FY 2021 Summary of Wildlife Management Activities on

Travis County-managed Tracts of the Balcones Canyonlands Preserve



Black-capped vireo nest parasitized by a brown-headed cowbird on the Kotrla tract.

Photo by Natural Resources staff.

Travis County
Department of Transportation and Natural Resources
Natural Resources and Environmental Quality Division

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INTRODUCTION

The Balcones Canyonlands Preserve (BCP) was created in May 1996 to protect the endangered golden-cheeked warbler (*Setophaga chrysoparia*) and seven other federally endangered species. As specified in the Balcones Canyonlands Conservation Plan (USFWS 1996; hereafter BCCP), the City of Austin and Travis County developed and implemented a Land Management Plan (LMP) to provide guidelines for managing the BCP. The LMP Tier IIA-10 chapter (BCP 2007) describes the responsibilities and guidelines for wildlife management activities on the BCP, including controlling populations of non-native, exotic, feral, and nuisance animals.

Non-native, exotic, and feral animals are species that are not indigenous to an area and were typically brought in by human activity, either intentionally or unintentionally. Examples of non-native animals in Travis County include red-imported fire ants (*Solenopsis invicta*), tawny crazy ants (*Nylanderia fulva*), and feral hogs (*Sus scrofa*). These species may directly or indirectly negatively impact protected species in the form of habitat degradation, displacement, depredation, and reducing available foods. To meet the species protection and enhancement goals required under the terms and conditions of the BCCP, BCP land managers strive to remove non-native, exotic, and feral species, where feasible (BCP 2007).

Nuisance animals on the BCP are native species that may present threats to public health and safety, property, habitat health, or other natural resources due primarily to high population densities. Examples of nuisance animals on the BCP include brown-headed cowbirds (*Molothrus ater*) and white-tailed deer (*Odocoileus virginianus*). Management to control nuisance animals has been directed by the USFWS as part of the recovery plans for protected species (BCP 2007).

In Fiscal Year 2021 (01 October 2020 - 30 September 2021; hereafter FY21), wildlife management activities on Travis County-managed tracts of the BCP focused on five species of non-native, exotic, feral, and/or nuisance animals. Monitoring and control of brown-headed cowbirds, feral hogs, and white-tailed deer are described in their respective sections in this report. Monitoring and control of red-imported fire ants and tawny crazy ants are described in *Appendix T4* of the FY21 BCCP Annual Report.

BROWN-HEADED COWBIRDS

Introduction

Brown-headed cowbirds (hereafter cowbird) are known to parasitize the nests of the golden-cheeked warbler and the black-capped vireo (*Vireo atricapilla*), in addition to many other avian hosts (TPWD No Date). Historically, there has been little documentation of nest parasitism by cowbirds on the BCP, except for auxiliary observations from Natural Resources staff. The BCP LMP (BCP 2007) suggests that assessing and reducing cowbird parasitism should be a primary concern for the BCP and population management options should include physical removal of cowbirds and their eggs.

Cowbird trapping has been the subject of considerable research and management effort and is believed to be an important technique for the conservation of both species. At the U.S. Army's Fort Hood military base, cowbird trapping has been credited for drastically reducing parasitism rates of black-capped vireos from 91% before cowbird management, to below 20% after a cowbird management program was implemented (Kostecke *et al.* 2005). Population modelling data from Fort Hood suggests that sustained cowbird management is required to maintain viable black-capped vireo populations (Wilsey *et al.* 2014). Cowbird management success has contributed to the recovery effort and subsequent 2018 delisting of the black-capped vireo, and continued management is necessary to maintain black-capped vireo populations (USFWS 2018).

This report summarizes the results of the Travis County cowbird trapping program for FY21. The COVID-19 pandemic, government mandated shut-downs, and subsequent health and safety protocols restricted field activities for a portion of the cowbird trapping season and limited trapping effort in FY20. Trapping effort returned to previous levels with five active traps in FY21.

Methods

Cowbird trapping in FY21 was conducted exclusively in the western half of Travis County. Travis County Natural Resources and Parks staff operated four metal hybrid cowbird traps (6'x8') and one mega trap (16'x16'). Traps on the BCP were distributed near avian species breeding habitats to maximize trap effectiveness. Hybrid traps were operated on the Nootsie tract (Nootsie trap), Reimers Ranch Park (Reimers Ranch trap 1 and 2), and on private property adjacent to the Kotrla tract (Kotrla trap).

The mega trap was operated at Hamilton Pool (HP trap). Two traps (Vireo Ridge and Toops) were not operated in FY21 due to lack of productive trapping in previous years.

The Nootsie trap was opened on March 18, 2021 and baited with a group of live decoy birds (6 males, 3 females) acquired from a trapping effort on private land in Hays County. Additional cowbirds captured at the Nootsie trap were used to stock and open the other four cowbird traps during the trapping period. Table 1 summarizes the FY21 cowbird trapping schedule and initial stocking numbers of decoy birds.

