2003 SUMMARY OF

WILDLIFE MANAGEMENT ACTIVITIES

ON TRAVIS COUNTY MANAGED TRACTS OF THE

BALCONES CANYONLANDS PRESERVE





Travis County Parks and Natural Resources

Project Numbers 0905-0220, 0905-0226, 0905-0332

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INTRODUCTION

On May 2, 1996, the City of Austin and Travis County were jointly issued a U.S. Fish and Wildlife Service (USFWS) regional permit (the Permit) referred to as the Balcones Canyonlands Conservation Plan (BCCP) that allows incidental "take" of eight locally occurring endangered species under Section 10(a)1(b) of the Endangered Species Act (U. S. Department of the Interior, Fish and Wildlife Service, 1996a). The thirty-year permit covers western Travis County outside of proposed Preserve boundaries identified in the Habitat Conservation Plan and Final Environmental Impact Statement (HCP/FEIS) (U. S. Department of the Interior, Fish and Wildlife Service, 1996b). The permit also covers incidental take of 27 species of concern should any become listed as threatened or endangered during the life of the Permit. The City of Austin and Travis County (the Permit Holders) are required by the terms of the Permit to assemble and manage 30,428 acres of suitable habitat for the benefit of these species. This series of protected lands is known as the Balcones Canyonlands Preserve (BCP).

The negative impacts of non-native, nuisance and invasive species have been well documented throughout Texas and around the world. The BCP Land Management Plan, approved by the USFWS on September 08, 1999 directs management of the BCP, including control of non-native, nuisance and invasive species. In response to the potential human health and safety, economic, and environmental impacts, Travis County drafted general guidelines to direct management of these species in FY2002. The purpose of the *Travis County Parks and Preserves Wildlife and Vegetation Management Guidelines* (Guidelines) is to recognize that threats may be posed by these species, outline appropriate management strategies, and provide management authority to implement measures to minimize these threats.

The Guidelines are intended to provide direction to managers for lands throughout the County system, and are anticipated to represent a continually updated and flexible set of directives that are able to meet the needs of a changing environment. As new species or conditions are discovered, this information will be incorporated to provide current status of the conditions and challenges faced by County Park and Preserve land managers.

Animal management activities approved under the Guidelines may include reducing, relocating or eliminating individuals or populations of specifically identified species. Variations in management objectives for each property may dictate different management actions for the same species on different tracts.

Exotic animals are defined by the Texas Parks and Wildlife Department as grass-eating or plant-eating, single hoofed or cloven-hoofed mammals (ungulates) that are not indigenous or native to Texas, including animals from the deer and antelope families. Ranch and game managers throughout Texas have introduced such animals for various reasons. Animals considered exotic include Axis deer, Blackbuck antelope, Elk, Fallow deer, Nilgai antelope, Russian boars, and Sika deer. Non-native animals are species not indigenous to Texas, but which fall outside of the TPWD definition of "exotic". Examples of non-native animal species in Travis County include English sparrows, European starlings, red-imported fire ants, and rock doves (or pigeons).

Feral animals are wild populations of otherwise domesticated species that have through release or escape reverted to a wild condition. Feral species found in Travis County include house cats, dogs, goats and hogs. Nuisance animals are native species that present threats to human health and safety, to County property, or to other natural resources due to population densities, by providing a disease reservoir, or other threat. Nuisance animals may include species such as brown-headed cowbirds, coyotes, opossum, and white-tailed deer.

Wildlife management activities on Travis County managed portions of the BCP in FY2003 focused on three species: brown-headed cowbirds (*Molothrus ater*), feral hogs (*Sus scrofa*), and white-tailed deer (*Odocoileus virginianus*).

BROWN-HEADED COWBIRDS

INTRODUCTION

Nest parasitism by the brown-headed cowbird (*Molothrus ater,* hereafter cowbird) is considered a significant reason for the decline of both black-capped vireos (*Vireo atricapilla*) and golden-cheeked warblers (*Dendroica chrysoparia*). Cowbird trapping is an important management technique to improve nesting success for both of these endangered species. This report summarizes the results of the 2003 Travis County brown-headed cowbird-trapping program. Traps were operated at five sites within Travis County's Balcones Canyonlands (BCP) preserve lands: one trap at Hamilton Pool Preserve and four traps on or adjacent to the Jollyville Unit. The Jollyville Unit traps were located at the Vireo Ridge tract (2 sites), the Grandview Hills tract, and a private ranch adjacent to the Jollyville Unit on FM 2769.

BACKGROUND

Cowbird trapping was previously conducted in Travis County for the Balcones Canyonlands Preserve by Espey Huston and Associates and DLS Associates (1989), and Texas Animal

and Damage Control (1990-1996). In 1997 Travis County Natural Resources Department initiated its own cowbird trapping program. This program was co-managed with the City of Austin until 2001, at which time the City of Austin began operating a program independently. Since 1997, trap locations have been added or removed according to trap success or failure and access availability.

