2005 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

December 2005

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.

The Texas Parks and Wildlife Department define exotic animals 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 FY2005 focused on three species: brown-headed cowbirds (*Molothrus ater*), feral hogs (*Sus scrofa*), and white-tailed deer (*Odocoileus virginianus*).

BROWN-HEADED COWBIRDS

INTRODUCTION

Brown-headed cowbirds (*Molothrus ater,* hereafter cowbird) parasitize the nests of two Central Texas endangered avian species, the black-capped vireo (*Vireo atricapilla*) and golden-cheeked warbler (*Dendroica chrysoparia*). Cowbird trapping is an important management technique for the conservation of both species. This report summarizes the results of the 2005 Travis County cowbird trapping program. Four traps were operated within or adjacent to Travis County's Balcones Canyonlands (BCP) preserve: one trap at Hamilton Pool Preserve, two traps on or adjacent to the Jollyville Unit (Vireo Ridge tract) and one trap on the Upper Bull Creek Unit (Ribelin tract). The trap adjacent to the Jollyville unit was located on a private ranch 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 (Travis County, 1998). 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 due to staff shortage (Appendix).

METHODS

Cowbird trapping in 2005 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') and two Texas Parks & Wildlife metal hybrid traps (6'x8'). The metal traps remained throughout the season on the Vireo Ridge tract and on the newly acquired Ribelin tract. The wooden hybrid trap used in previous years, most recently on the Grandview Hills North tract, was vandalized beyond repair, which reduced the program's productivity.

Decoy birds (29 males, 25 females) were obtained from Texas Parks and Wildlife. These decoys were used to begin to lure wild cowbirds into the mega traps (Hamilton Pool Preserve and FM 2769). Cowbirds captured in these traps were eventually transferred to the remaining two traps. Table 1 summarizes the 2005 cowbird trapping schedule and initial stocking numbers of decoy birds.

Table 1. Cowbird trap locations, trapping period dates and initial cowbird stocking numbers.

Trap location	Date opened	Date closed	Initial stocking numbers
FM 2769	February 18	July 20	19 males, 5 females
Hamilton Pool Preserve	February 23	June 21	16 males, 8 females
Vireo Ridge tract	March 9	June 3	8 males, 6 females
Ribelin tract	March 15	July 20	12 males, 5 females

Traps were checked at least three times per week throughout the season until juvenile cowbirds began appearing in traps. 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. To offset the impact of rising air temperatures on bird health or survivability, plastic water baths and shade cloth were added to the traps. 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, found in traps were removed unharmed (Table 3).

RESULTS AND DISCUSSION

In 2005, a total of 89 male, 104 female and 7 juvenile cowbirds were captured (200 total). Table 2 summarizes 2005 cowbird captures at each trap by class (male, female, and juvenile), month, and trap efficiency (or capture rate). Trap efficiency is calculated by dividing the number of females captured by the number of days in operation (x 100).

Table 2. Results of the 2005 Travis County cowbird trapping season.

Trap location	Month	Days in operation	Males captured	Females captured	Juveniles captured	Total	Trap efficiency (%)
FM 2769	Feb	11	0	1	0	1	9.1
	March	31	6	6	0	12	19.4
	April	30	7	9	0	16	30.0
	May	31	6	23	0	29	74.1
	June	30	6	4	0	10	13.3
	July	20	1	2	0	3	21.7
	Total	**153**	**26**	**45**	**0**	**71**	**28.8%**
Hamilton Pool Preserve	Feb	6	1	1	0	2	9.1
	March	31	20	8	0	28	25.8
	April	30	7	19	0	26	63.3
	May	31	6	10	0	16	32.3
	June	21	4	6	0	10	28.6
	Total	**119**	**38**	**44**	**0**	**82**	**37.0%**

Table 2 (continued). Results of the 2005 Travis County cowbird trapping season

Trap location	Month	Days in operation	Males captured	Females captured	Juveniles captured	Total	Trap efficiency (%)
Vireo Ridge tract	March	23	1	0	0	1	0
	April	30	9	3	0	12	10.0
	May	31	2	1	0	3	3.2
	June	3	0	0	0	0	0
	Total	**87**	**12**	**4**	**0**	**16**	**4.6%**
Ribelin tract	March	17	4	2	0	6	11.8
	April	30	3	0	0	3	0
	May	31	1	2	0	3	11.8
	June	30	3	5	4	12	16.7
	July	20	2	2	3	7	10.0
	Total	**128**	**13**	**11**	**7**	**31**	**8.6%**

Grand Total	**487**	**89**	**104**	**7**	**200**	**21.4%**

Table 3. Non-target species found in Travis County operated traps, 2005.

Common name	Species name	Trap	Comments
Northern cardinal	*Cardinalis cardinalis*	HP, 2769	Found dead, 2 instances
Bewick's wren	*Thryomanes bewickii*	VR	Found dead
Bronzed cowbird	*Moluthrus aeneus*	2769	1 male, released
Broad-banded copperhead	*Agkistrodon contortrix*	VR	Released

Overall, trapping success and rates were far lower than those of previous years. The greatest overall cowbird capture rate occurred, as in previous years, at Hamilton Pool Preserve (37%). This is far less successful than the 125.5% rate reached in 2004. The greatest monthly capture rate (74.1%) was in May at the FM 2769 trap. This is the first time since the 2001 trapping season that May was more successful than April. The second most efficient rate (63.3%) occurred in April at Hamilton Pool Preserve (Table 2). No trap had over a 100% monthly capture rate, as was the case from 2002-2004 (Travis County, 2002, 2003, 2004).

