



Pima Natural Resource Conservation District
NRCS Plant Materials Center
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Via Electronic Submission

Public Comments Processing
Attn: Docket No. FWS-R8-ES-2013-0104
Division of Policy and Directives Management
U.S. Fish and Wildlife Service
4401 N. Fairfax Drive, MS 2042-PDM
Arlington, VA 22203

Attn: Docket No. FWS-R8-ES-2013-0104

Re: Proposed Threatened Status for the Western Distinct Population Segment of the Yellow-billed Cuckoo (*Coccyzus americanus*), 78 Fed. Reg. 61622 (Oct. 3, 2013)

Ladies and Gentlemen:

The Pima Natural Resource Conservation District (PNRCD) and the Southern Arizona Cattlemen's Protective Association (SACPA) submit the following comments in response to the U.S. Fish and Wildlife Service (Service) proposal to list the Yellow-billed cuckoo as a threatened species in western North America as a distinct vertebrate population segment (DPS) under the Act and its policy regarding the recognition of DPSs (61 FR 4721; February 7, 1996)

The proposed action is to list the "western population" of the yellow-billed cuckoo (*Coccyzus americanus*) (YBCU). This grouping of the species would be classified as a distinct population segment or "DPS" pursuant to the *Policy Regarding Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act*, 61 Fed. Reg. 4722 (Feb. 7, 1996) ("DPS Policy"), and listed as a threatened species under the Endangered Species Act ("ESA"), 16 U.S.C. § 1531 *et seq.* As discussed below, we find the Service has failed to show that the "Western Yellow-billed cuckoo" (WYBC) is a separate subspecies and therefore it is ineligible for listing as threatened or endangered. Further, the Service has failed to provide evidence supporting its claims as to the extent of habitat destruction. Moreover, the Service in proposing this rule has fatally violated Section 4 of the ESA. For these reasons the proposed rule is arbitrary and capricious and must be immediately withdrawn.

To constitute a "threatened species," the species unit must be "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. § 1532(20). In making this determination, the Service must consider five statutory factors:

(A) *The present or threatened destruction, modification or curtailment of the species' habitat or range;*

- (B) Overuse for commercial, recreational, scientific or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms to protect the species; or
- (E) Other natural or man-made factors concerning or affecting the species' continued existence.

16 U.S.C. § 1533(a)(1)

An agency decision will be found to be arbitrary or capricious if the agency has relied on factors which Congress had not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise. (*Center for Biological Diversity v. Kempthorne*)

An agency decision will be found to be arbitrary or capricious if it fails to articulate a rational basis for the agency's decision using the five factors listed above. See, e.g., *San Luis & Delta-Mendota Water Auth. v. Badgley*, 136 F.Supp.2d 1136 (E.D. Cal. 2000) (FWS failed to consider data contrary to proposed listing and failed to provide a rational explanation for its determination).

16 U.S.C. §1533(b)(1)(A) quite clearly states (style highlighting added):

(1)(A) The Secretary shall make determinations required by subsection (a) (1) of this section **solely** on the basis of the **best** scientific and commercial **data available** to him after conducting a review of the status of the species and after taking into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species, whether by predator control, protection of habitat and food supply, or other conservation practices, within any area under its jurisdiction, or on the high seas. (Congress 1973)

The definition of what constitutes use of the best available scientific data is found in *Bennett v. Spear*, 520 U.S. 152 (1997), which involved a challenge to a biological opinion issued under Section 7 of the ESA, 16 U.S.C. § 1536(a)(2). In discussing the petitioners' challenge, the Court stated:

The obvious purpose of the requirement that each agency "use the best scientific and commercial data available" is to ensure that the ESA not be implemented haphazardly, on the basis of speculation or surmise. While this no doubt serves to advance the ESA's overall goal of species preservation, we think it readily apparent that another objective (if not indeed the primary one) is to avoid needless economic dislocation produced by agency officials zealously but unintelligently pursuing their environmental objectives.

In writing the proposed rule to create a DPS for the WYBC and list the WYBC, the Service has failed to conduct a thorough YBC status review. The Service has relied on inaccurate scientific information, inaccurate historical information, fatally flawed analyses and speculation to support its action. Moreover, we find the proposed rule violates the clearly stated requirements of Section 4 of the ESA, and on that basis alone, the rule must be withdrawn.

The Pima NRC and SACPA agree with, and supports the comments that were previously submitted by Mr. James Chilton on behalf of the Southern Arizona Cattlemen's Protective Association in response to this proposed rule. We also agree with the comments submitted on behalf of the Arizona Mining Association by Mr. Norm James.

The proposed rule is arbitrary and capricious in that it violates the intent of Congress in its reliance on unscientific speculation regarding genetics and taxonomy, and fails to consider important aspects of the problem.

The Court opinion in *CBD v. Kempthorne* states,

Because the ESA does not prescribe its own standard of review, courts have adopted the “arbitrary and capricious” standard set out by the Administrative Procedure Act (“APA”), 5 U.S.C. § 706. *Aluminum Co. of America v. Bonneville Power Admin.*, 175 F.3d 1156, 1160 (9th Cir.1999). Under this standard, a court shall “hold unlawful and set aside agency action ... found to be ... arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. 706(2)(A); see also *Center for Biological Diversity v. Kempthorne*, 466 F.3d 1098, 1103 (9th Cir.2006). An agency decision will be found to be arbitrary or capricious if the agency has relied on factors which Congress had not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

The Service is relying on speculation—while failing to consider the best available commercial and scientific data—in its proposal to create a Distinct Population Segment; therefore the proposed listing is arbitrary and capricious and must be immediately withdrawn.

The Service makes the following claim regarding differences in egg shell thickness between the “Eastern” and “Western” Yellow-billed cuckoos:

Yellow-billed cuckoos in western North America produce larger eggs (1.2 percent longer, 0.6 percent wider, and 3.2 percent heavier) with thicker eggshells (7.1 percent thicker) (Hughes 1999, p. 14), which is an evolved trait that would help yellow-billed cuckoos in the west to cope with potential higher egg water loss in the hotter, drier conditions of western North America (Hamilton and Hamilton 1965, pp. 426– 430; Ar *et al.* 1974, pp. 153–158; Rahn and Ar 1974, pp. 147–152).

As previously discussed, the difference in size of yellow-billed cuckoos between east and west, as well as differences in size, weight, and shell thickness of eggs, are also evolved genetically linked traits. As stated earlier, researchers have developed methods using these phenotypic (outwardly expressed) traits that correctly predicted separation for nearly 90 percent of yellow-billed cuckoos that were eastern, and up to approximately 86 percent that were western (Franzreb and Laymon 1993, pp. 17–28). Thus, based on the phenotypic traits, there is indirect evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Here, the Service has failed to consider important aspects of the question of differences between the “Eastern” and “Western” YBC, jumping to a faith-based—rather than evidence-based—conclusion of “evolved genetically linked traits” entirely on the basis of “indirect evidence” and without examining any other possible explanation when more plausible explanations are readily available within the best available commercial and scientific information.

Anyone who has raised even just a flock or two of birds of any species can easily detect pure hokum in the Service’s meritless claim that shell thickness differences between the Eastern and Western YBC necessarily indicate an “evolved genetically linked traits.” Eggshell thickness varies within genetically homogeneous flocks of birds and even between the eggs laid over time by a single bird. Egg shell thickness varies within a single bird’s eggs on the amounts of calcium, zinc and magnesium

in the bird's diet, although it is also affected by the bird's age, the daily amount of daylight it receives, and stressors in the environment including temperature, humidity, and presence of predators. (Castilla et al. 2009), (Zamani et al. 2005), (Koelkebeck 1987) (Koelkebeck 2013) (Chukwuka et al. 2011)

Since the "Eastern" and "Western" YBC migrate north to breeding grounds at different times and breed in different regions of the continent, the different lengths of daylight on commencement of migration and commencement of breeding, and differences in temperature and humidity between regions east and west of the Continental Divide during the breeding season can explain the differences in shell thickness. Additionally, in the arid lands west of the 100th meridian, soils and water tend to be higher in calcium and other mineral content than eastern soils, which also explain differences in eggshell thicknesses.

