

by Paul Hess

Riparian Recovery

Few birding experiences in the American Southwest are more depressing than seeing formerly lush, bird-filled riparian ecosystems denuded, degraded, and often destroyed by livestock grazing. In contrast, few sights have been so encouraging as the swift recovery of one of the Southwest's most important riparian ecosystems after grazing was halted. The river is Arizona's San Pedro, the only permanently undammed river left in the southwestern United States.

Vegetation and bird life were surveyed from 1986 to 1990 in the San Pedro Riparian National Conservation Area, which is 3–8 kilometers wide along a 69-kilometer stretch of the river. Cattle were removed from the area in 1987, and by 1991 the total number of individuals of all bird species detected in the surveys had more than doubled since 1986 from 103 per kilometer to 221 per kilometer, an annual average increase of 23 percent. The survey's welcome results were reported in 2003 by David Krueper, Jonathan Bart, and Terrell D. Rich (*Conservation Biology* 17:607–615).

As vegetation recovered in the absence of grazing, bird populations in the breeding season increased in every one of 13 species groups surveyed: riparian, mesquite, and Chihuahuan desert-scrub species;

open-cup and cavity nesters; understory, midstory, and upperstory species; insectivores, granivores, and omnivores; residents and neotropical migrants. The greatest increases occurred among open-cup nesters, neotropical migrants, riparian species, and insectivores, while the smallest increases were among birds of the desert-scrub. Many of these were species of high conservation priority.

Most notably, four species of concern to Partners in Flight in the Sierra Madre Occidental region increased significantly during the study period: Northern Beardless-Tyrannulet, Cassin's Kingbird,

Abert's Towhee, and Hooded Oriole. Six others (Black-chinned Hummingbird, Gila Woodpecker, Bell's Vireo, Phainopepla, Lucy's Warbler, and Botteri's Sparrow) did not. Meanwhile, five additional species of special concern identified by Hunter *et al.* in 1987 (*Western Birds* 18:10–18) as having declined or disappeared from major river systems in the Southwest since 1900 increased significantly during the study period: Vermilion Flycatcher, Brown-crested Flycatcher, Yellow Warbler, Yellow-breasted Chat, and Summer Tanager. One species listed by Hunter *et al.*, the Yellow-billed Cuckoo, did not.

Krueper and his colleagues called the speed, magnitude, and extent of the recovery "surprising". They suggested that removing cattle might similarly benefit conservation of biodiversity and species of special concern in other riparian ecosystems in the arid Southwest.



Protecting the San Pedro River from livestock grazing has resulted in significant increases in the populations of several riparian bird species. San Pedro River, Arizona; September 1993. © Rick and Nora Bowers.

Kittiwake Variation

In Roger Tory Peterson's unforgettable image, the wing tips of an adult Black-legged Kittiwake (*Rissa tridactyla*) are "solid black and cut straight across, as if they had been dipped in ink." John W. Chardine of the Canadian Wildlife Service noticed something more subtle during field trips in the 1980s to kittiwake colonies in the eastern Canadian Arctic. Kittiwakes breed-

ing in that region had white apical spots on their primaries more frequently than did the kittiwakes he was familiar with from Britain and Newfoundland. “This was clearly visible in flying birds and gave the impression of a small *Larus* gull,” Chardine reported in 2002 (*Condor* 104:687–693), and the difference prompted him to make a detailed study of geographic variation in kittiwake wing tips in regions around the Arctic.

With data obtained from field observations, photographs, and study skins, Chardine developed an index to classify (or “score”) the amounts of black and white in tips of the outer six primaries. After scoring 662 kittiwake wings (one wing per individual bird), he found that Atlantic populations averaged significantly more white and less black than did Pacific populations. Kittiwakes from the Atlantic and the Pacific could be distinguished with 98% accuracy.

A general trend toward decreasing white and increasing black appeared from Atlantic populations in Arctic Canada and west Greenland eastward around the earth to Pacific populations, but the trend did not show a clinal change. Instead, major discontinuities in the patterns appeared between populations in eastern Arctic Canada and western Greenland vs. those in Newfoundland, and between populations in the Barents Sea (which lies north of



Black-legged Kittiwakes exhibit geographic variation in the amount of black and white in the tips of their primaries, with Pacific populations averaging less white spotting than do Atlantic populations. Nome, Alaska; June 2003. © Arthur Morris / Birds as Art.

Norway and northwestern Russia) vs. those in the Pacific. On the other hand, kittiwakes across a broad geographic area from Newfoundland, the British Isles, and the Barents Sea showed similar wing-tip patterns.

Chardine suggested that the geographic differences and degrees of variation could indicate general patterns of dispersal in kittiwakes: highly restricted between Atlantic and Pacific, less restricted between the Arctic Canada and western Greenland area vs. the Newfoundland / British Isles / Barents Sea area, and widespread within the Newfoundland / British Isles / Barents Sea area. Chardine interpreted the significant differences between the wing tips of Pacific and Atlantic birds as strongly suggesting that the two groups represent separate taxa. At least their status as two subspecies (*R. t. tridactyla* of the Atlantic and *R. t. pollicaris* of the Pacific) should be maintained, he said, and he added that further study

possibly could lead to considering them as separate species.

