2004 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, 0905-0432

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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 found on Travis County managed portions of the BCP meeting the definition of exotic include Russian boars, which freely interbreed with feral hogs. 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 FY2004 focused on three species: brown-headed cowbirds (*Molothrus ater*), feral hogs (*Sus scrofa*), and white-tailed deer (*Odocoileus virginianus*).

BROWN-HEADED COWBIRDS

INTRODUCTION

Both black-capped vireos (*Vireo atricapilla*) and golden-cheeked warblers (*Dendroica chrysoparia*) are parasitized by the brown-headed cowbird (*Molothrus ater*, hereafter cowbird). Cowbird trapping is an important management technique for both species. This report summarizes the results of the 2004 Travis County brown-headed cowbird trapping program. Traps were operated at six sites within Travis County's Balcones Canyonlands (BCP) preserve: one trap at Hamilton Pool Preserve, one trap adjacent to the Steiner Ranch tract and four traps on or adjacent to the Jollyville Unit. The Jollyville Unit traps were located on the Vireo Ridge, Grandview Hills (North), and the Cuevas tracts, as well as 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. Trapping did not occur in 1998 (See table 4).

METHODS

Cowbird trapping in 2004 was conducted exclusively in the western half of the county (where black-capped vireo and golden-cheeked warbler habitats occur). Travis County operated two "mega traps" (16'x16'), one wooden "hybrid" trap and two Texas Parks & Wildlife metal "hybrid" traps (both types, 6'x8'). One metal trap remained throughout the season on the Vireo Ridge tract, while the second trap was operated for a small duration near the Steiner Ranch tract. However, the Steiner Ranch trap was vandalized and was thus moved to a more secure area on the Cuevas tract for the remainder of the season. This new location was selected due to observations of cowbirds in endangered avian habitat.

Decoy birds (43 males, 11 females) were obtained from Texas Parks and Wildlife. These decoys were used to open three traps (Hamilton Pool Preserve, Grandview Hills and FM 2769). Cowbirds captured in these traps were eventually transferred to the remaining two traps.

Table 1. 2004 cowbird trapping schedule and initial stocking numbers (decoy birds).

Trap location	Date opened	Date closed	Initial stocking numbers
FM 2769	March 1	July 14	19 males, 5 females
Hamilton Pool Preserve	March 1	June 10	16 males, 4 females
Grandview Hills tract	March 1	June 3	8 males, 2 females
Vireo Ridge tract	March 15	July 1	8 males, 2 females
Steiner Ranch tract (new site)*	March 22	April 18	10 males, 6 females
Cuevas tract (new site)	May 12	June 1	9 males, 6 females

* This trap was vandalized and all cowbirds were released

Traps were checked at least three times per 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 the host species. Water and feed (whole 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. Native, non-target species, including snakes, were removed unharmed.

RESULTS AND DISCUSSION

In 2004 a total of 167 male, 213 female and 7 juvenile cowbirds were captured (387 total). Table 2 summarizes 2004 cowbird captures at each trap by class (male, female, and juvenile), month and efficiency (capture rate). Trap efficiency is calculated by dividing the number of females captured by the number of days in operation (x 100).

Table 2. 2004 Cowbird captures at each trap by class, month and efficiency.

Trap location	Month	Days in operation	Males captured	Females captured	Juveniles captured	Total	Trap efficiency (%)
FM 2769	March	31	36	37	0	73	119.4
	April	30	3	8	0	11	26.7
	May	31	14	13	0	27	41.9
	June	30	0	0	0	0	0
	July	23	3	5	4	12	21.7
	Total	**139**	**56**	**63**	**4**	**123**	**45.3%**
Hamilton Pool Preserve	March	31	58	51	0	109	164.5
	April	30	22	50	0	72	166.7
	May	31	8	27	0	35	87.1
	June	10	1	0	0	1	13.0
	Total	**102**	**89**	**128**	**0**	**217**	**125.5%**
Trap location	**Month**	**Days in operation**	**Males captured**	**Females captured**	**Juveniles captured**	**Total**	**Trap efficiency (%)**
Grandview Hills tract	March	31	3	6	0	9	19.4
	April	30	7	2	0	9	6.7
	May	31	1	3	0	4	9.7
	June	3	0	1	0	1	33.3
	Total	**95**	**11**	**12**	**0**	**23**	**12.6%**
Vireo Ridge tract	March	17	2	3	0	5	17.6
	April	30	0	3	0	3	17.6
	May	31	0	0	0	0	0
	June	30	7	1	2	10	3.3
	July	1	1	0	1	2	0
	Total	**109**	**10**	**7**	**3**	**20**	**6.4%**
Steiner Ranch tract [a]	March	10	2	3	0	5	30.0
	April	15	12	5	0	17	33.3