Likewise, the Service errs in speculating, without examination of alternative explanations, that differences in migration timing between "Western" and "Eastern" YBC are exclusively determined by "evolved genetically linked traits." Migration timing is more likely due to the fact that the southwest is particularly hot and dry during the early summer and much more humid in July and August than in June. Just as humans from different regions of the nation migrate to different summer or winter homes at slightly different times of the year, depending on local conditions both at the place of departure and the chosen destination, there is no incentive for YBC to migrate to or through southern Arizona or southern California during the intensely hot and intensely dry May and June weather. The YBC's prey species during that time of year are naturally less abundant than during the wetter monsoon season. If the Service clings to this error, then likely it will next be just as ridiculously dividing various macrobiotic species into DPS units based on the month that hatching begins after winter's thaw in various regions of the United States, simply because winter thaw occurs at different times in different locations.

Climatic conditions are significantly different during May and June west of the Continental Divide as compared to east of it, hence the YBCU which appears to depend on seasonally humid conditions for breeding and feeding would migrate north into the Southwest later in summer than birds of the same species would migrate to the eastern slope of the United States. The humidity difference in the Southwest in June versus vs. the same areas in mid-July necessarily coincides with timing and abundance of macrobiotic hatchings necessary for survival of the YBCU. It is entirely possible that the YBCU follow seasonal expansions and contractions of prey abundance and moisture conditions, yet the Service has arbitrarily and capriciously overlooked this seasonal explanation for the timing of YBCU migrations to the western slope of the United States. Grinnell (1914) explains this selective difference in species distribution as follows:

The period of field study up to the present time devoted by the writer to the animal life of the climatically diversified state of California has led him to the recognition of three distinct orders of distributional behavior as regards terrestrial vertebrates. These are indicated in the terms : zonal, faunal, and associational.

Every animal is believed to be limited in distribution zonally by greater or less degree of temperature, more particularly by that of the reproductive season (see Merriam, 1894). When a number of animals (always in company with many plants similarly restricted) approximately agree in such limitation, they are said to occupy the same life-zone.

The observation of this category of distributional delimitation is particularly easy in an area of great altitudinal diversity like that comprised in the southwestern United States. The

writer is led to wonder if those authors who minimize the importance of temperature have ever been privileged to travel, and carry on field studies, outside of the relatively uniform eastern half of North America!

Study of any area which varies widely in altitude and hence provides readily appreciable differences in daily temperature from place to place brings conviction of the very great effectiveness of temperature in delimiting the ranges of nearly all species of animals as well as of plants. Particular attention may be called to the results of a biological survey of Mount Shasta (Merriam, 1899).

But temperature is not to be considered the only delimiting factor of environment, though its possible overemphasis by the Merriam school seems to have led some other persons to believe that this view is held. In fact, it becomes evident after a consideration of appropriate data that very many species are kept within geographic bounds in certain directions only by an increasing or decreasing degree of atmospheric humidity (see Grinnell and Swarth, 1913, p. 217). By the plotting of the ranges of many animals as well as of plants, coincidence in this regard is found in so many cases as to warrant the recognition of a number of "faunal areas," on the causative basis of relative uniformity in humidity. It is probable that every species is affected by both orders of geographic control. (Grinnell 1914b) pp. 62-64.

Moreover, minor size and color variations between the "Western" and "Eastern" YBC do not rigorously indicate species. For analogy is the example of the Spaniards on the Coronado expedition having met the Seri Indians, who were considerably taller than they were. This does not mean that the Seri people of Sonora are a separate "subspecies" than the Spaniards.

When he returned, don Rodrigo Maldonado, who had gone as leader of the search for the navíos, brought with him an Indian so large and tall that the tallest man in the camp did not reach his chest. It was said that on that coast there were other Indians even taller. (Castañeda et al. 2012)

Insignificant color variations can be explained as being similar to the fact that people of Irish descent tend to have red hair, which does not make them a separate "subspecies" from Swedes that tend to have light blonde hair. That is just a matter that the gene pool descending from one family or another, semi-isolated over time, represents one pigment over another. This does not make the Irish and the Swedes different "subspecies" any more or less than the "Eastern" and "Western" YBCU represent separate subspecies.

The Service, in the proposed rule at 61632, also makes questionable claims about timing of arrival of "Western" YBCU :

Migration Timing

The western yellow-billed cuckoo generally arrives on its breeding grounds in mid-June. Available data from California, Arizona, and western New Mexico indicate a small number of arrivals in May, but most birds arrive in June and some do not arrive until early July (Gaines and Laymon 1984, pp. 53– 58; Hughes 1999, p. 5; Cornell Lab of Ornithology 2012)

The following, primary, historical account indicates not just a few but a significant number of YBC were present on the Santa Cruz River in 1903 at the beginning of June, if not in late May, disproving the Service's speculation that timing of migration of YBCU is an "evolved genetically linked trait." Swarth mentions wading "ankle deep" in water when the roads flooded in June during his second visit, indicating 1903 was a particularly wet year. Indeed, the previous winter and spring had above-

average precipitation and on several occasions brought daily precipitation amounts that still hold records. Tucson had at least 2" rain in two of the storms the previous December, and 1.4 inches in one day in March, and another significant rain in May, providing evidence that the early arrival of YBC that year, i.e., the early timing of YBCU arrival in 1903 was due to favorable weather and not genetics. It also refutes the Service's position that cottonwood-willow forests are necessary for nesting.

South of Tucson, Arizona, along the banks of the Santa Cruz River, lies a region offering the greatest inducements to the ornithologist. The river, running underground for most of its course, rises to the surface at this point, and the bottom lands on either side are covered, miles in extent, with a thick growth of giant mesquite trees, literally giants, for a person accustomed to the scrubby bush that grows everywhere in the desert regions of the southwest, can hardly believe that these fine trees, many of them sixty feet high and over, really belong to the same species. This magnificent grove is included in the Papago Indian reservation, which is the only reason for the trees surviving as long as they have, since elsewhere every mesquite large enough to be used as firewood has been ruthlessly cut down, to grow up again as a straggly bush.

Twice, at about the same season of the year, it has been my good fortune to spend a short time studying the birds of this region. The first time was in 1902, when Mr. O.W. Howard and I spent a week, from **May 17 to 23**, in the mesquites; while my second visit to the place was in 1903, when Mr. F. Stephens and I explored it pretty thoroughly **during the first two weeks in June**.

Leaving Tucson on the afternoon of June 3, we had ourselves and outfit driven to a spot about at the edge of the big mesquite forest, some ten miles from town, and less than a mile from the old San Xavier Mission. . .

Coccyzus a. occidentalis. California Cuckoo. This species was **more common in the mesquite forest than I have ever seen it anywhere else**. As usual the birds were hard to see in the shrubbery, though we occasionally caught sight of them crossing from one side of the river to the other; but their peculiar notes could be heard everywhere we went, and sometimes around the camp three or four could be heard calling at once. Some of the females secured had evidently laid part of their sets, but we were unable to find any nests. (Swarth 1905)

Moreover, genetic testing has not conclusively separated the "Eastern" and "Western" YBCU. The Service has stated,

Because of these inconsistencies [in the results of genetic testing] the available genetic data are not considered sufficient to distinguish the subspecies. (78 FR 192 at 61625).

The Service therefore is relying predominantly on speculation rather than scientific data in its proposal to create a Distinct Population Segment; therefore the proposed listing is arbitrary and capricious and must be immediately withdrawn.

The proposed rule relies on fabricated "data" to exaggerate the decline of the WYBC.

Analysis of population trends is difficult because quantitative data, including historic population estimates, are generally lacking. The Service therefore extrapolated the data it did have, to arrive at its determination that populations of "Western" YBCU are in danger of extinction (Johnson et al.).

