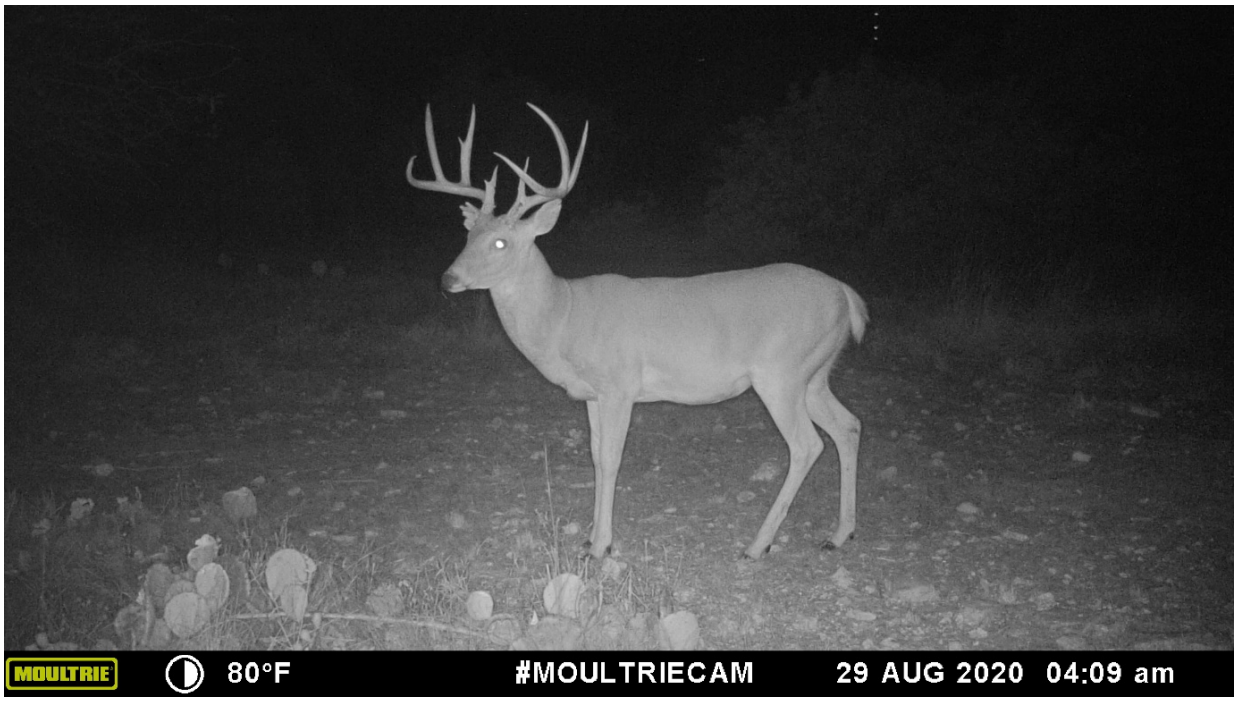
FY 2020 Summary of Wildlife Management Activities on

Travis County-managed Balcones Canyonlands Preserve Tracts



"Torn Ear" captured on deer camera survey on Jollyville Unit of the BCP.

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 animal 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. In order 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 (BCP 2007) where feasible.

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. 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 2020 (01 October 2019 - 30 September 2020; hereafter FY20), wildlife management activities on Travis County-managed portions of the BCP focused on five species. Monitoring and control of cowbirds, feral hogs, and deer are described in their respective sections in this report. Fire ant control and tawny crazy ant monitoring efforts are described in *Appendix U4* of the FY20 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. 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 Fort Hood U.S. Army 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). More recent 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).

Historically, there has been little documentation of nest parasitism by cowbirds on the BCP. In FY20, we observed abandoned black-capped vireo nests on Reimer's Ranch Park/Pogue Preserve in an area with high cowbird activity. The nests showed signs of predation (broken eggs, eggs on the ground) and cowbird parasitism (cowbird eggs in nest). This area has shown an increased sign of productivity over the past few years and while there is currently a trap at Reimers Ranch Park, there are plans to place one in closer proximity to this area of black-capped vireo habitat.

This report summarizes the results of the Travis County cowbird trapping program for FY20. 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.

Methods

County staff operated a single metal hybrid cowbird trap (6'x 8') on the Nootsie tract (Nootsie trap) in western Travis County. The trap's proximity to the Travis County Nootsie field office made it easy to access and monitor safely.

The Nootsie trap opened on 06 April 2020 with a group of decoy birds (4 males, 3 females) acquired from a trapping effort on private land in Hays County. Table 1 summarizes the FY20 cowbird trapping schedule and initial stocking numbers of decoy birds.

Table 1. Summary of Brown-Headed Cowbird Trapping Effort, FY20, Travis County BCP, Texas.