Table 1. Summary of Brown-Headed Cowbird Trapping Effort, FY21, Travis County BCP, Texas.

Trap	Date Opened	Date Closed	Initial Stocking Numbers (Male/Female)
Nootsie	March 18	May 27	6/3
Kotrla	March 26	May 13	6/3
Hamilton Pool	April 1	May 28	5/10
Reimers Ranch 1	April 8	June 15	7/5
Reimers Ranch 2	April 21	June 16	4/1

Traps were inspected and maintained every day of the week throughout the trapping period, and any non-target species were removed and released. If staff was unavailable to conduct trap checks, the trap was shut by placing a board over the opening. Water and feed (whole millet seed) were refreshed three times per week. Plastic water baths and shade cloth were added to the traps to offset the impact of rising air temperatures on bird health and survivability. Some traps were reinforced with poultry fencing along the outer base edges to prevent attempted predation. The traps were shut down in May or June and cowbirds were euthanized by placing them in a container with carbon dioxide gas following Texas Parks and Wildlife Department (TPWD) protocol (TPWD No Date).

Results

The capture total in FY21 increased from the FY20 total of 18 individual cowbirds. In FY21, a total of 225 individual cowbirds were captured, including 143 males, 82 females, and zero juveniles. This increase is attributed to the return to normal trapping effort after the COVID-19 impacts in FY20, the relocation of traps to potential higher cowbird use areas, and fewer predation events at traps. Additionally, three non-targets were captured, including one northern cardinal (*Cardinalis cardinalis*), one bronzed cowbird (*Molothrus aeneus),* and one yellow-headed blackbird (*Xanthocephalus xanthocephalus*). Table 2 summarizes cowbird captures

at each trap by sex, days of operation, and trapping efficiency (or capture rate). Trap success was calculated by dividing the number of females captured by the number of days in operation (x 100).

Travis County Natural Resources aims to maintain a minimum goal of 20% trap efficiency for the program. In FY21, the average trapping efficiency was 27.33% from all five traps, with two traps (Hamilton Pool, Kotrla) meeting or exceeding this 20% threshold. The Kotrla trap continues to be the most productive trapping location due to its proximity to rural areas and livestock.

Table 2. Results of Brown-Headed Cowbird Trapping Effort, FY21, Travis County BCP, Texas.

Trap	Days in Operation	Males Captured	Females Captured	Total Captured	Overall Trap Efficiency %
Nootsie	70	25	11	36	15.71
Kotrla	48	46	37	83	77.08
Hamilton Pool	57	27	14	41	24.56
Reimers Ranch 1	68	13	13	26	19.12
Reimers Ranch 2	57	32	7	39	12.28
Grand Totals	**300**	**143**	**82**	**225**	**27.33**

Four out of the 17 black-capped vireo nests in an area of high cowbird activity on the Kotrla tract showed signs of depredation (broken eggs, eggs on the ground) and cowbird parasitism (cowbird eggs or nestling in nest). Just one of these four nests had a single black-capped vireo successfully fledge the nest. Additionally, Natural Resources staff observed a golden-cheeked warbler adult feeding a cowbird fledgling on the Lime Creek tract while conducting enumeration surveys.

An additional trap was operated near Pogue Preserve at Reimers Ranch (trap 2) in response to observed cowbird parasitism of black-capped vireo nests in FY20. Natural Resources staff will assess the needs and resources of cowbird management and future trapping efforts prior to the FY22 trapping period.

FERAL HOGS

Introduction

The BCP Land Management Plan (BCP 2007) directs land managers to control populations of feral hogs to minimize negative impacts to the native wildlife protected within the BCP. Feral hogs degrade wildlife habitats and may compete directly with

native wildlife for resources. They are omnivorous, primarily consuming vegetation, mast, roots and tubers, and to a lesser degree a wide range of animal species, including invertebrates, reptiles, amphibians, small mammals, and birds (Bradley and Schmidly 2016, Hellgren 1993). Their rooting habits create severely disturbed areas, which may lead to a localized shift in plant succession and increase the potential for soil erosion (Bradley and Schmidly 2016). Feral hogs also destabilize wetland areas, springs, creeks and other riparian areas through excessive rooting and wallowing. Their threat to humans and livestock through the spread of disease has also been documented (Miller 1993, U.S. Department of Agriculture 1999). Potentially producing two litters a year, with an average litter size of four to eight piglets, feral hog numbers can expand rapidly if left unmanaged (Wildlife Services 2012).

Methods

Standard feral hog trapping operation for Natural Resources staff includes setting up corral style stock panel traps baited with game feeders filled with dry feed corn. Staff can operate up to six traps at a time. Each trap utilizes a wireless camera system that sends real-time images to a trapper's cell phone. The trapper monitors feral hog activity inside the trap and chooses when to remotely close the trap door. The trapper strives to trap the entire sounder at the same time. Trapped feral hogs are humanely dispatched, and carcasses are composted on the BCP.