METHODS

Cowbird trapping in 2003 was conducted exclusively in the western half of the county (where black-capped vireo and golden-cheeked warbler habitat occurs). Travis County operated two mega traps (16'x16'), one wooden hybrid trap and two Texas Parks & Wildlife metal hybrid traps (both types, 6'x8'). A new mega trap was constructed on private property at the FM 2769 site, and the existing trap was moved to a new site on the Vireo Ridge tract. This new location was based on proximity to endangered avian habitat and previous trapping success along power line corridors. This brought the total traps in operation to five.

Decoy birds (31 males, 27 females) were obtained from Texas Parks and Wildlife and The Nature Conservancy of Texas (Fort Hood Program). These decoys were used to open three traps (Hamilton Pool Preserve, Vireo Ridge tract #2 and FM 2769). Cowbirds captured in these traps were eventually transferred to the remaining two traps.

The following table summarizes the 2003 cowbird trapping schedule and initial stocking numbers (decoy birds).

Trap location	Date opened	Date closed	Initial stocking numbers
FM 2769	March 1	July 23	10 males, 4 females
Hamilton Pool Preserve	March 1	June 18	15 males, 9 females
Vireo Ridge tract 1*	March 1	July 23	16 males, 3 females
Grandview Hills tract	March 13	June 23	4 males, 7 females
Vireo Ridge tract 2 (new trap)	March 18	July 23	11 males, 4 females

* This trap was closed for 21 days in April due to low trap success

Traps were checked at least 3 times a week throughout the season until juvenile cowbirds began appearing in traps on a regular basis. Traps were then checked more frequently. Juveniles were immediately euthanized to deter any further care by host species. Water and feed (milo) were refreshed on each visit. Plastic baths were added to the traps to help offset rising temperatures. Some traps were reinforced with poultry fencing along the outer base edges to prevent digging by predators attempting to gain access. Non-target species, including snakes, were removed unharmed.

RESULTS AND DISCUSSION

During the 2003 season a total of 187 male, 180 female and 9 juvenile cowbirds were captured (376 total). The following table summarizes cowbird captures at each trap by class

Trap location	Month	Days in operation	Males captured	Females captured	Juveniles captured	Total	Trap efficiency (%)
FM 2769	March	31	11	9	0	20	29.0
	April	30	8	27	0	35	90.0
	May	31	10	18	0	29	58.1
	June	30	1	1	1	3	3.33
	July	23	1	3	2	6	13.0
	Total	**145**	**31**	**58**	**3**	**92**	**40.0**
Grandview Hills	March	19	5	3	0	8	15.8
	April	30	2	12	0	14	40.0
	May	31	5	6	0	11	19.4
	June	23	1	3	0	4	13.0
	Total	**133**	**13**	**24**	**0**	**37**	**23.3**
Hamilton Pool Preserve	March	31	78	39	0	117	125.8
	April	30	27	34	0	61	109.7
	May	31	8	8	0	16	25.8
	June	17	2	1	0	3	5.9
	Total	**109**	**115**	**82**	**0**	**197**	**75.2**
Vireo Ridge #1	March	28	2	0	0	2	0
	April	10*	1	0	0	1	0
	May	31	2	1	1	4	3.2
	June	30	1	0	1	2	0
	July	23	2	3	2	7	13.0
	Total	**122**	**8**	**4**	**4**	**16**	**3.3**
Vireo Ridge #2	March	14	3	3	0	6	21.4
	April	30	7	5	0	12	16.7
	May	31	1	2	0	3	6.5
	June	30	2	1	0	3	3.2
	July	23	6	1	2	9	4.3
	Total	**128**	**19**	**12**	**2**	**33**	**9.4**
Grand Total		**637**	**187**	**180**	**9**	**376**	**28.3**

* Trap was closed from April 3 to April 22 due to low trap success.

(male, female, and juvenile), month and efficiency (capture rate) for 2003. Trap efficiency is calculated by dividing the number of females captured by the number of days in operation (x 100).

Although several non-target species were trapped, most (92%) avian species and all snakes were released unharmed. The following list notes all non-target species, including snakes, which were found in traps.