	Total	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
Cuevas tract	May	20	1	3	0	4	15.0
	Total	**20**	**1**	**3**	**0**	**4**	**15.0%**
Grand Total [b]		**465**	**167**	**213**	**7**	**387**	**45.8%**

[a] Trap vandalized and all birds released; monthly efficiency indicated, however total efficiency not applicable

[b] Steiner Ranch trap data was omitted from Grand Total calculations

Although several non-target species were trapped, all native avian species and all snakes were released unharmed. Table 3 lists all non-target species, including snakes, which were found in traps. Bronzed cowbirds (*Moluthrus aeneus*) were unintentionally released from the Hamilton Pool trap (male, one instance) and the FM 2769 trap (male and female, one instance each).

Table 3. Captured non-target species.

Common name	**Species name**	**Trap**	**Comments**
European starling	*Sturnus vulgaris*	GVH	Adults, 2 euthanized, 1 found dead
Northern mockingbird	*Mimus polyglottus*	GVH	Adult, released
Field sparrow	*Spizella pusilla*	HP	Adult, released
Red-winged blackbird	*Agelaius phoeniceus*	2769	Adult female, released
Bronzed cowbirds	*Moluthrus aeneus*	HP, 2769	2 males, 1 female released
Broad-banded copperhead	*Agkistrodon contortrix*	VR	Released
Ratsnake	*Elaphe sp.*	GVH	Released, 3 instances

Overall, the greatest cowbird capture rate occurred at Hamilton Pool Preserve (125.5%). The greatest monthly capture rates were in March and April at Hamilton Pool Preserve (164.5% and 166.7%, respectively) and in March at the FM 2769 trap (119.4%).

The greatest number (97) of female cowbird captures occurred during March. April was also a successful month with 63 females captured. These two months accounted for 76.0% of all females captured and 71.5% of total cowbirds (male, female and juvenile) captured. Only seven juvenile cowbirds were captured in 2004, which is similar to the total number (9) of juveniles captured in 2003. This low juvenile capture rate may indicate an overall success in removing females out of adjacent endangered avian species habitat.

The 2004 Hamilton Pool Preserve cowbird trap efficiency (125.5%) eclipsed the previous year's record efficiency (75.2%) and was Travis County's most successful trap since the inception of the cowbird control program. Although total final trap numbers at Hamilton Pool did not dramatically change from 2003 to 2004 (197 and 217 respectfully), female captures rose from 82 in 2003 to 128 in 2004.

Trap placement continues to be the limiting factor for the cowbird control program due to the lack of feeding and roost sites on or near County-managed properties. The Steiner Ranch tract, like Hamilton Pool, is an exception, with adjacent ranches and potential roost sites along Lake Austin. After witnessing a large number of cowbirds during the 2003 breeding season, a priority was placed on establishing a trap near the Steiner Ranch tract. The trap was opened in early March but was soon after vandalized and all captured birds were released. As a result, the trap was moved from Steiner Ranch and relocated to the Cuevas tract. An attempt will be made to place this trap on another ranch adjacent to Steiner Ranch where it will be more secure. Coordinating with neighboring landowners, especially those with livestock, may provide opportunities for optimal trap sites near other preserve tracts as well.

No evidence of nest parasitism of black-capped vireos or golden-cheeked warblers was noted during the 2004 field season. An abandoned white-eyed vireo (*Vireo griseus*) nest with a cowbird egg deposited inside was found at Hamilton Pool Preserve. One instance of blue-grey gnatcatchers (*Polioptila caerulea*) tending to cowbird young in the nest was witnessed just off the Beck tract. 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.