There is literally no difference between extrapolation, fabrication, and speculation, because to extrapolate, one must first speculate that identical linear relationships outside the scope of known data mimic what is known within measured parameters. For example, if little 5-year old Jimmy grew three inches in height over the past two years, one might extrapolate (speculate) that information (if hypothetically there was no known information about the height of old men) to say that if he lives to the age of 90 he will eventually grow to be more than ten feet tall. The analogy is no less speculative—and wrong—than the Service’s extrapolation, i.e., *fabrication*, of bird population data. In short, extrapolation is entirely outside the scope of sound science and does not constitute the “*available* data” that is clearly required by section 4(b)(1)(A) of the Endangered Species Act.

The Service has also published false information about the historic abundance of YBCU in Arizona, relying, as usual, on flawed *nth*-hand citations rather than the best available *primary* data. For example, the proposed rule at 61639 exaggerates the historical abundance of YBC in Arizona:

The yellow-billed cuckoo was historically widespread and locally common in Arizona (Phillips *et al.* 1964, p. 45; Groschupf 1987, p. 7).

Primary resources beg to differ, as indicated:

Coccyzus americanus. YELLOW-BILLED Cuckoo.-Rare during the months of June and July on the San Pedro slope of the Catalina Mountains, ranging as low as 4000 feet. The only specimen collected is an adult male (No. 500), taken July 4, 1884, at an altitude of 4000 feet. (Scott 1886)

Coccyzus americanus occidentalis Ridgway. CALIFORNIA CUCKOO. Synonym--Coccyzus americanus. Status-A summer visitant, fairly common, but of irregular distribution. It is found in the valleys of southern Arizona, along the Gila River and its tributaries, and also along the Colorado River, but has not been detected in the high plateau region of northeastern Arizona. Breeds mainly in the Lower Sonoran zone, but also, in limited numbers, in Upper Sonoran almost to the lower edge of Transition (Swarth, 1904b, p.10). (Swarth 1914)

Coccyzus americanus occidentalis Ridgway. California Cuckoo. A rare migrant, but of fairly regular occurrence both in spring and fall. Along the San Pedro River it is a fairly common summer resident, breeding in all suitable localities; but in the mountains it is only a stray pair or two that remains to breed. O. W. Howard found a nest containing two badly incubated eggs, on June 28, 1896, in Ramsey Canyon at an altitude of about 6000 feet. The eggs were beyond saving and were left, and a day or two later young birds were seen in the nest. An adult male was secured on August 21, 1902.(Swarth 1904)

Coccyzus americanus occidentalis. CALIFORNIA CUCKOO.- A common nester in the mesquite of the Santa Cruz bottoms near Tucson, arriving the second week of June and leaving early in September. Their call is feeble and resembles that of the Black-billed rather than that of the more closely related Yellow-billed Cuckoo. One was seen carrying a young lizard. (Visher 1910)

CALIFORNIA CUCKOO. Coccyzus americanus occidentalis. A very rare migrant. I have not seen more than three or four in as many years. (Swarth 1900)

The next historical quotation likewise indicates *irregular* distribution of the bird. Additionally, the passage serves as evidence that the migration timing of YBCU depends on the climate of the destination breeding grounds, and not on “evolved genetically linked traits.”

CALIFORNIA CUCKOO.

Coccyzus americanus occidentalis Ridgway, Manual North American Birds, 1887, 273.
(B, C —, E 387 part, 429 part, U 387a.)

Geographical range: Western North America; north to the southern portions of British Columbia; east to the Rocky Mountains and southern Texas; south over the tablelands of Mexico; northern Lower California.

The breeding range of the California Cuckoo, for which the name "Western Yellow-billed Cuckoo" seems to be more appropriate, is coextensive with its distribution in the United States. As far as yet known it reaches the northern limits of its breeding range about latitude 50° 45', near Kamloops, in British Columbia, and its southern and eastern limits in the lower Rio Grande Valley, in southern Texas. The eastern slopes of the Rocky Mountains appear to form the eastern limits of its range in this direction. Although **nowhere common**, it seems to be **generally distributed over the Pacific Coast States and Territories**.

Mr. F. Stephens writes me: "I consider the California Cuckoo **a rare summer resident of the valleys of southern California**. The only instance of its breeding here, that I know of, was in the San Bernardino Valley; I saw the parent fly from the nest, which was in a slender willow growing in a thicket in a moist location. The little tree leaned, but was too strong to admit of my pulling the nest within reach; I therefore attempted to climb to the nest and succeeded in spilling the eggs, which broke on striking the ground. The fragments were pale green. The eggs were fresh and appeared to be two in number. **I think the date was the latter part of May, 1882.**"

Mr. Charles A. Allen, of Nicasio, has found this subspecies breeding in the willow thickets along the Sacramento River, California, where it appears to be **not uncommon in suitable localities**. Dr. Clinton T. Cooke considers it moderately common in the vicinity of Salem, Oregon, and Mr. R. H. Lawrence met with it occasionally in the Columbia River Valley, in Clarke County, Washington.

It appears to reach the center of its abundance, the lower Rio Grande Valley, in Texas, about the beginning of April, and sometimes nests there in the latter part of this month, but ordinarily not before May, while in southern Arizona it appears to arrive considerably later. I noticed it first on June 10, 1872, among the willows in the Rillito Creek bottom, and again on the 19th, but failed to find a nest before July 17, but after this date I found several others; two of these as late as August 22. Its general habits, call notes, and food are very similar to those of its somewhat smaller eastern relative, and **excepting this difference and its stouter and larger beak, it is otherwise indistinguishable**. On the whole, it appears to be **more common west of the Sierra Nevada and the Cascade Mountains than in the interior**, where I only met with it on a single occasion, near Old Fort Boise, at Keeneys Ferry, on the Oregon side of Snake River, and here I found a nest of this subspecies on August 2, 1876, containing three half-grown young. The nest was placed in a clump of willows, within a few feet of where I was camped, and my attention was first attracted to it by the uneasy manner in which the parents moved through the willows, constantly flitting back and forth, and always with a large black cricket (*Anabus simplex* or *purpuratus*) in their bills, on which they seemed to feed their young entirely. They picked most of these repulsive-looking creatures from grass stalks and low shrubs on which they were feeding, and although there were numbers of them to be found all around, as well as in camp, they generally went off some little distance to get them. The nestlings, only two or three days old, were

ugly-looking creatures, and their bodies were almost naked. The parents soon lost their fear caused by my proximity, and flew back and forth at short intervals during the three hours of daylight in which I had an opportunity to observe them. The young uttered occasionally a low, wheezy note, like "ugh, ugh," but on the whole both parents and young were rather silent. This subspecies **has also been met** with in Utah, and Mr. A. W. Anthony **observed a Cuckoo** which is unquestionably referable to this subspecies near Ensenada, Lower California. If the California Cuckoo showed the same parasitic habit of occasionally depositing one or more of its eggs in the nests of other birds, as its eastern relatives are now and then known to do, I believe that I should have observed the fact in southern Arizona. Here I found eight of their nests with eggs, and fully five hundred nests of smaller birds, which nested in similar localities among the willow thickets and mesquite bushes, overrun with vines, in the creek bottoms, but not a single instance of parasitism came under my observation. The California Cuckoo built its own nest in every case, and while it generally was a loose, slovenly affair, without any pretence to architectural beauty, I think on the whole it compared favorably with the nests of our two better-known eastern species; some at least were fairly well lined with dry grasses and the blossoms of a species of *Evax*, and there was generally a slight depression in the center of the nest for the eggs to rest in. I took my first set, containing two fresh eggs, on July 17, 1872; on the 25th of this month I found another set of four eggs in which incubation had slightly and uniformly begun. On July 27 I secured two more sets, one of four, the other of three eggs, both fresh; and I did not find any more until August 21, when I took a set of three, one of which contained a large embryo, another one somewhat less advanced, and the remaining egg was addled. Next day I found two more nests, one containing a set of three, in which incubation had commenced evenly, the other held two fresh eggs, and on August 24 I found the last nest, which contained a single fresh egg, to which no others were added. Two of these nests contained incomplete sets when found, and an egg was added in each case on succeeding days. As a rule, incubation does not begin until the set is completed, and an egg is deposited daily. Both sexes assist in incubation and in the care of the young. I believe only one brood is raised in southern Arizona in a season. The nests here were placed in willow or mesquite thickets, from 10 to 15 feet from the ground, and they were usually fairly well concealed by the surrounding foliage. (Bendire 1895)