Common name	Species name	Trap	Comments
House sparrow	*Passer domesticus*	GVH	Males, females and juveniles, released, 11 instances
European starling	*Sturnus vulgaris*	GVH	Males, 1 euthanized, 1 found dead
Northern cardinal	*Cardinalis cardinalis*	VR#1, VR#2	Adults, released, 6 instances
Northern mockingbird	*Mimus polyglottus*	VR#2	Adult, released
Red-winged blackbird	*Agelaius phoeniceus*	HP	Adult male, released
Yellow-headed blackbird	*X. xanthocephalus*	FM2769	Adult females, released, 4 instances
Ratsnakes	*Elaphe sp.*	GVH, VR#2	Released, 3 instances

Overall, the greatest cowbird capture rate occurred at Hamilton Pool Preserve (75.2%). The greatest monthly capture rates were in March and April at Hamilton Pool Preserve (125.8% and 109.7%, respectively) and in April at the FM 2769 trap (90.0%).

The greatest number (78) of female cowbird captures occurred during April, although March was also successful with 54 females captured. These two months accounted for 73.3% of all females captured and 73.4% of total cowbirds (male and female) captured. Only nine juvenile cowbirds were captured in 2003, which is substantially less than the total number (35) of juveniles captured in 2002. This decline in juvenile capture rate may indicate an overall success in removing females out of adjacent endangered avian species habitat.

The 2003 Hamilton Pool Preserve cowbird trap was Travis County's most successful trap (75.2%) since the inception of the cowbird control program. The capture rate was also substantially greater than in previous years (5.2% and 9% in 2001 and 2002, respectively). This success rate was probably affected by the early opening date and possibly by the temporary increase of livestock on a motion picture set on an adjacent property during the trapping season. The success of this trap was also apparent by the far less frequent sightings of cowbirds in habitat as compared to 2002.

Trap placement continues to be the limiting factor for the cowbird control program due to the lack of feeding and roost sites. Coordinating with neighboring landowners, especially those with livestock, may provide opportunities for optimal trap sites. Large numbers of cowbirds, similar to those seen at Hamilton Pool Preserve in previous years, were observed in sections of the Steiner tract during the 2003 breeding season. Trapping at Steiner ended after the 2000 season due to very low success rates, most likely due to trap placement. However, due to the great numbers of cowbirds witnessed there, adding a trap in the vicinity of the Steiner tract should be a priority on 2004.

No evidence of nest parasitism of black-capped vireos or golden-cheeked warblers was noted during the 2003 field season. Abandoned white-eyed vireo (*Vireo griseus*) nests with cowbird eggs deposited inside were found at Hamilton Pool Preserve and the Vireo Ridge tract (one instance each). Two instances of blue-grey gnatcatchers (*Polioptila caerulea*) tending to cowbird young were witnessed, one instance each at the Grandview Hills tract and the Vireo Ridge tract. A third instance of a cowbird hatchling was noted on the Vireo Ridge tract, however the host species was never determined. Data on nest parasitism rates, primarily of black-capped vireos and, when possible, golden-cheeked warblers, will continue to be collected to assess the program's effectiveness.

FERAL HOGS

INTRODUCTION

The BCP Land Management Plan directs land managers to control populations of feral hogs to ensure minimal negative impacts to the native wildlife protected by the preserve system. Feral hogs degrade wildlife habitat and compete directly with native wildlife for food. Hogs 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 (Davis 1994, Hellgren 1997). Their rooting habits create severely disturbed areas, which may lead to a localized shift in plant succession and increase the

potential for soil erosion (Davis 1994). 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 1997, U.S. Department of Agriculture 1992). Producing two litters a year, with an average litter size of four to eight piglets, hog numbers can expand rapidly if left unmanaged (Texas Wildlife Damage Management Service 1998).

BACKGROUND

Travis County Natural Resources Department is responsible for the management of non-native wildlife on County owned and managed portions of the BCP. The two Preserve areas showing signs of significant feral hog populations included Steiner Ranch Preserve and the Jollyville Unit. The Steiner Ranch Preserve benefited from independent hog-trapping programs conducted by the managers of the Steiner Ranch communities as well the efforts by the City of Austin on the adjacent BCP Cortaña tract. The County therefore focused feral hog management efforts on the Jollyville Unit.

Large wallows, rooted areas, well-worn trails, and first-hand staff encounters in the field verified the significant hog population occupying the Jollyville Unit. In October 2001, Travis County contracted with a hog-trapper to begin removing feral hogs Trap placement and baiting began in late 2001 and the first hogs were removed in January 2002. The contractor also had access to private property adjacent to the Jollyville Unit and continued to remove hogs from this tract as well.

In October of 2002, the contractor's license to continue trapping and removing feral hogs from the County's Jollyville Unit was extended for an additional one year period.