Trap	Date Opened	Date Closed	Initial Stocking Numbers
Nootsie Tract	April 6	May 14	4 Males, 3 Females

The trap was inspected and maintained every day throughout the season. Water and feed (whole millet and milo seed) was refreshed as needed. Shade cloth was added to the trap to offset the impact of rising air temperatures on bird health and survivability. If staff was unavailable to check for non-target species on the weekend, the trap was shut by placing a board over the opening. No non-target species were trapped. The trap was shut on 14 May 2020 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

A total of 10 male and 8 female cowbirds were captured in FY20. Cowbird trapping results for the Nootsie trap from FY16 - FY20 are shown in Table 2. Trap efficiency (or capture rate) is calculated by dividing the number of females captured by the number of days in operation (x 100).

Table 2. Results of Brown-Headed Cowbird Trapping Effort for the Nootsie Trap, FY16 - FY20, Travis County BCP, Texas.

Trap	Days in Operation	Males Captured	Females Captured	Total Captured	Overall Trap Efficiency %
FY16 Nootsie	69	17	5	22	7.25
FY17 Nootsie	87	16	19	35	21.84
FY18 Nootsie	66	17	2	19	3.03
FY19 Nootsie*	70	21	3	24	4.29
FY20 Nootsie	39	10	8	18	20.51
Total	**331**	**81**	**37**	**118**	**11.18**

*Updated to show data corrections.

The Nootsie trap exceeded the Travis County Natural Resources minimum program goal of 20% trap efficiency. FY20 trap efficiency of 20.51% was an increase from FY19 of 4.29%, and nearly as many cowbirds were captured in roughly half the time. While more rural traps have met or exceeded program goals in previous years, the Nootsie trap exceeded this goal while operating the least number of days within the past five fiscal years (Table 2). The increase in trap efficiency can be partially attributed to the length and timing of the trap's operation. Opening a trap at the very beginning of the golden-cheeked warbler breeding season and closing it once productivity begins to drop off may maximize trapping effort when staffing resources are limited.

FERAL HOGS

Introduction

The BCP (2007) Land Management Plan directs land managers to control populations of feral hogs in order to minimize negative impacts to the native wildlife protected within the BCP. Feral hogs degrade wildlife habitat and compete directly with native wildlife for food. 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, and an average litter size of four to eight piglets, feral hog numbers can expand rapidly if left unmanaged (Wildlife Services 2012).

The COVID-19 pandemic government mandated shut-downs, and subsequent health and safety protocols, limited Travis County staff's feral hog trapping efforts for a portion of FY20.

Methods

Standard feral hog trapping operation for Travis County staff includes setting up corral style stock panel traps and baiting with game feeders filled with dry corn. Staff can operate up to five traps at a time. Each trap uses a wireless camera system that sends images to a trapper's cell phone. The trapper monitors hog activity in the trap and chooses when to remotely close the trap door. Trapped hogs are humanely dispatched and carcasses are composted on the BCP.

An additional harvest method involves shooting hogs 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

In FY20, a total of 37 feral hogs were removed from the BCP, including 33 captured in traps and four taken from a stand. Table 3 summarizes the number of hogs harvested based on tract and sex on the Travis County BCP in FY20.

Table 3. Results of Feral Hog Trapping Effort, FY20, Travis County BCP, Texas.

Tract	Sex (Male/Female)	Total
Karnik	0/0	0
Canyon Vista	2/3	5
Ribelin	7/2	9
Sam Hamilton East	5/0	5
Concordia	1/0	1
Webb	0/0	0
Kotrla	3/10	13
Scott & White	2/2	4
Hamilton Pool	0/0	0
Total	**20/17**	**37**

FY20 saw a significant decrease in the total number of harvested hogs from the FY19 total of 114. This decrease is attributed to three factors:

1. The COVID-19 pandemic brought on operational changes to the BCP. No trapping was done from mid-March to late-April, and only one or two traps were in operation at a time until early-August.

2. Technical and billing issues with the remote camera service provider led to inactive traps for extended periods of time throughout FY20.

3. County staff noted that increased trapping effort and success led to a general decline in feral hog density since FY17.

WHITE-TAILED DEER

Introduction

The BCP (2007) Land Management Plan 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 BCP 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 as specified in the LMP Tier IIA-10.

Methods

Travis County 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 currently 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 are shot from stands located near corn feeders. 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 August to September 2019 was used to estimate FY20 deer densities (Table 4). A total of 39 deer were harvested from October 2019 to January 2020 (Table 5). Overall population trends on the BCP reflect harvest strategies as an effective management tool.

Table 4. Results of White-tailed Deer Population Survey, FY20, Travis County BCP, Texas.