Numerous historical ornithological reports from southern Arizona make no mention at all of WYBC, suggesting these authors never encountered the WYBC within the scope of those specific research projects. (Mearns 1890b) (Mearns 1890a) (Swarth 1920) (Brewster 1885) (Osgood 1904) (Swarth 1918) (Jackson 1922)-and others. The American Ornithologists Union did not add the WYBC to the list of recognized North American birds until 1888. (Chapman 1888) Therefore, the bird was historically nowhere near as abundant in Arizona as the Service has misleadingly implied in the proposed rule.

Moreover, the Service has exaggerated recent "declines" of WYBC due its illegal reliance on information outside of the scope of the best available commercial and scientific data. At 61639 the Service states:

In a statewide survey in 1999 that covered 265 mi (426 km) of river and creek bottoms, 172 yellow-billed cuckoo pairs and 81 single birds were located in Arizona (Corman and Magill 2000, pp. 9–10). While this survey did not cover all potential yellow-billed cuckoo habitat in Arizona, it indicated that the number of yellow-billed cuckoos in 1999 was substantially lower than previous estimates for the State.

At 61640 the Service states:

Thus, the available literature and surveys suggest that yellow-billed cuckoo populations in Arizona over the past 30 years have declined by 70 to 80 percent, with recent declines since approximately 2000 at some of largest populations (for example, San Pedro River). At present, it appears that the State's population could be as low as 170 pairs of yellow-billed cuckoos, and probably does not exceed 250 pairs. Despite these recent declines, the population of the western yellow-billed cuckoo in Arizona is the largest in the United States.

Both statements are discredited by Troy Corman in the attached personal communication. (Corman 2014)He wrote, in response to a request for the cited report:

I have attached a copy of the report you requested. [(Corman and Magill 2000)] Please note the following however:

Q. Surveys before 2000 and subsequent reports (e.g. Corman and Magill 2000) which listed the number of pairs and singles in specific area are likely to be inaccurate. Subsequent studies have shown that the standard survey protocols for YBCU do not accurately estimate breeding population sizes because past researchers erroneously believed that based on the specific call, a surveyor could list individuals as either paired or single (unmated). Individual YBCUs do not always respond to call broadcast surveys and a breeding YBCU may respond during one survey, but may not be detected during the other surveys when present. In addition, YBCUs are not strongly territorial as are many songbirds, and one "territory" may greatly overlap with the next. These factors all lead to inaccuracy and imprecision in estimating breeding population size using past survey protocols.

R. During the 1998-1999 study, the Department and cooperators did not survey a significant amount of cuckoo habitat. The highest number of YBCUs was detected along the San Pedro, Verde and Agua Fria River drainages and Cienega and Sonoita Creeks. However, approximately 80 miles of these drainages were excluded during this study and approximately 70 miles along the Verde and upper Gila Rivers were not surveyed. Much of this un-surveyed habitat is on private and tribal lands, and as such, these drainage sections have not been thoroughly surveyed for YBCU.

Based on this, I have also included an article that was prepared by Johnson et al. [(Johnson et al.)] later using this data more accurately.

Here we see that YBCU survey protocols have changed significantly since the year 2000, making inconsistent results that cannot be compared for trend information. We also see that population surveys prior to 1998 were nearly non-existent, and those that have been done before and since 2000 were largely inaccurate.

The available population data, therefore, is insufficient to inform the Service as to the actual status of the species, so the Service has illegally relied instead, not on the best available data, but rather on a combination of inconsistent survey protocols, inaccurate data and speculation in its determination that the WYBC is in decline. The rule therefore is arbitrary and capricious and must be immediately withdrawn.

The proposed rule violates Section 4(b)(1)(A) of the Endangered Species Act (ESA). The Service makes utterly false claims concerning “the present or threatened destruction, modification or curtailment of the species’ habitat or range.” The rule fails to consider primary resources, i.e., it ignores the best available commercial and scientific data. Therefore the rule is illegal, arbitrary and capricious and must be immediately withdrawn.

The *best* available data regarding the presence and habitat preferences of any species, particularly considering historical information or considering scientific data collection, is obviously found exclusively within primary, i.e., *first-hand* resources and by definition excludes secondary, tertiary, and other *nth*-hand citations to primary resources. The ESA therefore requires the Service to rely *exclusively* upon primary sources (first hand reports) of *data, exclusive of speculation and/or opinion*, in promulgating species listing rules. Secondary, tertiary, quaternary and other *nth*-hand information, such as that which dominates the citations within this proposed rule, is unreliable because it contains unchecked errors, significant omissions of fact, misrepresentations, speculation, and other misinformation—if not deliberate *dis*-information—that is contrary to the scope of the “best” data that is clearly prescribed by Congress in plain, straightforward and unambiguous language within the ESA.

As just one example of the plethora of inaccurate, misrepresentative and irrelevant *nth*-hand citations included within this proposed rule, the Service cites Ohmart (1994) as one of four sources of its wholly inaccurate claim that, “*past riparian losses are estimated to be 90 to 95 percent in Arizona, 90 percent in New Mexico and 90 to 99 percent in California*” (U.S. Department of Interior 2013). The other three references include U.S. Dept. of Interior (1994), Noss et al. (1995) and Greco (2008). Among these sources, the scope of both U.S. Department of Interior (1994) and also Greco (2008) lies outside Arizona, leaving Ohmart (1994) and Noss et al. (1995) as sole sources of the Service’s “90 to 95 percent” claim of habitat destruction relative to Arizona.

Ohmart (1994), however, presents no data whatsoever in support of the Service’s claim. Ohmart (1994) states in its abstract,

I estimate that 95% of the riparian habitats in the west have been either altered, degraded or destroyed in the past 100 years. (Ohmart 1994)

The remainder of Ohmart (1994), however, presents no data and no calculation whatsoever in support of that statement. That is merely the author’s speculation, which is not scientific data, and it therefore fails to meet the minimum scientific standard sought by Congress and required by the ESA.

Absent presentation of supporting data, Ohmart (1994) instead cites Rosenberg et al. (1991) as its sole reference source in making this claim. The geographical scope of Rosenberg et al. (1991), however, is limited to the Colorado River valley, not the entire western United States, which means the claim in the abstract of Ohmart (1994) is, outside the banks of the lower Colorado River, entirely unsupported by presentation of data or citation to quantitative data.

Within the limited scope of the Colorado River valley, however, Rosenberg et al. (1991), on page 21, in fact refutes Ohmart’s 95% “estimate.” It states (bold highlight added):

In 1894, Mearns (1907) estimated that about 160,000-180,000 ha of alluvial bottomland between Fort Mohave and Fort Yuma were covered by riparian vegetation. ***As of 1986, total***

riparian vegetation comprised only about 40,000 ha, approximately 25% of the available bottomland estimated by Mearns (Anderson and Ohmart 1984; Younker and Andersen 1986). Roughly 40% of the area remaining in 1986 was covered by pure salt-cedar; 16.3% was covered by honey mesquite and/or native shrubs; and only 0.7% (307 ha) could be considered mature cottonwood or willow habitat (Ohmart et al. 1988).

