (San Carlos L.), S.P.R. (San Pedro R.), Sweetwater (Sweetwater Wetlands, Tucson).

GREBES THROUGH SPOONBILL

Marking the return of water to the ponds at Kino Springs, a Least Grebe surfaced there 8–15 Jul (M. Hysell, JLD, ph. MMS). It was the first to be documented in Santa Cruz since 1976. The Tucson Least Grebes submerged again: the Sam Lena Park bird was last reported 1 Jun (MMS) and the Sweetwater bird 8 Jul (m.ob.) A few Eared Grebes summered across s. Arizona at Casa Grande S.T.P., S.C.L., and Willcox, but there was no indication of nesting (DJ, DS, MMS). Single Western Grebes at Willcox 9–11 Jun (GH) and Maricopa 11 Jul+ (DJ) and 2 Clark's Grebes at Willcox 2 Jun (GH) were away from expected summering areas. At S.C.L., Clark's Grebes accounted for the majority of up to 300 summering *Aechmophorus* (KK et al.).

At S.C.L., 7 Neotropic Cormorants provided a first for *Graham* 8–17 Jul (KK, DS); this species continues to spread. One was seen 5 Jul at Gillespie Dam (TC), where seldom reported. Double-crested Cormorants nested again at Greer, with 12 nests occupied 29 Jul (MMS et al.). Sixty birds at Crescent L. 30 Jul (MMS et al.) reflected the recent growth of the White Mt. summer cormorant population. An imm. Magnificent Frigatebird over L. Havasu City 6 Jul (M. Pierce, *fide* TC) was a casual visitor from the Gulf of California.

There are surprisingly few reports of Tricolored Heron from the L.C.R.V., so one at Yuma 9–13 Jul (ph. JC, HD) was notable. Elsewhere, they put in a good showing, with individuals at Green Valley 22 Jun (L. Halsey), A.V.S.T.P. 9 Jul+ (BH, MPo, ph. MMS), and Paloma 30 Jul (BG). Reddish Egret numbers were impressive, with one at A.V.S.T.P. 28 Jun–6 Jul (R. Freeman, ph. MMS), up to 2 at Paloma 2 Jul+ (ph. BG et

Arizona



al.), and singles at Willcox 8 Jul (*fide* D. Jasper), Dateland 9 Jul+ (JC, ph. HD), Tucson 9–22 Jul (ph. MMS), Maricopa 11 Jul (+DJ), and B.A.N.W.R. 18 Jul (A. Whitman)—nearly equaling the state's total prior to 2000. At the Paloma rookery, up to 200 Cattle Egrets including fledglings were present 5 Jul (TC). Causing a stir was an ad. apparent Glossy Ibis x White-faced Ibis hybrid at Willcox 18 Jul (ph. JLD, J. Yeger). There remains only one accepted record of Glossy Ibis for Arizona. Also exciting were 3 juv. Roseate Spoonbills in nw. Tucson 22–23 Jul (R. Welter, ph. MMS), less-than-annual wanderers from the Gulf of California.

DUCKS THROUGH TROGON

Among the ducks of summer were a few standouts: a female Wood Duck at A.V.S.T.P. 8 May+ (m.ob.), a Bufflehead at Willcox 11–22 Jun (MPo, ph. MMS), and the first Arizona summer record of Surf Scoter, a second-year male at Casa Grande S.T.P. 11 Jul–3 Aug (DJ, ph. DS). The only White-

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SA The phenomenon of the season was a deluge of **Brown Pelicans** across the state, beginning in mid-Jun. Unprecedented numbers appeared from Yuma to Safford to the Grand Canyon. High counts included **50** at Topock Marsh 29 Jun, **33** on L. Havasu 30 Jun (both K. Blair), **24** brought to the Arizona–Sonora Desert Museum, Tucson (M. Powell-McConnell), **15** over the Yuma Marine Corps Air Station 30 Jun (*vide* JC), **13** brought to Liberty Wildlife in Phoenix (A. Peyton), and **10** at Dateland 7 Jul (*vide* JC). By late Jul, most of the birds had disappeared. While it is difficult to assemble a precise total, it is likely that over 300 pelicans were involved, more than double the previous high. Such invasions typically result from nesting success followed by food shortages in the Gulf of California. The absence of adults among grounded birds suggests that inexperience is also a factor.