Table 4. Travis County Natural Resources Cowbird Trapping Program History, 1997-2004

Year	Trap location	Cowbirds trapped (M, F, HY)	Total trapped
1997	Vireo Preserve	14, 6, 3	23
	Riverplace	26, 7, 9	42
	Steiner Ranch 1	6, 4, 4	14
	Steiner Ranch 2	7, 2, 0	9
	Canyon Creek mega	26, 13, 6	45
	Satellite 2	17, 17, 0	34
	McGregor	0	0
1997 Total			**164***
1998	trapping did not occur this year		
1998 Total		0	**0**

1999	3M	13, 3, 3	19
	Riverplace	28, 11, 6	45
	Steiner Ranch	16, 4, 0	20
	Canyon Creek mega	57, 25, 21	103
	Ivanhoe mega	39, 13, 6	58
	Mansfield Dam	15, 11, 0	26
	Satellite 2	2, 0, 2	4
1999 Total			**275***
2000	Cortaña	24, 11, 2	37
	Riverplace	17, 10, 2	29
	Steiner Ranch	0	0
	Canyon Creek mega	48, 57, 13	118
	Ivanhoe mega	10, 5, 0	20
	Mansfield Dam	8, 8, 0	16
	Hamilton Pool Preserve	18, 8, 1	27
	3M #1	0	0
	3M #2	19, 23, 0	42
2000 Total			**284***
2001	Hamilton Pool Preserve	1, 3, 0	4
	Lake Perspectives tract	4, 0, 0	4
	FM2769 (Lonnie Moore)	37, 41, 8	86
2001 Total			**94**
2002	Hamilton Pool Preserve mega	33, 7, 1	41
	FM2769 (Lonnie Moore) mega	60, 39, 12	111
	Grandview Hills North tract	24, 36, 15	75
	Vireo Ridge tract	27, 23, 7	57
2002 Total			**284**

Year	**Trap location**	**Cowbirds trapped (M, F, HY)**	**Total trapped**
2003	Hamilton Pool Preserve mega	115, 82, 0	197
	FM2769 (Lonnie Moore) mega	31, 58, 3	92
	Grandview Hills North tract	13, 24, 0	37
	Vireo Ridge tract #1	8, 4, 4	16
	Vireo Ridge tract #2	19, 12, 2	33
2003 Total			**375**
2004	Hamilton Pool Preserve mega	89, 128, 0	217
	FM2769 (Lonnie Moore) mega	56, 63, 4	123
	Grandview Hills North tract	11, 12, 0	23
	Vireo Ridge tract #1	10, 7, 3	20
	Steiner Ranch**	n/a	n/a
	Cuevas tract	1, 3, 0	4
2004 Total			**387**

* Total adjusted to exclude cowbirds that escaped.

** This trap was vandalized and all cowbirds were released.

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. 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 continued to focus 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. Travis County contracted an independent hog-trapper to removing feral hogs on this Preserve Unit. Trap placement and baiting began in late 2003.

METHODS AND RESULTS

Trapping of feral hogs on the Jollyville Unit and an adjacent privately owned tract began in October of 2003 and continued through July 2004. 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 11 feral hogs were removed during FY2004, compared to 20 hogs during FY2003 and 103 from the same property in FY2002 (Travis County Natural Resources 2002, 2003).

DISCUSSION

With no quantifiable measure of trapping effort, it is not possible to determine if the observed variations in trapping success are an indication of the success of the previous efforts, a reflection of trapping effort by the contractor, or the result of some other factor. 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.

Given the difficulty of monitoring the largely nocturnal free-ranging populations, however, Travis County will continue to assess and manage feral hogs in an effort to minimize damage to protected habitats throughout the Preserve. Proposed management actions include increasing the number and methods employed by contractors, as well as employing nighttime "spotlight" counts in accordance with TPWD regulations to better assess the distribution and abundance of these animals.

WHITE-TAILED DEER

INTRODUCTION

The BCP Land Management Plan directs that white-tailed 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.