It is evident in the quoted paragraph above that Rosenberg et al. (1991) does *not* estimate that “90 to 95 percent” of the original riparian habitat has disappeared from the Colorado River valley. In fact the authors clearly state that 25% of whatever riparian habitat they allege to have existed in 1894 still remained in 1986, a significant departure from the claim made in Ohmart (1994). Hence, Ohmart (1994) wholly misrepresents its only cited source and in doing so, discredits itself entirely.

Rosenberg et al. (1991), in the same quoted paragraph, however, likewise egregiously misrepresents its own source, Mearns (1907).¹ The misrepresentation is glaring because it was physically impossible for Edgar A. Mearns to have estimated the extent of riparian vegetation from Fort Yuma all the way upstream to Fort Mohave during the 1894 boundary survey project because on that expedition, Mearns never traveled farther upstream on the Colorado River than its junction with the Gila River, some 200 miles downstream of Fort Mohave. Traveling over the desert first, Mearns headed downstream on the Gila River starting at the Adonde station near present-day Wellton, Arizona, and ended his riparian observations on the Colorado River at the international boundary. (Mearns 1907)²

Rosenberg et al. (1991) entirely misrepresents the following quoted paragraph from Mearns (1907) to produce the utterly false claim that Mearns (1907) somehow estimated the extent of riparian vegetative cover from Fort Yuma all the way to Fort Mohave. Mearns (1907) in fact makes no claim whatsoever to making such an estimate. After describing the riparian vegetation found *locally at Station No. 67 at Yuma*, Mearns (1907) merely mentions that the U.S. Geological Survey had previously determined, *not* the extent of riparian vegetation, but rather only the extent of alluvial bottom land on the Colorado River to be 400,000 to 500,000 acres (roughly 160,000 to 200,000 ha) between Camp Yuma and Camp Mohave.

Station No. 67. — Yuma, Arizona. This station is on the left (east) bank of the Colorado River, at the mouth of the Gila. The channels of the Gila and Colorado rivers are marked by lines of tall cottonwoods and a lesser fringe of willows. The adjacent bottom lands, which are broad and subject to annual overflow from the river, are more or less covered with mistletoe-matted mesquites and screwbeans. There are but few cacti, and these only in the hilly country in the vicinity of Yuma, where the creosote bush and desert willow also grow. There are a few tall Mexican elders where the soil is alluvial ; but the commonest shrubs of the low ground are the arrowwood [sic] and Baccharis. As a result of an investigation along the Colorado River, made in January, 1902, by the hydrographic branch of the U.S. Geological Survey, the extent of the alluvial bottom land between Camp Mohave and Yuma was found to be from 400,000 to 500,000 acres. The alluvial deposits extend in a widening band along the

¹ The full text of Mearns (1907) is available, free of charge, online at http://archive.org/stream/cu31924090221064/cu31924090221064_djvu.txt and a scan of the original printed report is likewise available online at <https://archive.org/stream/cu31924090221064#page/n5/mode/2up>

² (Ibid.), pp.1-23.

Colorado from Yuma to the Mexican Gulf of California, forming a tropical tract which possesses distinctive biologic features. Although the rainfall at Yuma is but 3.06 inches a year, this tract is irrigable, and, like the Nile Valley, subject to annual overflowing. These high waters are rich in fertilizing sediments, are exceptionally free from alkaline salts, and come at an opportune time for irrigation.³(Ibid.)

Rosenberg et al. (1991) so atrociously misrepresents Mearns (1907) that its early chapter discussing changes in the vegetation of the Colorado River rests its sky-is-falling conclusion on an entirely fabricated fantasy of “*expansive and impenetrable forests*” as baseline, pre-settlement riparian conditions over an area for which the authors present zero evidence and certainly no foundation in quantitative data:

To summarize the vegetation changes that have occurred, a floodplain that was once filled from end to end with expansive and impenetrable forests of cottonwood, willow and mesquite has been converted, in a little more than a century, a largely treeless valley dominated by farms and towns. The relatively little remaining riparian vegetation exists in fragmented strips and islands, most being saltcedar.

The presumed baseline of Colorado River vegetation presented by Rosenberg et al. (1991) in the next quotation, is handily refuted by published autobiographical documents.

Written accounts by explorers and missionaries from the 1600s to mid 1800s leave the reader with a vision of cottonwood and willow forests lining the banks of the lower Colorado River, except where bedrock formed the channel.

It is also worthy of note that the same chapter of Rosenberg et al. (1991) relied entirely on citations to unpublished diaries penned prior to 1850 by unnamed persons, without including a single quotation, to establish this baseline fantasy “vision” and carry the reader through the first chapter to its woefully inaccurate conclusion. The only citation in the bibliography (Rosenberg et al. 1991) that fits such a description references unpublished diaries of unnamed persons, and these alleged diaries are allegedly held in the private files of Dr. Robert Ohmart.

The fictional baseline presented by Rosenberg (1991) is solidly refuted by published, first-hand accounts of early visitors to the Colorado River. (Hardy 1829) (Grinnell 1914b) (Summerhayes 1908)

Mearns (1907), quoted earlier, fails to present a citation to the author or title of the 1902 US Geological Survey (USGS) report it mentions, and also lacks a bibliography. Half a day spent on an online search for a 1902 USGS report estimating the area of the lower Colorado River’s alluvial bottomlands proved fruitless. The claim in Mearns (1907) that the USGS estimated there were 400,000-500,000 acres of alluvial bottomlands between Fort Yuma and Fort Mohave in 1902 therefore remains unverified.

To summarize the Service’s citation to Ohmart (1994), the USGS allegedly produced primary data and an estimate of the area of total alluvial bottomland on the Colorado River in 1902, although this

³ p.125. The full text of Mearns (1907) is available, free of charge, online at http://archive.org/stream/cu31924090221064/cu31924090221064_djvu.txt and a scan of the original printed report is likewise available online at <https://archive.org/stream/cu31924090221064#page/n5/mode/2up>

has not yet been verified. Mearns (1907) mentions the estimate as second-hand information minus a verifiable citation. Rosenberg et al. (1991) then wholly misrepresented Mearns (1907) republishing what no longer represented the original data, as third-hand information. Ohmart (1994) then wholly misrepresented Rosenberg et al. (1991) and with it, Mearns (1907) and the original data, as fourth-hand information. Ohmart (1994) in turn was cited by the Service under the guise of, “the best available commercial and scientific information” (which it is obviously not) in the proposed rule, as fifth-hand information. This chain of repeatedly misrepresented information in no way supports the Service’s claim that 90-95 percent of riparian vegetation across the state of Arizona has been destroyed.

In addition to citing Ohmart (1994) the Service also rested its claim of 90-95 percent riparian habitat loss in Arizona on et al. (1995). Noss et al. (1995) presents no primary data whatsoever but simply makes the claim in Appendix A, as follows:

Appendix A. Estimated declines of ecosystems with emphasis on the United States. Decline includes area loss and degradation (as noted). Estimates in each region generally proceed in the order of terrestrial vegetation and other terrestrial habitats, and wetland, aquatic, estuarine, and marine habitats. . .

90% loss of pre-settlement riparian ecosystems in Arizona and in New Mexico (Arizona State Parks 1988).

36% loss of wetlands in Arizona between 1780's and 1980's (Dahl 1990).

70% loss of cienegas (wet marsh) sites in Arizona since settlement (Arizona Nature Conservancy 1987)

In Appendix B, Noss et al. (1995) makes the following claims:

Appendix B. Critically endangered, endangered, and threatened ecosystems of the United States. Decline refers to destruction, conversion to other land uses, or significant degradation of ecological structure, function, or composition since European settlement. Estimates (see references in Appendix A) are from quantitative studies and qualitative assessments.

...

Critically Endangered (>98% decline) Ecosystems:

... Riparian forests in California, Arizona, and New Mexico. [*in direct contradiction of the earlier claim of 90%, and without citation to source.*]

...

Threatened (70-84% decline)

... Cienegas (marshes) in Arizona.