An additional harvest method involves shooting feral hogs opportunistically or from a stand as they come to a feeder. This method is incidental to the deer management program and is carried out by Orion Research and Management Services (Orion).

Results

Management efforts in FY21 produced similar results to the 37 feral hogs removed in FY20. In FY21, a total of 39 feral hogs were removed from the BCP, with 28 captured in traps and 11 taken from a stand. Trapping effort in FY20 was affected by the COVID-19 shutdown but returned to previous levels in FY21. Table 3 summarizes the number of feral hogs harvested on the Travis County BCP in FY21 based on tract and sex.

Since implementing a feral hog monitoring and trapping system in FY17, Natural Resources staff have observed a steady decline in feral hog field observations. Reduced trapping numbers in FY20 and FY21 suggest a decrease in the feral hog population after high levels of trapping in FY17, FY18, and FY19 resulted in 174, 127, and 114 feral hogs removed, respectively.

Table 3. Results of Feral Hog Harvest Effort, FY21, Travis County BCP, Texas.

Tract	Sex (Male/Female)	Harvest Method (Trapping/Incidental Shooting)	Total
Karnik	0/0	0/0	0
Canyon Vista	1/3	4/0	4
Ribelin	0/0	0/0	0
Sam Hamilton East	8/5	13/0	13
Concordia	0/0	0/0	0
Webb	0/1	0/1	1
Kotrla	8/7	9/6	15
Scott & White	1/2	0/3	3
Hamilton Pool	0/0	0/0	0
Trails End 705	1/1	2/0	2
Medway	1/0	1/0	1
Total	**20/19**	**29/10**	**39**

WHITE-TAILED DEER

Introduction

The BCP Land Management Plan (BCP 2007) directs that white-tailed deer populations be monitored and maintained at a level that allows for successful recruitment of plant species that make up habitat supporting BCCP protected species. Central Texas historically has some of the highest population densities of white-tailed deer in the United States (Richards 2001). Past research in Central Texas (Russell and Fowler 1999, Russell and Fowler 2002, Russell *et al.* 2001) indicates that little or no regeneration of vital habitat components may occur in areas with an over-population of deer. This generated an effort to design and implement a white-tailed deer population monitoring and control program for Travis County BCP properties.

Methods

Natural Resources staff conducted nighttime spotlight deer surveys on the Kotrla Unit of the BCP and the Hamilton Pool Preserve/Reimers Ranch Park/Pogue Springs Preserve. Additionally, camera surveys were run as described in Oetgen *et al.* (2008) on the Jollyville Unit. This camera survey method provides a more accurate population estimation of white-tailed deer in areas where there is a lack of infrastructure needed to perform nighttime spotlight surveys (Roberts *et al.* 2006).

TPWD (2000) recommends population levels in the Texas Hill Country of one deer per 15-20 acres for effective songbird habitat management, and some research

indicates population targets of one deer per 30-40 acres for successful hardwood forest regeneration. The goal on the BCP is to have a deer density of approximately one deer per 15-30 acres.

Deer harvested by Orion from October 2020 to January 2020 were shot from stands located near game feeders baited with feed corn. Orion holds a Scientific Permit through TPWD and collects biological samples from harvested deer that are tested for disease and used for research. All meat from harvested deer is donated to Caritas of Austin through the Hunters for the Hungry Program.

Results

Deer population survey data gathered from September to October 2020 was used to estimate FY21 deer densities. Table 4 summarizes deer population data on the BCP collected from spotlight and camera surveys. A total of 87 deer were harvested from October 2020 to February 2021. A summary of the deer harvested on Travis County BCP properties in FY21 is shown in Table 5. Deer population densities on the BCP remain within the management objective of one deer per 15-30 acres, reflecting current harvest strategies as an effective management tool.

Table 4. Results of White-tailed Deer Population Survey, FY21, Travis County BCP, Texas.

Location	Estimated Acres/Deer	Estimated Composition (Buck/Doe/Fawn)
Jollyville Unit*	22	23/22/1
Kotrla Unit**	19	23/24/5
HP/RR/Pogue Preserve	12	43/116/56

*Includes Snowden and Vireo Ridge tracts
**Includes Kotrla and Scott & White tracts

Table 5. Results of White-tailed Deer Harvest, FY21, Travis County BCP, Texas.

Location	Bucks	Does	Total
Jollyville Unit*	12	2	**14**
Kotrla Unit**	23	17	**40**
Webb	2	0	**2**
Medway	5	8	**13**
Hamilton Pool	3	2	**5**
Volente	10	3	**13**
Total	**55**	**32**	**87**

*Includes Snowden and Vireo Ridge tracts
**Includes Kotrla and Scott & White tracts

Natural Resources staff will continue to monitor the deer population on Travis County-managed BCP tracts and work to implement TPWD recommendations concerning management strategies and harvest levels. Deer management should continue in order to keep deer population levels at or below carrying capacity. Annual population surveys allow managers to evaluate the effectiveness of management strategies, determine whether desired deer densities have been attained, and calculate future harvest recommendations.

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