METHODS AND RESULTS

Trapping of feral hogs on the Jollyville Unit and an adjacent privately owned tract began in October of 2002 and continued through early July 2003. No trapping was attempted during the hottest summer months (July-September) to avoid unnecessary heat stress to trapped hogs. The contracted trapper utilized a number of his own stock panel and heavy welded-wire traps as well as commercially produced traps provided by the County

Trapping effort was focused in areas showing significant hog damage throughout the Jollyville Unit and the adjacent private property. Standard operation included setting and baiting traps with corn and occasionally rotten fruit. Traps were routinely baited in the late afternoon and checked late at night or early the following morning. Traps were operated in a

given location until signs of hog activity in the area subsided, at which point they were relocated and re-set in new trapping sites.

A total of 20 hogs were removed during FY2003, as compared to a total of 103 hogs trapped from the same property over the same time period in the previous year (Travis County Natural Resources 2002). A total of 15 hogs were removed directly from the Jollyville Unit and an additional five were taken from neighboring private properties.

DISCUSSION

With no quantifiable measure of trapping effort, it is not possible to determine if the apparent decline in trapping success is an indication of the success of the prior year's efforts, a reflection of reduced trapping effort by the contractor, or the result of some other factor. Newly rooted areas and recent wallows are still apparent on the preserve. Without statistically valid population estimates and quantifiable measures of trapping effort, the success of the trapping and removal efforts on the Jollyville Unit are uncertain.

WHITE-TAILED DEER

INTRODUCTION

The BCP Land Management Plan directs that deer populations be monitored and maintained at a level that allows for successful recruitment of plant species which make up habitat supporting the species listed in the permit (e.g. the golden-cheeked warbler and the black-capped vireo). Central Texas currently has the highest population density of white-tailed deer in the United States (Richards 2000). Recent research indicating that little or no regeneration of vital habitat components is occurring on some Preserve tracts (Russell and Fowler, 1999; Russell and Fowler 2002; Russell, et. al. 2001) has generated an effort to design and implement a white-tailed deer population monitoring and control program for Travis County BCP properties.

METHODS

Travis County staff collected data in the summer and fall of 2003 to determine the current status of the white-tailed deer population on select BCP tracts in accordance with Texas Parks & Wildlife Department (TPWD) guidelines. Census results indicate that the preserve currently hosts a population exceeding the carrying capacity for songbird habitats. These surveys estimate deer densities of approximately 1 deer per 5.6 acres. TPWD currently recommends population levels of 1 deer to 15-20 acres for effective songbird habitat management, and some research indicates population targets of 1 deer per 30 to 40 acres for

successful hardwood forest regeneration. Without changes in future management practices, the deer population will continue to cause habitat deterioration within the preserve.

Travis County obtained a TPWD Antlerless and Spike White-tailed Deer Control Permit (ADCP) in early FY2003. This permit allowed Travis County to implement a lethal cull of antlerless and spike deer by approved harvesters from September 28, 2002 through January 19, 2003. In all cases, animal removal was discreet and as humane as possible. Any animals taken were dispatched in a swift, effective and humane manner. The safety of employees, patrons and neighbors is Travis County's top priority as efforts focused on effective management of the deer population. Arrangements were been made to donate all venison to a local charity for use in providing nutritious meals for needy Travis County citizens.

Mike Reagan, Technical Guidance Biologist with TPWD, provided harvest recommendations based upon annual census data. Mr. Reagan's harvest recommendation of 12 bucks and 61 antlerless deer would reduce the estimated deer population from the estimated 5.6 acres per deer to 7.5 acres per deer. Mr. Reagan advised that large-scale management harvests will be necessary for several years to prevent additional habitat destruction due to the current deer overpopulation. Overall quality and health of the deer herd, wildlife habitats, and other wildlife species on the preserve should begin to recover once these management actions are successfully implemented.

RESULTS

White-tailed deer management activities were initiated on 26 December 2002, and continued though 19 January 2003, within the constraints inherent in the ADCP and weather variables. A total of 9 deer were safely and humanely removed from the preserve, resulting in a net gain of (4.5) tons of forbs and browse within the preserve, and a total of 340 lbs. of venison was donated to Caritas of Austin to provide nutritious meals to needy families in the local community.

RECCOMENDATIONS

- *Deer censusing*: TPWD recommends that a deer census be completed each year on lands where deer are harvested. An annual census will allow managers to evaluate the effectiveness of management strategies, determine whether desired deer densities have been attained, and calculate future harvest recommendations.

- *Culling*: As long as the deer herd exceeds the carrying capacity of the preserve, it is recommended that deer management continue on the Jollyville Unit. Experts recommend

culling on preserve properties as the most effective management strategy. It allows a large number of deer to be harvested by expert hunters in one season.

- *Fencing*: Wildlife management professionals concur that white-tailed deer management is ineffective without deer-proof fencing of properties. This is due to the ingress and egress of deer between populations on adjacent properties. As long as deer from surrounding properties can migrate into the preserve, no amount of management activities will adequately reduce overpopulated herds.

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