Emblematic of the widespread summer invasion of Brown Pelican in the Southwest, this juvenile hitched a ride with a commercial raft trip in the Grand Canyon near Grapevine Rapid, Arizona on 24 June 2004. At least three pelicans were observed in the Grand Canyon, where they are casual. Photograph by Frank Talbott.

tailed Kite reported was in the Amado area 19 & 27 Jul (K. Groschuf, J. Raffin). A Mississippi Kite wandered southward along the upper S.P.R. to Hereford 20 Jun (JB). Apparently still resident, a Red-shouldered Hawk was reported from H.R.P. 5 Jun (JP). In the Chiricahua Mts., 2 **Short-tailed Hawks** continued over Barfoot Park through the period (m.ob.). In the Huachuca Mts., a single Short-tailed was seen 9 May+ over Miller and Carr Canyons (B. Feltner, †D. vander Pluym, CDB), where they have appeared sporadically since 1999. A juv. Virginia Rail at Sweetwater 22 Jun (ph. MMS) was away from known nesting areas. A lone Sandhill Crane summered again at Luna L. (SH).

Early southbound shorebird highlights included a Black-bellied Plover at S.C.L. 24 Jul (RW et al.), a Semipalmated Plover at Dateland 9 Jul (JC, HD), a Lesser Yellowlegs at Willcox 22 Jun (DS), a Marbled Godwit there 18 Jun (JM), and a Wilson's Snipe at Green Valley S.T.P. 28 Jul (DP). A Snowy Plover at S.C.L. 8–17 Jul (MMS, DS) was unexpected in midsummer; another was at Willcox 9 Jun (GH). Whimbrels are casual away from the L.C.R.V. Early singles were at Paloma 2 Jul (ph. BG) and S.C.L. 8 Jul (ph. DS). Single Semipalmated Sandpipers were reported (without details) from Willcox 18 Jul (TC) and Green Valley S.T.P. 28 Jul (DP). A Short-billed Dowitcher at Gilbert Water Ranch

11 Jul was thought to be of the subspecies *caurinus* (†P. Moulton et al.). Although *caurinus* is not unexpected, only *hendersoni* has been physically documented in the state. At Willcox, 2 *hendersoni* were studied 22 Jul (RW); an ad. there 27 Jul was not identified to subspecies (MMS, KK). Two Long-billed Dowitchers at Cow Springs L. 17 Jun were casual for the date (CL). Although southbound Wilson's Phalaropes are expected by mid- to late Jun, early numbers were higher than usual this summer, notably at Willcox, with up to 25 there 15 Jun (JM), 80 on 25 Jun (MPo, MMS) and 100+ on 29 Jun (J. Higgins, DS).

Inland-nesting larids also appeared early. Small numbers of Franklin's Gulls were at Willcox 15 Jun–6 Jul (m.ob.) and at S.C.L. 3 Jul (KK). At Round Rock L., 9 ad. California Gulls on 25 Jun were exceptionally early migrants (CL). Singles summered at Willcox 18 Jun+ (MPo, ph. MMS) and S.C.L. 3–24 Jul (KK et al.). A Caspian Tern at Big L. 2 Jun (SH) and 2 at Sunrise L. 9 Jun (ph. SH) were apparently firsts for the White Mt. region. Elsewhere in Apache, one at Round Rock L. 25 Jun was exceptional in midsummer. At Patagonia L., one was present on the odd date of 20 Jun (S. Kennedy). Early Forster's Terns included 2 at Cholla L. 23 Jun (J. Videle), singles at Willcox 28 Jun and 24 Jul (GH, P. Salomon), 9 there 15 Jul (GH), and singles at S.C.L. 3, 8, 17 & 24 Jul

(KK, DS, RW). Late migrant Least Terns were at Willcox 9 & 18 Jun (*vide* GH; ph. MMS) and A.V.S.T.P. 11 Jun (BH). Early Black Terns were one at Willcox 27 Jun (GW), 7 at A.V.S.T.P. 28 Jun (BH), and one at Sunrise L. 9 Jul (M. Kehl).