Bengson (1992), with validation of professional review, soundly discredits the citation to Arizona Nature Conservancy (1987) as third-hand information relying entirely on misrepresented authorities. (Bengson 1992) (Included in attachment)

The 1988 Arizona Wetlands Priority Plan, (State Parks Department 1988) is unpublished and available only if one has time to travel to the AZ State Parks headquarters in Phoenix, by appointment, and view it there. For Pima NRCDC cooperators the commute alone requires a minimum of four to eight hours. For this reason, combined with the time restrictions imposed by the utterly unreasonable present onslaught of concurrently open public comment periods for proposed federal regulations, and the fact that our cooperators stand to be severely harmed by implied consent if any public comment deadline is missed, that reference was not researched. However, the 2008 Arizona State Comprehensive Outdoor Recreation Plan states on page 111,

Section 303: *Inclusion of Wetlands in Comprehensive Statewide Outdoor Recreation Plans*, requires that for fiscal year 1988 and thereafter each Statewide Comprehensive Outdoor Recreation Plan (SCORP) shall specifically address wetlands within that State as an important outdoor recreation resource as a prerequisite to approval, and requires the production of a wetlands priority plan developed in consultation with the State agency with responsibility for fish and wildlife resources and consistent with the national wetlands priority conservation plan developed under Section 301. (Thornburg 2008)

Therefore Arizona State Parks (1989), which the Service parrots in its claim of 90-95% destruction of wetlands in Arizona, almost certainly relied on citations either similar or identical to those relied on by the 1988 Arizona Wetlands Priority Plan (State Parks Department 1988). Bengson (1992), attached, discredits this claim by Arizona State Parks (1989) as relying entirely on misrepresented authorities.

Table 1 of Dahl (1990) claims that Arizona has a total surface area of 72,901,760 acres consisting of 72,680,320 acres of land and 221,440 acres of water. Table 1 further claims that in the 1780's—according to reference source #9—Arizona had an estimated 931,000 acres of wetlands comprising 1.3% of its total surface area, and in the 1980's, according to reference source #10, Arizona had an estimated 600,000 acres of wetlands comprising 0.8% of total surface area, representing an estimated loss of 36% of Arizona's wetlands between 1780 and 1989. On its face, Dahl's claims have no baseline in actual quantitative data because of the lack of any scientific surveys prior to the 1850's. Indeed, the nature of the Colorado River was largely undocumented until 1826 when Lieutenant R.W.H. Hardy explored it. (Hardy 1829)

Therefore the presumed "1780 baseline" employed by Dahl (1990) is whatever the author wants us to envision, because it has absolutely no basis in documented observation.

The references section of Dahl (1990) reveals this claim relies on the following citations to unnamed reports written by unnamed persons working in vast federal agencies 25-31 years ago, making acquisition and verification of the cited "data" extremely difficult if not impossible:

9 Unpublished data (1989). U.S. Dept. of Agriculture, Economic Research Service. Washington, D.C.

10 Unpublished data (1983). Dept. of Interior, U.S. Fish and Wildlife Service, National Wetlands Inventory. St. Petersburg, FL.

Another section of the report indicates that reference #9 might possibly be the same as reference #79:

79 U.S. Department of Agriculture, Economic Research

Service. (unpublished) Wetland Priority Analysis -

lower 48 states. (1989). Washington, D.C. (Dahl 1990)

The USDA Economic Research Service and the USGS were both contacted with requests for copies of the cited documentation, as shown in attachment. Neither agency responded. Hence, Dahl's citations are unverifiable and therefore Dahl's claims are unreliable. Furthermore, the Service's reliance on this information violates the ESA's Section 4 requirement that the data it uses be "available."

For that matter, refuting Dahl's, and Rosenberg et al.'s innuendo that the Colorado River was untrammelled by man in 1780 is refuted by the Spanish explorer Hernando de Alarcon, who recorded that the lower Colorado River valley was under agricultural cultivation when he observed it in 1540.

In addition to corn, they had some squash and another seed similar to millet. They have grinding stones and pots in which they cook the squash and very excellent fish they obtain from the river. (Alarcon 2012)

Moreover, (Betancourt 1990) indicates that the Santa Cruz River Valley was not only under cultivation when John Russell Bartlett documented it for the Mexican Boundary Commission, but that cottonwoods and willows lined the irrigation canals, and that cottonwoods did not grow along the Santa Cruz until it began to incise, refuting the Service's claims that agriculture has replaced cottonwood/willow forests and that groundwater pumping has dried the Santa Cruz:

In July 1852, Bartlett followed the old trail along the Santa Cruz south from the Maricopa and Pima villages on the Gila:

.... camped eight miles [12.2 km] from Tucson [at the Nine Mile Water Hole].... en route to Tucson, wagons mired in crossing arroyos; in Tucson camped on the banks of the Santa Cruz River, where there was an abundance of grass.... In addition to the river alluded to, there are some springs near the base of hill [Sentinel Peak] a mile west of the town, which furnish a copious supply of water.... the bottomlands are here about a mile [1.6 km] in width. Through them run irrigating canals in every direction, the lines of which are marked by rows of cottonwoods and willows, presenting an agreeable landscape.... [left Tucson, heading south and] soon entered a thickly wooded valley of mesquite.... Near [San Xavier] is a fertile valley, a very small portion of which is now tilled, although from appearances, it was all formerly irrigated and under cultivation.... Leaving the village, we rode on a mile [1.6 km] further and stopped in a fine grove of large mezquit [sic] near the river, where there was plenty of grass.... we resumed our journey along the valley as before, through a forest of mezquit trees.... The rain having continued the whole night, we were much delayed in getting off this morning. The whole country was drenched with water and the road almost impassable for heavily-loaded wagons. After a hard journey of eighteen miles [30.8 km], we stopped at the banks of the river [14.4 km north of Tubac] and strange as it may appear, notwithstanding all the rain that had fallen, the river, such is the uncertainty of the streams in this country, was quite dry. Fortunately, in some cavities in the river's bed we found water enough for our present wants (Bartlett, 1854, p. 292-302).

The Service as shown above, relies again on *n*th hand fairy tales in its claim at 61639:

As habitat has declined, yellow-billed cuckoo numbers have likely declined, as has been documented for the lower Colorado River (Rosenberg *et al.* 1991, pp. 202–205) and described above for California.

Here again, the Service has failed to rely solely on the best available commercial and scientific data. Rosenberg *et al.* (1991), in addition to the flaws already discussed in great detail, founds most of its habitat decline arguments on baseless exaggerations without citation to source. For example, on page 20 it states:

During the brief heyday of steamboat traffic in the mid-1800s, virtually any tree large enough and close enough to the river was burned for fuel. However, the natural resiliency of riparian vegetation ensured that the cottonwood and willow trees would regenerate.

The statement is absurd on its face, as cottonwood and willow would make very poor fuel while wasting valuable cargo space. The wood used for steamships on the Colorado River was selectively mesquite, not “virtually any tree available.” (Dellenbaugh 2011) (Grinnell 1914a). The exaggerations and fantasies throughout the analysis indicate the analysis of vegetation trends presented by Rosenberg *et al.* (1991) is anything *but* the best available scientific and commercial data because it presents no data whatsoever and obviously has no foundation in the scientific method.

In summary, in support of its claim that 90-95% of riparian habitat in Arizona has been lost, the Service has relied *solely* on sources which not only present no original data whatsoever, but which instead are up to 4th- and 5th-hand hearsay referring to intermediate fiction writers full of egregious misrepresentations of original information, and all with no apparent paper trail leading to any verifiable data. Clearly, therefore, this proposed rule substantially and significantly violates the ESA Section 4 requirements that proposed species listings rely “solely” on the “best available” “data.”

Indeed the Service’s claim of 95% riparian loss in Arizona is soundly disproven by the book, *Ribbon of Green*, which presents first-hand photographic historical data showing that riparian vegetation has substantially *increased* over the last century on the major rivers of the Western United States, with identical photo points comparing vegetation on these waterways at the turn of the 20th century to the time of the book’s publication. (Webb *et al.* 2007)

Moreover, the fantasy “vision” promoted by Rosenberg *et al.* (1991), and falsely validated by citation in the proposed rule, is soundly refuted by a variety of primary sources.