“Work is now clearly needed on genetic differences both between and within Atlantic and Pacific areas, using modern techniques,” Chardine concluded. He also recommended more detailed analysis of Pacific-Atlantic differences in foot morphology, distribution, patterns of movement, and gene flow, as well as ecology of the two taxa in the region where both breed in northeastern Russia.

All of this research began with a simple field observation—an example of con-

tributions that birders can make by looking more carefully at birds we think we know well.

Golden-winged Warbler Decline

Many birders in the eastern United States can remember the decade, perhaps even the year, when they last heard the *bzee-bzz-bzz-bzz* of a breeding Golden-winged Warbler in their favorite birding haunts. The species has been disappearing from southwestern and northeastern portions of its breeding range in a decline that is known to have correlated generally with three factors: vegetational succession of the species’ favored herb-and-shrub breeding habitat into woodland, range expansion northward by the Blue-winged Warbler, and eastward expansion of the Brown-headed Cowbird.

John L. Confer, Jeffery L. Larkin,

and Paul E. Allen used multivariate statistics to investigate whether those ecological factors particularly affect Golden-winged Warbler nesting success. After a seven-year field study at 21 nesting sites in upland habitats where Golden-winged Warblers had been declining in north-central New York, the authors reported results in 2003 showing significant associations between nesting success and at least two of the factors (*Auk*

120:138–144). The greater herb cover of early successional stages was correlated positively with larger clutch size for Golden-winged Warblers. Golden-winged pairs relatively closer to Blue-winged Warbler territories had significantly smaller average clutch sizes than pairs with little or no proximity to Blue-winged Warblers. At the same time, early stages of succession were correlated with reduced proximity to Blue-winged Warblers and therefore a reduction in the negative effect of Blue-winged proximity on clutch size. The series of correlations thus pointed to a significant advantage of early-successional habitats for Golden-winged Warblers, though the authors said frankly, “We do not know the causal link for these results.”

On the other hand, the study’s results indicated that early successional



In order to understand population declines (or increases), it is essential to make detailed observations of as many facets of a species’ life history as possible. A recent study by John L. Confer and colleagues takes an in-depth look at some of the biotic factors influencing clutch size in the Golden-winged Warbler. *Aitkin County, Minnesota; June 2002. © Brian E. Small.*

habitats might demand a considerable trade-off. Golden-winged Warblers nesting in early vegetational stages were subjected to greater parasitism by cowbirds. Parasitism occurred in 47 percent of nests in early successional territories but in only 18 percent of territories in later successional stages. In turn, warblers fledged from 68 percent of un-

parasitized nests but from only 32 percent of parasitized nests, and the mean number of fledglings was reduced from 2.3 in unparasitized nests to 1.0 in parasitized nests. While those large differences might have been suggestive, the study could not demonstrate an effect of cowbird parasitism on fledging rate.

In any case, they suggested, “The most favorable upland habitat for Golden-winged Warblers would be shrublands in a region where cowbirds and Blue-winged Warblers were rare.”

Bird Art Online

Art and ornithology are linked gorgeously in an online registry of artists developed and maintained at Stanford University. The website, <artist-registry.stanford.edu>, is designed primarily for researchers seeking original art to accompany their publications, but every lover of bird art can appreciate it as a gallery to be savored.

The registry is produced by Darryl Wheye, a prominent bird artist, and the significance of the project was evident in the eminence of two Stanford luminaries who joined her in announcing it in 2002: Donald Kennedy, president emeritus of the university and editor-in-chief of the journal *Science*, and Paul Ehrlich, president of the university’s Center for Conservation Biology. As evidence of a great need for the service, they estimated that



This dramatic painting of displaying Great Egrets is one of thousands of samples of bird art that can be examined on the Stanford University registry of ornithological art <artist-registry.stanford.edu>. *Oil on canvas by © Dee Smith / Society of Animal Artists.*

continued on page 470

King Bird

Santa Barbara

continued from page 468

more than 6,000 bird-related research articles in English are published each year in more than 300 journals. They predicted an increasing interest by researchers in “high-end bird images” to reach a broader audience, and they emphasized that “artwork that captures the popular imagination is a key asset for protecting birds, for broadening pleasure in their presence, and for maintaining the link between support for basic research and successful conservation efforts.” An impressive list of 14 sponsoring organizations, including the American Birding Association, attests further to the registry’s importance.

More than 70 artists worldwide are represented by samples of their work, biographical notes, and information on how to contact them. Some—such as Barry Kent MacKay of Ontario, John P. O’Neill of Louisiana, and Julie Zickefoose of Ohio—may be familiar to North American birders. Others may be unfamiliar but deserve wide recognition; for example, don’t miss the sun-dappled “White Peacock” by Christophe Drochon of France, the breathtaking photorealism on a page of feathers by Ron Meier of Germany, and the hyper-intense pinks, blues, and greens in a flamingo portrait by Sadao Naito of Japan.

The artists are categorized by their specialties, styles, and geographic preferences. If you require the precision of scientific draftsmanship, you can find it (although researchers might wish that the samples included black-and-white line drawings). If you need illustrations for identification guides, your specifications surely can be met (although prices vary so widely among artists that no cost estimates are offered). Finally, if you simply seek art for art’s sake, you will find it in abundance on the website.