Under the terms and condition of the BCCP, Travis County is also charged with managing populations of Texabama croton (*Croton alabamensis var. texensis*) that occur at Pace Bend Park. Under the guidance and assistance of both Texas Parks & Wildlife Department (TPWD) and the Lower Colorado River Authority (LCRA), Travis County staff has collected deer population data at Pace Bend Park since 1993. For five years TPWD permitted various Wildlife Co-ops, under Travis County guidance, to conduct a trap-and-release program. Although this method has been successful in providing some population management, the deer densities continue to exceed healthy and sustainable levels. Recent surveys indicate population densities well in excess of our TPWD recommended target of 1 deer to 10-15 acres (see table 5).

Table 5. Pace Bend Park White-tailed Deer Management Summary FY1997-FY2003.

YEAR	AC/ DEER	DOES/ BUCK	FAWNS/ DOE	TOTAL BY BUCK/DOE/FAWN	ESTIMATED TOTAL	TOTAL REMOVED
FY97	4.9	1.7	0.49	70/117/57	244	85
FY98	3.7	4.2	0.38	40/167/63	270	80
FY99	3.8	3.0	0.36	53/156/55	264	111
FY00	4.5	2.0	0.38	61/119/45	225	92
FY01	5.7	3.3	0.29	29/97/28	326	19
FY02	5.6	4.8	0.22	29/139/30	464	0
FY03	3.6	2.1	0.36	110/232/83	425	18

Trap and relocation efforts previously employed are no longer a viable option at Pace Bend Park. According to Conservation Scientists with TPWD, release sites are becoming scarcer and the effectiveness of these highly labor intensive control methods are minimal. Although the public may have a positive perception of trap and release efforts, TPWD scientists indicate that deer mortality rate within the first year of release may be considerably high (up to 80%).

Immuno-contraception (IC) methods have been reviewed and deemed unsuitable as a method to control populations of white-tailed deer. These actions require capture, tagging, and annual administration of injected contraceptive drugs to each doe in a population. The long-term effectiveness and health implications of these methods are currently unknown. Furthermore, once injected with the contraceptive drug these animals are unsuitable for human consumption. TPWD currently has no permitting process that allows the use of IC drugs to reduce white-tailed deer populations.

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. Census results for Pace Bend Park estimate deer densities of 1 deer per 3.6 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.

Mike Reagan, Technical Guidance Biologist with TPWD, provided harvest recommendations based upon annual census data. Mr. Reagan advised that large-scale management harvests would 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.

Travis County obtained TPWD Antlerless and Spike White-tailed Deer Control Permits (ADCP) for both the Jollyville Unit of the BCP and Pace Bend Park in early FY2004. These permits allowed Travis County to implement a lethal cull of antlerless and spike deer by approved harvesters from September 27, 2003 through February 29, 2004. 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 was Travis County's top priority as efforts focused on effective management of the deer population. Arrangements were made to donate all venison to a local charity for use in providing nutritious meals for needy Travis County citizens.

RESULTS AND DISCUSSION

White-tailed deer management activities were performed under the terms and conditions of the ADCP and the constraints inherent to weather variables. A total of 90 deer were safely and humanely removed from the Jollyville Unit and Pace Bend Park, resulting in an approximate net gain of 45 tons of forbs and browse within the preserve. These actions generated over 3,300 lbs. of venison that was donated to Caritas of Austin to provide nutritious meals to needy families in the local community.

Travis County will continue to adhere to TPWD recommendations concerning annual deer census and harvest levels. Annual censuses allow managers to evaluate the effectiveness of

management strategies, determine whether desired deer densities have been attained, and calculate future harvest recommendations. As long as census data indicate that deer herds exceed the carrying capacity of the preserve or parklands, deer management should continue on Pace Bend Park and the Jollyville Unit. White-tailed deer management is generally agreed to be only marginally effective without “deer-proof” (i.e.: 8’ to 10’ high fencing completely surrounding managed areas) fencing of properties 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, management activities will be unable to maintain reduced herd populations which allow for regeneration of hardwood forest species.

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