Grinnell (1914) states

The paucity of terrestrial mammals in this association is probably due to the repressive effect of the annual overflow which cannot fail to reduce the food-supply for many days at a time, even if extensive mortality does not directly ensue through drowning of individuals. As already implied (p. 58), the willow association varies greatly in width in different parts of the river’s course. Where the channel is constricted by rock walls, as in the box canon at The Needles, all trace of it is effaced for many rods. Where the river flows among hills patches of willows in ravine-mouths give detached representations to one or more elements. On the other hand, the broad valleys are occupied chiefly by this association which may then be as much as seven miles wide and continuous for many miles on one side or the other of the meandering channel.

Descriptions of the Colorado River are likewise published and easily verified in the autobiography of Martha Summerhayes, who traveled the Colorado River several times by steamship beginning in 1874. Nowhere in her autobiography does Martha Summerhayes mention cottonwood trees. (Summerhayes 1908) The following excerpts from Summerhayes's *Vanished Arizona* describe the Colorado River as she experienced it, beginning in August 1874. Highlighting is added to words that specifically describe the Colorado River, while leaving important context intact.

For it must be remembered, that in 1874 there were no railroads in Arizona, and all troops which were sent to that distant territory either marched over-land through New Mexico, or were transported by steamer from San Francisco down the coast, and up the Gulf of California to Fort Yuma, from which point they marched up the valley of the Gila to the southern posts, or continued up the Colorado River by steamer, to other points of disembarkation, whence they marched to the posts in the interior, or the northern part of the territory. (Summerhayes 2009) (Kindle Locations 280-284).

She writes on September 1, 1874

Finally, on the fourth day, the wind abated, and the transfer was begun. We boarded the river steamboat "Cocopah," towing a barge loaded with soldiers, and steamed away for the slue. I must say that we welcomed the change with delight. Towards the end of the afternoon the "Cocopah" put her nose to the shore and tied up. **It seemed strange not to see pier sand docks, nor even piles to tie to.** (Ibid.) (Kindle Locations 367-370).

Jack's diary records: "Aug. 23rd. Heat awful. Pringle died to-day." He was the third soldier to succumb. **It seemed to me their fate was a hard one. To die, down in that wretched place, to be rolled in a blanket and buried on those desert shores, with nothing but a heap of stones to mark their graves.** (Ibid.) (Kindle Locations 373-377).

On account of the **wind, which blew again with great violence,** the "Cocopah" could not leave the slue that day. . . Finally, on August the 26th, the wind subsided and we started up river. Towards sunset we arrived at a place called "Old Soldier's Camp." There the "Gila" joined us, and the command was divided between the two river-boats. We were assigned to the "Gila," and I settled myself down with my belongings, for the remainder of the journey up river. We resigned ourselves to the dreadful heat, and **at the end of two more days the river had begun to narrow, and we arrived at Fort Yuma, which was at that time the post best known to, and most talked about by army officers of any in Arizona. No one except old campaigners knew much about any other post in the Territory. . .But the fort looked pleasant to us, as we approached. It lay on a high mesa to the left of us and there was a little green grass where the post was built.** (Ibid.) (Kindle Locations 404-418).

CHAPTER VI. UP THE RIO COLORADO **And now began our real journey up the Colorado River, that river unknown to me except in my early geography lessons—that mighty and untamed river, which is to-day unknown except to the explorer, or the few people who have navigated its turbulent waters.** Back in memory was the picture of it on the map; here was the reality, then, and here we were, on the steamer "Gila," Captain Mellon, with the barge full

of soldiers towing on after us, starting for Fort Mojave, some two hundred miles above. (Ibid.) (Kindle Locations 434-440).

At sundown the boat put her nose up to the bank and tied up for the night. The soldiers left the barges and went into camp on shore, to cook their suppers and to sleep. The banks of the river offered no very attractive spot upon which to make a camp; they were low, flat, and covered with underbrush and arrow-weed, [sic] which grew thick to the water's edge. . . Under these circumstances, much sleep was not to be thought of; the sultry heat by the river bank, and the pungent smell of the arrow-weed which lined the shores thickly, contributed more to stimulate than to soothe the weary nerves. But the glare of the sun was gone, and after awhile a stillness settled down (Ibid.) (Kindle Locations 454-464).

And thus began another day of intolerable glare and heat. Conversation lagged; no topic seemed to have any interest except the thermometer, which hung in the coolest place on the boat; and one day when Major Worth looked at it and pronounced it one hundred and twenty-two in the shade, a grim despair seized upon me, and I wondered how much more heat human beings could endure. There was nothing to relieve the monotony of the scenery. On each side of us, low river banks, and nothing between those and the horizon line. On our left was Lower California, and on our right, Arizona. Both appeared to be deserts. As the river narrowed, however, the trip began to be enlivened by the constant danger of getting aground on the shifting sand-bars which are so numerous in this mighty river. Jack Mellon was then the most famous pilot on the Colorado, and he was very skilful [sic] in steering clear of the sand-bars, skimming over them, or working his boat off, when once fast upon them. (Ibid.) (Kindle Locations 471-481).

One morning, as I was trying to finish out a nap in my stateroom, Jack came excitedly in and said: "Get up, Martha, we are coming to Ehrenberg!" Visions of castles on the Rhine, and stories of the middle ages floated through my mind, as I sprang up, in pleasurable anticipation of seeing an interesting and beautiful place. Alas! for my ignorance. I saw but a row of low thatched hovels, perched on the edge of the ragged looking river-bank; a road ran lengthwise along, and opposite the hovels I saw a store and some more mean-looking huts of adobe. "Oh! Jack!" I cried, "and is that Ehrenberg? Who on earth gave such a name to the wretched place?" "Oh, some old German prospector, I suppose; but never mind, the place is all right enough. Come! Hurry up! We are going to stop here and land freight. . . But I did not go ashore. Of all dreary, miserable-looking settlements that one could possibly imagine, that was the worst. An unfriendly, dirty, and Heaven-forsaken place, . . . It was, however, an important shipping station for freight which was to be sent overland to the interior, and there was always one army officer stationed there. (Ibid.) (Kindle Locations 481-505).

On the third of September the boilers "foamed" so that we had to tie up for nearly a day. This was caused by the water being so very muddy. The Rio Colorado deserves its name, for its swift-flowing current sweeps by like a mass of seething red liquid, turbulent and thick and treacherous. It was said on the river, that those who sank beneath its surface were never seen again, and in looking over into those whirlpools and swirling eddies, one might well believe this to be true. From there on, up the river, we passed through great canons and the

scenery was grand enough; but one cannot enjoy scenery with the mercury ranging from 107 to 122 in the shade. (Ibid.) (Kindle Locations 511-531).

We bade good-bye to our gallant river captain and watched the great stern-wheeler as she swung out into the stream, and, heading up river, disappeared around a bend; for even at that time this venturesome pilot had pushed his boat farther up than any other steam-craft had ever gone, and we heard that there were terrific rapids and falls and unknown mysteries above. The superstition of centuries hovered over the "great cut," and but few civilized beings had looked down into its awful depths. . . We heard no more the crackling and fizzing of the stern-wheeler's high-pressure engines at daylight, and our eyes, tired with gazing at the red whirlpools of the river, found relief in looking out upon the grey-white flat expanse which surrounded Fort Mojave, and merged itself into the desert beyond. (Ibid.) (Kindle Locations 531-541).

The Summerhayes's cook and nurse, Patrocina, was a native of Ehrenberg and the mother of a young daughter named Jesusita. As a mother of a toddler or young child she would probably have been at least 18 years old, meaning she had lived at Ehrenberg since at least 1856. The following passage highlights how badly Rosenberg et al. (1991) misrepresents the vegetation on the Colorado River.