Location	Acres/Deer	Estimated Composition (Buck/Doe/Fawn)
Jollyville Unit	23	28/36/6
Kotrla Unit	21	14/41/5
HP/RR/Pogue Preserve	13	51/109/38

Table 5. Results of White-tailed Deer Harvest, FY20, Travis County BCP, Texas.

Location	Bucks	Does	Total
Jollyville Unit*	5	5	**10**
Webb	0	1	**1**
Volente	5	3	**8**
Kotrla Unit**	12	8	**20**
Total	**22**	**17**	**39**

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

Travis County staff will continue to monitor the deer population on Travis County-managed land and work to implement TPWD recommendations concerning management strategies and harvest levels. Deer management should continue as population survey data indicates that deer herds exceed 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.

LITERATURE CITED

Balcones Canyonlands Preserve Land Management Plan. 2007. Balcones Canyonlands Preserve land management plan, Tier IIA-10, Animal Management. Unpublished document. Travis County, Texas, USA. https://www.traviscountytx.gov/tnr/nr/bccp/reports

Bradley, R. D., and D. J. Schmidly. 2016. The mammals of Texas. University of Texas Press, Austin, USA.

Hellgren, E. C. 1993. Biology of feral hogs (*Sus scrofa*) in Texas. Pages 50–58 *in* C. W. Hanselka and J. F. Cadenhead, editors. Feral swine: a compendium for resource managers: proceedings of a conference. Texas Agricultural Extension Service, San Angelo, USA.

Kostecke, R. M., S. G. Summers, G. H. Eckrich, and D. A. Cimprich. 2005. Effects of brown-headed cowbird (*Molothrus ater*) removal on black-capped vireo (*Vireo atricapilla*) nest success and population growth at Fort Hood, Texas. Ornithological Monographs 57:28–37.

Miller, J. E., 1993. A national perspective on feral swine. Pages 9–16 *in* C. W. Hanselka and J. F. Cadenhead, editors. Feral swine: a compendium for resource managers: proceedings of a conference. Texas Agricultural Extension

Service, San Angelo, USA.Oetgen, J. G., B. C. Lambert, Jr., and J. D. Whiteside. 2008. Surveying white-tailed deer populations using infrared-triggered cameras.
https://tpwd.texas.gov/publications/pwdpubs/media/pwd_br_w7000_1444.pdf

Richards, B. 2001. The deer dilemma: to fence or not to fence? Conference sponsored by Texas Parks and Wildlife Department. Reicher Ranch. June 15, 2001.

Roberts, C. W., B. L. Pierce, A. W. Braden, R. R. Lopez, N. J. Silvy, P. A. Frank, D. Random, Jr., and A. Jara. 2006. Comparison of camera and road survey estimates for white-tailed deer. Journal of Wildlife Management 70:263–267.

Russell, F. L., and N. L. Fowler. 1999. Rarity of oak saplings in savannas and woodlands of the eastern Edwards Plateau, Texas. The Southwestern Naturalist 44(1):31–41.

Russell, F. L., and N. L. Fowler. 2002. Failure of adult recruitment in *Quercus buckleyi* populations on the eastern Edwards Plateau, Texas. American Midland Naturalist 148:201–217.

Russell, F. L., D. B. Zippen, and N. L. Fowler. 2001. Effects of white-tailed deer (*Odocoileus virginianus*) on plants, plant populations and communities: a review. American Midland Naturalist 146:1–26.

Texas Parks and Wildlife Department. No Date. Trapping brown-headed cowbirds to control songbird nest parasitism. www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_1148.pdf

U.S. Department of Agriculture [USDA]. 1999. Wild pigs: hidden dangers for farmers and hunters. Agriculture Information Bulletin No. 620. USDA. Riverdale, MD.

U.S. Fish and Wildlife Service. 1996. Final Environmental Impact Statement/Habitat Conservation Plan for Proposed Issuance of a Permit to Allow Incidental Take of the Golden-cheeked Warbler, Black-capped Vireo, and six karst invertebrates in Travis County, Texas.

U.S. Fish and Wildlife Service. 2018. “Endangered and Threatened Wildlife and Plants; Removing the Black Capped Vireo From the Federal List of Endangered and Threatened Wildlife.” 83 *Federal Register* 73, 16228-16242 (16 April 2018). https://www.govinfo.gov/content/pkg/FR-2018-04-16/pdf/2018-07350.pdf

Wildlife Services. 2012. Managing feral hog damage. Pamphlet No. EL-1925. https://www.agrilifebookstore.org/Managing-Feral-Hog-Damage-p/el-1925.htm

Wilsey, C. B., J. J. Lawler, D. Cimprich, and N. H. Schumaker. 2014. Dependence of the endangered black-capped vireo on sustained cowbird management. Conservation Biology 28: 561–571.