Limited Availability of Old Growth Cottonwood Nest Trees in the Northern Colorado Front Range

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October 5, 2022

The limited availability suitable old-growth or Plains Cottonwoods for bald eagle nests in areas of the northern Colorado Front Range (NCFR)—and specifically those at a sufficient distance from anthropogenic disturbance—has received little attention when it comes to protection of territorial bald eagles and their habitat in Colorado. Although a common assumption is that alternate nest trees should be easy for bald eagles to acquire, this is arguably not the case across the NCFR. Not only do NCFR Range bald eagles nest only in old growth cottonwoods, but a suitable tree for successful nesting generally requires: (1) significant distance from human activity (typically 0.25 to 0.5 miles); (2) a relatively open canopy for entry, exit, and field of view (3) close proximity to requisite resources including waterbodies, quarry ponds, wetlands, or prairie dog colonies; and (4) proper branch structure on which to support a heavy nest—older nests can exceed 1,000 pounds. Another limiting criterion is that when nesting bald eagles are uprooted or choose to relocate, they prefer to re-settle nearby. A study by Front Range Nesting Bald Eagle (FRNBES) researchers of 15 bald eagle nest moves from 2013 to 2020—largely after nest destruction or displacement— documents that the average nest move is only 1.18 kilometers (km) with a median of 700 meters (D. Bove, unpubl. data, 2022).

Studies by Friedman and Lee (2002) extrapolate a die-off of similar aged, old-growth cottonwoods at 160 years of age along ephemeral streams and ditches in the Front Range. Jonathan Friedman (written communication, 2017) also noted that most Front Range ditches date back to approximately 1900, and cottonwoods along those ditches are almost exclusively comprised of similar aged groupings of old-growth cottonwoods, now mostly approaching 120 years old. Since a large percentage bald eagle nests in the NCFR are located along such ditches, and due to their advanced age, there is a significant concern that nesting Bald Eagles may find it increasingly difficult to locate suitable old growth nesting substrate in the near future along the Front Range. Unlike Florida and more verdant areas in the United States where alternate bald

eagle nests are common, alternate nest trees are extremely uncommon in the NCFR. One likely explanation is the scarcity of suitable old-growth cottonwoods in these Front Range nest territories, although factors such as predation by raccoons and other animals may also come into play. Nevertheless, the lack of alternate nests—or suitable trees in which to build alternate nests—magnifies the disturbance of impacts on NCFR bald eagles.

A study of old growth cottonwoods in the Stearns Lake area in Boulder County https://frontrangeeagles.org/our-eagles/the-stearns-pair/; see section on "1,000 Cuts), provides a common example with respect to NCFR bald eagle nest territories where suitable nest trees, if needed, are in very short supply. As shown on Figure 1 in the 2020 report by Stahlecker (https://frontrangeeagles.org/wp-content/uploads/2022/09/BoulderCountyBAEAstatement13July2020.pdf) suitability of old growth cottonwood trees in the Stearns nest territory were ranked ranking based on overall size, structure, openness of canopy, and crotch structure. Mapping, as confined to trees within 2 km radius of the Stearns nest territory (https://frontrangeeagles.org/colorado-front-range-bald-eagle-nest-territories-and-prey/), indicates that there are very few old-growth cottonwoods suitable for nesting in the Stearns bald eagle nest territory. In fact, all old-growth cottonwoods identified in that 2 km radius circle are present within only 100 to 150 meters to pedestrian trails, roads, houses, and associated outbuildings. As a result, the Stearns territorial bald eagles in 2019 likely chose to nest in their best available alternative: a nearly dead old-growth cottonwood with poor supporting limbs for the nest (https://frontrangeeagles.org/our-eagles/the-stearns-pair/). Weekly (or nearly so) photographs documented the westward collapse of the nest, which finally gave way on April 18, 2020, causing the loss of the two nestlings. The near absence of suitable nest trees in the Stearns territory is one of the most challenging issues facing these nesting eagles today.

LITERATURE CITED

Friedman, J.M., and Lee, V., Extreme floods, channel change, and riparian forest along ephemeral streams. Ecological Monographs, v. 72(3), pp409-425.

Stahlecker, D.W., 2020. Statement for Boulder County Parks and Open Space Concerning bald eagles in relation to revised management plan for the Carolyn Holmberg Preserve at Rock Creek Farm (CHPRCF). Unpublished report prepared for FRNBES.