CHAPTER XIX. SUMMER AT EHRENBURG The week we spent going up the Colorado in June was not as uncomfortable as the time spent on the river in August of the previous year. Everything is relative, I discovered, and I was happy in going back to stay with the First Lieutenant of C Company, and share his fortunes awhile longer. Patrocina recovered, as soon as she found we were to return to Ehrenberg. I wondered how anybody could be so homesick for such a God-forsaken place. I asked her if she had ever seen a tree, or green grass (for I could talk with her quite easily now). She shook her mournful head. "But don't you want to see trees and grass and flowers?" Another sad shake of the head was the only reply. Such people, such natures, and such lives, were incomprehensible to me then. I could not look at things except from my own standpoint. (Ibid.) (Kindle Locations 1597-1605).

She took her child upon her knee, and lighted a cigarette; I took mine upon my knee, and gazed at the river banks: they were now old friends: I had gazed at them many times before; how much I had experienced, and how much had happened since I first saw them! Could it be that I should ever come to love them, and the pungent smell of the arrow-weed which covered them to the water's edge? The huge mosquitoes swarmed over us in the nights from those thick clumps of arrow-weed and willow, and the nets with which Captain Mellon provided us did not afford much protection. (Ibid.) (Kindle Locations 1605-1610).

. . . She told me the women bathed in the river [at Ehrenberg] at daybreak, and asked me if I would like to go with them. I was only too glad to avail myself of her invitation, and so, like Pharaoh's daughter of old, I went with my gentle handmaiden every morning to the river bank, and, wading in about knee-deep in the thick red waters, we sat down and let the swift current flow by us. We dared not go deeper; we could feel the round stones grinding against each other as they were carried down, and we were all afraid. It was difficult to keep one's foothold, and Capt. Mellon's words were ever ringing in my ears, "He who disappears below

the surface of the Colorado is never seen again." But we joined hands and ventured like children and played like children in these red waters and after all, it was much nicer than a tub of muddy water indoors. A clump of low mesquite trees at the top of the bank afforded sufficient protection at that hour; . . . I thought of these poor people, who had never known anything in their lives but those desert places, and that muddy red water, and wondered what they would do, how they would act, if transported into some beautiful forest, or to the cool bright shores where clear blue waters invite to a plunge. (Ibid.) (Kindle Locations 1672-1685).

The Service must not engage in a single-species approach to riparian habitat without regard for other threatened and endangered species that live in that habitat. The Service must not implement zealous but unintelligent future "recovery" actions that risk violating Section 9 take prohibitions on this as well as other endangered and threatened species. Further, the rule is arbitrary and capricious because the Service has eagerly attacked the controlled use of FDA-approved agricultural pesticides without support of actual data while entirely failing to consider the harmful effects of its own use of the piscicides Antimycin-A and Rotenone.

The Service states at 61648:

Removal, reduction, or modification of cattle grazing has resulted in increases in abundance of some riparian bird species. For example, Krueper (1993, pp. 322–323) documented responses of 61 bird species, most of which increased significantly 4 years after removal of livestock grazing in Arizona's San Pedro River Riparian National Conservation Area (NCA). The bird species guilds that increased most dramatically were riparian species, open-cup nesters, Neotropical migrants, and insectivores, all species that share characteristics with the yellow-billed cuckoo.

While the Service obviously congratulates itself for alleged increases in bird life in the NCA at the expense of local ranching families, at the same time the Service must recognize that thriving populations of endangered warm water fishes that inhabited the San Pedro river for three hundred years coincident with livestock grazing suddenly disappeared altogether from the San Pedro National Conservation Area shortly after exclusion of livestock grazing. This has occurred on many other rivers in Arizona, e.g., the Upper Verde River. Elimination of grazing encouraged the growth of tall trees, which deepened the water and shaded it, i.e., it altered the fish and amphibian habitat from shallow warm water to deep cold water, which made the water friendly to cold-water invasive predators. (Neary et al. 2012)

The Service cites "channelization" as a threat to YBCU at 61622, 61643, 61646, 61647, 61653, 61656, 61661, 61662 and 61664. The Service has overlooked prehistoric and historical evidence of natural "channelization" and prehistoric evidence of arroyo incision and re-filling in southern Arizona, as well as the effects of major earthquakes in its assessment of historical riparian habitats. The Service has also ignored prehistoric agriculture near riparian areas. (Betancourt 1990) We incorporate by reference comments previously submitted on our behalf by Mr. Dennis Parker (Parker 2010) with regard to the Service's previous allegations of "channelization" being a threat to riparian ecosystems.

Too often the Service in managing for a single species harms other associated threatened and endangered species.

For example, in many situations such as the example stated above, the Service will then react to the disappearance of warm water fishes to predators, by use of rotenone and antimycin-A, which kill everything in the water while leaving all those contaminated, dead organisms available for the birds

and other animals to eat, and does nothing to protect birds that immediately might land near or drink the water. There is no data or monitoring on what this does to avian species that feed on the poisoned organisms. Rotenone is also linked to Parkinson's disease in humans, (Drolet et al. 2009) so for an organism as small as a YBCU, one would expect it to have a deleterious effect as well. We incorporate by reference the comments and attachments previously submitted to the Service by Mr. Dennis Parker (Parker 2011b) on this subject herein.

The YBCU depends on macro-invertebrate species for food, yet at least one study has shown that five years after use of rotenone on the Strawberry River in Utah, 24% of the species in the original macro-invertebrate community had still not returned to the treated area. It also showed long-term alteration (5 years or more) of macro-invertebrate community structure. (Magnum 1999) Since the YBCU depends on macro-invertebrates for food, it can be negatively impacted by the improper use of piscicides. Zealous but unintelligent decisions by the Service, such as exclusion of cattle from stream areas that have never been previously documented to have supported a forest structure, can therefore be expected to result in destruction of YBCU and other endangered species habitat, and illegal take of this and other endangered species.

Use of piscicides in such cases must be approached with extreme caution and long term monitoring before and afterwards of all species of concern. For all the crocodile tears the Service sheds over the controlled professional use of tested, certified and highly regulated agricultural pesticides, the rule is arbitrary and capricious because the Service failed to consider the effects of its own use of chemical piscicides on the YBCU.

The proposed rule is arbitrary and capricious, and violates Section 4 of the ESA by making inaccurate claims regarding the effects of present-day *controlled* livestock grazing, which is the only grazing that is done in Arizona. This violation of the ESA brings harm to the Pima NRC and our cooperators. First it libels us and damages our reputations. Second, the false accusations are made in a proposed rule in a manner that promises, if the rule is not withdrawn, to curtail our cooperators' livelihoods and subject them to new layers of restrictions on their lives that force them to bear new costs including potential loss of property rights, without compensation. The proposed rule also threatens to subjugate Arizona water rights to federal primacy. The Service continues to pretend all grazing is uncontrolled grazing no different from the practices that existed in the late 1890's, clearly ignoring the best available scientific and commercial information that has been presented to it time and again. The proposed rule is therefore arbitrary, capricious, illegal, and must be immediately withdrawn.

The Service makes broad sweeping accusations against livestock grazing as a threat to the YBCU. The Service knows these accusations are not founded in best available scientific and commercial information, preferring to cite information that is irrelevant to controlled grazing and which has been refuted in public comment with citations to numerous well-designed, peer reviewed studies many times previously. (Parker 2007) (Parker 2011a) We incorporate those comments and attachments previously submitted to the Service by Mr. Dennis Parker herein by reference.

Finally, the Pima NRC agrees with and supports the comments that were previously submitted by Mr. James Chilton on behalf of the Southern Arizona Cattlemen's Protective Association in response to this proposed rule. We also agree with the comments submitted on behalf of the Arizona Mining Association by Mr. Norm James.

Sincerely,



Cynthia P. Copping
Chairman, Pima NRC
Past President, SACPA

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