The greatest number of female cowbird captures (36) occurred during May. April was also a successful month with 31 females captured. These two months accounted for 64.4% of all females captured and 54.0% of total cowbirds (male, female and juvenile) captured. Seven juvenile cowbirds were captured in 2005. This marks the third year where fewer than 10 juvenile cowbirds were captured. This low juvenile capture rate may indicate an overall success in removing females out of adjacent endangered avian species habitat. In 2005, all juveniles were captured at the Ribelin trap, which happened to have the nearest sizeable cattle herd (Table 2).

A female golden-cheeked warbler was observed feeding a juvenile cowbird on the Ribelin tract on June 2. A second unconfirmed sighting also occurred on Ribelin earlier in May, where a male golden-cheeked warbler may have been tending to a cowbird young. No other incidents, including discovering cowbird eggs in host nests, were noted during the 2005 field season. 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.

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 acquisition of the Ribelin tract, neighboring an adjacent cattle ranch, allows a potentially good, secure trapping site. The low efficiency rate during 2005 seems counterintuitive, and might be a function of trap placement, as cowbird sightings were frequent in the area.

Placing a trap in a secure location near the southern section of the Steiner Ranch tract is a priority. Access continues to be an issue onto neighboring ranchlands, as well as the current shortage of traps in the program. The program lost a trap (Grandview Hills) to vandals before the 2005 trapping season, further limiting the program's success. The trap season of 2006 priorities include replacing the vandalized trap and adding a second additional trap. Coordinating with neighboring landowners, especially those with livestock, may provide opportunities for additional optimal trap sites near other preserve tracts.

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 with independent hog-trappers to removing feral hogs on this Preserve Unit. Trap placement and baiting began in late 2003.

The newly acquired Ribelin Ranch Preserve, located in the Bull Creek Macrosite, also showed evidence of significant hog populations. The County has begun a coordinated effort with surrounding landowners and the City of Austin to create and implement a management effort for populations in this area.

METHODS AND RESULTS

Trapping of feral hogs on the Jollyville Unit has continued since mid summer of 2003. No trapping is attempted during the hottest summer months (July-September) to avoid unnecessary heat stress to trapped hogs. The contracted trappers provide appropriate 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. 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.

Drought conditions throughout the summer and fall seem to have concentrated hog activity in riparian areas. Anecdotal evidence from County staff and trappers indicated far fewer encounters with hogs during daylight hours, though this may be additional evidence that during these conditions hog activity occurs primarily at night.

A total of 3 feral hogs were removed during FY2005, compared to 11 in FY2004, 20 hogs during FY2003 and 103 from the same property in FY2002 (Travis County Natural Resources 2002, 2003, 2004).

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 contractors, 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. Travis County is also considering nighttime hunts for feral hogs to be operated in cooperation with TPWD game regulations.

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 that 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).

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 is 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 2004 to determine the current status of the white-tailed deer population on select BCP tracts and Pace Bend Park in accordance with Texas Parks & Wildlife Department (TPWD) guidelines. Census results indicate that the preserve and the park currently hosts populations exceeding the carrying capacity for songbird habitats. These surveys estimate deer densities of approximately 1 deer per 7.2 acres on the surveyed areas of the Jollyville Unit. Census results for Pace Bend Park estimate deer densities of 1 deer per 2.5 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 FY2005. These permits allowed Travis County to implement a lethal cull of antlerless and spike deer by approved harvesters from September 1, 2004 through February 28, 2005. 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 113 deer were safely and humanely removed from the Jollyville Unit and Pace Bend Park, resulting in an approximate net gain of 56.5 tons of forbs and browse within the preserve. These actions generated over 1 ½ tons of processed ground venison that was donated to Caritas of Austin to provide nutritious meals to needy families in the local community. Caritas estimated that these efforts provided over 37,000 meals for needy Travis County residents in FY2005.

The mild and wet conditions in the summer of 2004 resulted in an abundance of natural foods and heavy cover conditions that resulted in low harvest productivity at the beginning of the deer management season. In addition, heavy rains throughout the fall and winter months generated difficult harvest conditions. A number of the County's deer feeders and hunting blinds were vandalized over the course of the season and personnel changes impacted the ability to achieve the recommended harvest levels.

Travis County will continue to cooperate with TPWD 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. In addition, other preserve units also suffering from unsustainable deer population densities should be considered for future management efforts.

County staff will reassess the effectiveness of harvest methods employed to date and consider additional techniques for seasons ahead. Options currently under consideration include the addition of additional authorized harvesters, purchase and deployment of

additional feeders to lure deer into safe shooting zones, and creation of a scheduling system that continually shifts harvest times and locations. Other approaches will be researched by staff in the year ahead.

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 that allow for regeneration of hardwood forest species.

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Allow Incidental Take of the Golden-cheeked Warbler, Black-capped Vireo, and six karst invertebrates in Travis County, Texas.

Appendix A

Travis County Natural Resources Cowbird Trapping Program History, 1997-2005

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**

Year	Trap location	Cowbirds trapped (M, F, HY)	Total trapped
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**
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**
2005	Hamilton Pool Preserve mega	38, 44, 0	82
	FM2769 (Lonnie Moore) mega	26, 45, 0	71
	Vireo Ridge tract #1	12, 4, 0	16
	Ribelin	13, 11, 7	31
2005 Total			**200**

* Total adjusted to exclude cowbirds that escaped.

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