Inching northward, 3 White-winged Doves were in Overgaard 6 Jun (K. Penland), and one was in Cameron 12 Jun (CL); they have become regular in Springerville (GC, DR). A few Ruddy Ground-Doves in the w. Phoenix valley since spring were suspected of nesting. On 9 Jul, a male was seen carrying nesting material (RMJ). There is only one prior Arizona nesting record, from H.R.P. At Red Rock, up to 2 were seen through the summer (m.ob.). Casual in the state, a Groove-billed Ani was in an Arivaca yard 16 Jun (vt. B. & C. Sparks). Buff-collared Nighthawks remained at Oro Blanco Mine through the period. A single late-arriving and apparently unpaired Buff-collared called at Proctor Rd., Madera Canyon 6–18 Jun (B. Sullivan et al., †MMS), while at Brown Canyon, B.A.N.W.R. (where access is limited), one was heard 27–28 Jul (D. Krueper). Here at the n. periphery of the nighthawk's range, the known Arizona population declined through the 1990s; an increase may be underway.

Overall hummingbird numbers remained down in se. Arizona. Among the less common hummers, up to 3 White-eared Hummingbirds were reported from Miller Canyon 13 Jun+ (T. Beatty, m.ob.), and single hybrid hummingbirds of presumed Berylline parentage were in Ash, Miller, and Ramsey Canyons (MJB, TB, MPo). Violet-crowned Hummingbirds were again present in small numbers in eastside Huachuca Mt. canyons (MJB, TB, BB, J. Hirth, MPo). At the w. edge of their range, a Violet-crowned was in Brown Canyon, B.A.N.W.R. 25 Jun (D. Krueper). Unexpected was one visiting a feeder at 2200 m in the Santa Catalina Mts. 10–11 Jul (B. Bickel). Following recent trends, Lucifer Hummingbirds summered in eastside Huachuca Mt. canyons (MJB, TB, BB), while in the Chiricahua Mts. the only Lucifer reported was a female in Paradise in early Jun (J. Lewis). Rufous Hummingbirds arrived early: single males appeared in Flagstaff 19 Jun (J. Hildebrand), Sedona 20 Jun ("Lazuli"), Eagar 25 Jun (DR), and Miller Canyon 26 Jun (TB). Southbound Allen's Hummingbirds turned up on schedule at Willow Canyon, Santa Catalina Mts. 3 Jul (RT, B. Bickel), Ramsey Canyon 9 Jul (MP), Madera Canyon (2) 12 Jul (GW), and Arivaca 13 & 27 Jul (GW).

Although not far from nesting areas in Sycamore Canyon, an Elegant Trogon observed all summer in California Gulch was

unexpected in such marginal habitat (D. Sutherland, SH, m.ob.) Another in the Patagonia Mts. s. of Harshaw 22 Jul (T. Arny) was one of very few ever reported from that range.

FLYCATCHERS THROUGH PHAINOPEPLA

A Northern Beardless-Tyrannulet at H.R.P. 2 May-13 Jun (PD) was n. and w. of its normal breeding range in the state. A number of Gray Flycatchers appeared as early fall migrants in late Jul, including one in riparian at Canyon de Chelly 16 Jul (CL), one at Oak Flat Campground 28 Jul (M. Kehl), and one along the Gila R., e. of Winkleman 29 Jul (MMS). Also very early were calling Pacific-slope Flycatchers at Sycamore Canyon, Santa Cruz: one 20 Jul (S. Hampton), and another there 28 Jul (DS et al.). Similarly, silent Pacific-slope/Cordilleran Flycatchers were found earlier than usual for migrating birds at Patagonia L. 11 Jul (SH), Sweetwater 16 Jul (RT), and Sabino Canyon 25 Jul (SF et al.). It was a good year for Buff-breasted Flycatchers in the Chiricahua Mts., with no fewer than seven pairs breeding at three different locations; the species has become more common in this range during the past 10 years (DJa et al.). Scarce anywhere on the N.I.R., Black Phoebes were found at Canyon de Chelly 11 Jun (CL) and at Tuba City 19 Jul (CL). An Ash-throated Flycatcher at Greer 30 Jul (MPo, MMS) was at an odd location and likely an early migrant. A Sulphur-bellied Flycatcher at Brown Canyon 27 Jul (D. Krueper et al.) was at the w. limit of this species' range in the United States, and possibly only the 2nd report ever from the Baboquivari Mts.

A pair of Thick-billed Kingbirds found at H.R.P. 5 Jun-1 Aug+ (JP, T. Linda, TC et al.) represented only the 2nd *Maricopa* record and the first nesting report there. An Eastern Kingbird, casual in the se. during the summer season, was reported at the San Manuel crossing of the S.P.R. 10 Jul (D. Laush). Also casual in Arizona during the summer, Scissor-tailed Flycatchers were reported at Fort Huachuca 24 Jun (S. Rottenborn) and in the San Rafael Grasslands 6 Jul (D. Brown).

Red-eyed Vireos were reported in E. Whitetail Canyon (Chiricahua Mts.) 9 Jul (RT) and in Miller Canyon 28 Jul (B. Schram et al.); this species is still considered casual in the state at any season, particularly during the middle of the summer. A Western Scrub-Jay along the Ruby Road w. of Nogales 12 Jul (JLD et al.) was at an odd location for the species in s. Arizona. American Crows were found nesting at Canyon de Chelly, a new breeding location for the species in n. Arizona (CL).

Early migrant Tree Swallows were de-

tected at a number of locations in s. Arizona during the first week of Jul, the largest concentration being 20+ at S.C.L. 8 Jul (DS, MMS). Likewise, Bank Swallows were moving southward in numbers during the first week of Jul, with a noted increase during the 2nd week (m.ob.); this movement for both species was at least two weeks earlier than usual. The pair of Black-capped Gnatcatchers at Patagonia L., present all summer, was seen nest-building for the 2nd time by 2 Jun (m.ob.); imms. were noted during Jul, but it was unclear whether the young present were from the nest found during the spring, or from the subsequent attempt. A single female was reported from near Proctor Rd. below Madera Canyon 25 Jul (K. McBride). Townsend's Solitaire is not known to breed in s. Arizona, but one singing on territory near Rustler Park, Chiricahua Mts. 6 Jun (WR) and 2 in the same mts. along Morse Canyon Trail below Johnson Peak 2 Jul (DS) suggested at least a breeding attempt this summer; there is an old published summer sight report for this species from the Chiricahuas from 11 Jul 1956 (*Birds of Arizona*).

Gray Catbirds were away from normal breeding areas in n. Arizona at Canyon de Chelly 30 Jun (CL) and at Eagar 12 Jul (DR). Bendire's Thrasher is considered a rare breeder in n. Arizona, so 6 along To Nahakaad Wash near Cameron 15 Jun (CL) were of interest. Crissal Thrashers were again noted along the Little Colorado R., w. of Cameron, where their distribution is still poorly understood (CL). Phainopeplas are normally only sporadically reported from n. Arizona; therefore several individuals at scattered locations along the Little Colorado R. near Cameron 12-17 Jun (CL) perhaps represented new breeding locations for the species.

WARBLERS THROUGH ORIOLES

A juv. Orange-crowned Warbler reported near Barfoot Park, Chiricahua Mts. 30 Jun (RW) was intriguing, as the species is not known to breed in this range; it does nest in small numbers in both the Santa Catalina and Pinaleno Mts. Lucy's Warblers were noted at several locations at higher-than-usual elevations, including Rustler Park 6 Jun (WR) and at several spots along the Little Colorado R. near Cameron (CL). Before last year, Yellow Warbler was not known to breed above the Mogollon Rim in ne. Arizona, so one singing all Jun at Canyon de Chelly (CL), 3 at Cow Springs L. 17-19 Jun (CL), and a fledgling at Keams Canyon 17 Jul (CL) suggest that this species likely breeds in proper riparian habitat at lower elevations in n. Arizona. Certainly the bird of the season was Ari-

zona's first record of a Yellow Warbler of the *erithachorides* subspecies group (often called Mangrove Warbler), a very worn individual netted and photographed near Roosevelt L. 31 Jul (P. Newall, ph. N. Banfield; *fide* E. Paxton). The closest this subspecies gets to Arizona is the mangroves along the Gulf of California in n. Sonora, Mexico, where it is considered a resident; the subspecies at this location is *rhizophorae*. The Arizona record represents only a 5th report of this complex from the United States, the others coming from s. coastal Texas. Chestnut-sided Warbler is casual at best during the summer in Arizona, so singles at Flagstaff 16 Jun (C. Holm), Madera Canyon 17 Jun (J. Scheib), and Whitlow Dam 8 Jul (JB) were all of note. A report of a singing subad. male Magnolia Warbler in the Santa Catalina Mts. 20 Jun (WR) represents one of the few Jun records for the state. A Townsend's Warbler at Chiricahua N.M. 1 Jun (JM) was likely a late migrant. A Hermit Warbler at French Joe Canyon 29 Jul (SH) was earlier than usual. Always a great find in Arizona, a Yellow-throated Warbler was at Ramsey Canyon 3 Jul (†J. Morlan); this individual was identified as the subspecies *albiflora*.

Black-and-white Warblers put in appearances at Canyon de Chelly 30 Jun (B. Marshall, *fide* CL) and at Sweetwater 25 Jul (S. Hampton). American Redstarts, casual in summer, were reported from Tucson 11 Jun (†R. Lindley), South Fork of the Little Colorado R. (a singing male where this species has nested in the past) 28 Jun (DR, GC), and Las Cienegas 20 Jul (J. Whetstone). Quite amazing were 2 Ovenbirds netted at Las Cienegas 8 Jun (J. Whetstone et al.). Hooded Warbler is almost annual in the state in Jun; this year, one male was in French Joe Canyon 17 Jun (M. Kehl) and another in Madera Canyon 2 Jul (†R. Romea). Intriguing was a singing male Wilson's Warbler at Sheep Crossing, White Mts. 2 Jun, and an ad. with 2 imms. there 26 Jul (D. Touret et al.); although this does not definitively confirm nesting in Arizona, it is certainly suggestive. Another male in willows at Greer 30 Jul (MMS, MPo) was perhaps just an early migrant. The Rufous-capped Warblers at French Joe Canyon were last reported 27 Jun (JB; with several negative reports thereafter), perhaps ending a great run for that species at this n. outpost. One was reported from Sycamore Canyon, Santa Cruz 20 Jul (S. Hampton), and 2 were found there 28 Jul (MMS, KK; ph. v.r. DS); despite the apparent resident status of this species in recent years in French Joe Canyon, it remains a rare vagrant to Arizona from Mexico.

The pair of Flame-colored Tanagers

found nesting during the spring at Madera Canyon successfully fledged 2 young and were seen through 31 Jul+ (m.ob.). A Green-tailed Towhee in a Scottsdale Yard 12 Jun (JB) was very late and represented the first Jun *Maricopa* record. A Northern Cardinal in Prescott Valley 10–15 Jun (J. McCasland) represented one of the few Prescott area reports. Rose-breasted Grosbeak reports in Arizona have increased noticeably in Jun and Jul of recent years; this year, no fewer than 18 were reported during the period, again confirming this change in relative abundance. Typically, Jun is an “off”

month for migrant Lazuli and Indigo Buntings in se. Arizona; a male Lazuli was at Madera Canyon 19 Jun (JB), while single Indigos were at Ramsey Canyon 5–6 Jun (J. Hirth) and Madera Canyon 19 Jun (JB). A male Varied Bunting at Whitlow Dam 8 Jul (JB) was n. of its usual range in s. Arizona. Late Jul brought the usual reports of Painted Buntings in se. Arizona: males were reported from upper S.P.R. 27 Jul (M. Marsden), Portal 28 & 31 Jul (DJa; C. Comeau), and Miller Canyon 31 Jul (CDB). A flyover Dickcissel, casual during the summer season, was reported at A.V.S.T.P. 24 Jun (DS).

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State of the Region

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From its high desert temperatures to its title as the second-fastest-growing state in the United States, Arizona is known for extremes. Here one can find lush riparian habitat bordered by arid grasslands, and snow-capped mountains surrounded by cactus-clad deserts. Arizona is a meeting point for several major biogeographic provinces. The Rocky Mountains from the north meet the Sierra Madre Occidental from the south; from the east, the Chihuahuan Desert blends with the Sonoran Desert from the west. This mixture of ecosystems translates into a wide range of habitats and a very diverse avifauna: 529 species of birds have been documented breeding in,



The Breeding Bird Survey is the chief source of information about bird populations in North America, particularly about passerines. According to B.B.S. data, Verdin has declined by over 85% in the desert scrub habitats surveyed over the past several decades, almost certainly because of the degradation and loss of these habitats. Few data exist on desert and grassland species in adjacent northern Mexico. Photograph by Arthur Morris/VIREO.

migrating through, or wintering in Arizona, including 10 listed as Endangered, Threatened, or Candidate through the Federal Endangered Species Act (ESA).

Within Arizona are parts of three Bird Conservation Regions: the Southern Rockies/Colorado Plateau (BCR 16) encompasses the northern and central parts of the state, where Partners in Flight Watch List species include California Condor, Lewis's Woodpecker, Pinyon Jay, and Gray Vireo; the Sonoran and Mojave Deserts (BCR 33) cover the southern and western part of the state and provide habitat to Watch List species including Bell's Vireo, Le Conte's Thrasher, Lucy's Warbler, and Abert's Towhee; the Sierra Madre Occidental (BCR 34) climbs north from Sonora into the southeastern part of the state, where you can find Watch List species such as Scaled Quail, Band-tailed Pigeon, Mexican Spotted Owl, Elegant Trogon, Arizona Woodpecker, and Red-faced and Grace's Warblers. In addition to species on the Partners in Flight Watch List, which includes those that face the greatest range-wide concerns, Arizona also provides habitat to many “stewardship species,” which merit special attention for conservation action, either

through management or long-term planning, such as Lucifer Hummingbird, Black-tailed Gnatcatcher, Black-throated Sparrow, and Scott's Oriole.

Threats to habitat in Arizona are as varied as the number of bird species that occur there. Water use is one of the most pressing issues in the state, and those working in conservation struggle to deal with the conflicts of a rapidly growing human population and the needs of birds and their habitats. Groundwater pumping deficits are status quo throughout the state, and many areas that once supported rich riparian habitat are now dry creek beds. Riparian habitats in southeastern Arizona support an amazing diversity of birds, including the largest population of Yellow-billed Cuckoos in the western United States, but water use by humans continues to increase and draw down the water table, threatening the long-term survival of these habitats and the birds that depend on them. As the needs of agriculture, recreation, and residential and industrial water users increase, birds that depend on riparian habitats, such as Gray Hawk and Southwestern Willow Flycatcher, consistently lose out.

Development is another urgent conservation issue in Arizona. As the state's population continues to grow, developers extend their reach farther out into fragile habitats. In the southern part of the state, homes, businesses, and roads now occupy large areas of what was once essential desert habitat for a variety of sensitive bird species, including Cactus Ferruginous Pygmy-Owl and Rufous-winged Sparrow. Fragmentation brought on by development further challenges birds that are dependent on large stretches of contiguous habitat for nesting, foraging, or for migratory habitat. Adding to the primary impact of habitat destruction brought on by development is the increased demand for water resources that a growing population brings.

Some habitats in Arizona evolved along with the natural fire cycle and have developed mechanisms to survive and even thrive with occasional burns. Similarly, the bird species that use these habitats have evolved along with the ecosystems. Changes to the natural fire cycle have had negative impacts on both habitats and the birds that use them. Control and alteration of fire regimes have resulted in habitat fragmentation, affecting birds such as Elf Owl. Fire control has also led to intense shrub encroachment on grasslands, negatively affecting species such as Swainson's Hawk, Sprague's Pipit, and Baird's Sparrow. Catastrophic fires, brought on by the combined pressures of timber over-harvesting, drought, and encroaching development, threaten Arizona's extensive pine forests and bird species, including Northern Goshawk, Spotted Owl, and Cordilleran Flycatcher. Other plant communities in the state are not adapted to fire and cannot tolerate burning, such as Sonoran desert uplands. Development has led to the spread of invasive non-native grasses in areas that naturally are largely bare of ground cover. As development presses on, the likelihood of fire increases. In habitats where native plants are not fire-adapted, fire-induced changes may be harmful to some bird populations.

Grazing management in all habitats is a major issue for bird populations. Overgrazing is a problem throughout the state, particularly with the drought conditions of recent years. Historic eradication of Black-tailed Prairie Dog by ranchers has negatively impacted populations of grassland birds, including Ferruginous Hawk and Burrowing Owl. In riparian areas, overgrazing has led to increased erosion, incised stream beds, decreased water quality, and removal of or change in vegetative structure necessary for many riparian bird species.

Arizona is a major migratory pathway not only for birds but for people as well. Migrants from Mexico and elsewhere in Central and South America make their way into the United States, many crossing into the country through various points in Arizona, impacting bird habitat and leaving behind trash. The largest Border Patrol station in the country was recently built in Douglas, Arizona, in the southeastern part of the state. The effects of Border Patrol activities on birds and other wildlife is little known, and it will be important to assess the consequences of the use of off-road vehicles and the powerful lights that illuminate the border area each night. This issue, in particular, drives home the point that conservation is not simply a matter of good science. In order to find solutions to the myriad issues that face bird populations in Arizona, it is critical to take into account the complex interactions of the environment with social, economic, and cultural factors in the Region.