2009 SUMMARY OF

WILDLIFE MANAGEMENT ACTIVITIES

ON TRAVIS COUNTY MANAGED TRACTS OF THE

BALCONES CANYONLANDS PRESERVE



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

January 2010

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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 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 a minimum of 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 2007 BCP Land Management Plan, approved by the USFWS, directs management of the BCP, including control of non-native, nuisance and invasive species. Beginning in 2002 and updated annually, a *Travis County Parks and Preserves Wildlife and Vegetation Management Permit* is drafted and serves as a general guideline for Travis County staff to direct management of these species, in response to the potential human health and safety, economic, and environmental impacts.

The purpose of this permit 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 in this permit 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.

Wildlife management activities approved under the permit guidelines may include reducing; relocating or eliminating individuals or populations of specifically identified species. Management objectives or other constraints for each property may dictate different actions for the same species on different tracts.

The Texas Parks and Wildlife Department (TPWD) 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 FY2009 (October 1, 2008 - September 31, 2009, hereafter FY09) focused on three species: brown-headed cowbirds (*Molothrus ater*), feral hogs (*Sus scrofa*), and white-tailed deer (*Odocoileus virginianus*).

BROWN-HEADED COWBIRDS

INTRODUCTION

In addition to many other avian biological hosts, 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 has been the subject of considerable research and management activities and is believed to be an important technique for the conservation of both species. At Fort Hood, 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. Ft. Hood currently meets local and regional recovery goals for the black-capped vireo and attributes this success to cowbird management (Kostecke et al. 2005).

This report summarizes the results of the 2009 Travis County cowbird trapping program. Four traps were operated within, or near, Travis County's BCP properties **(Figure 1)**: within

Hamilton Pool Preserve, the Nootsie tract, and on private land adjacent to the Toops and Vireo Ridge tracts (both off FM 2769). A fifth trap was operated at Travis County's Milton Reimers Ranch County Park.

BACKGROUND

Cowbird trapping was previously conducted in western Travis County by Espey Huston and Associates and DLS Associates (in 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 on, or near Travis County BCP land have been added or removed according to trap success or failure and access availability. Travis County did not operate traps in 1998 due to staff shortage (**Appendix A**).

METHODS

Cowbird trapping in 2009 was conducted exclusively in the western half of the county. Travis County operated two mega traps (16'x16') and three metal hybrid traps (6'x 8'), two of which are on loan from TPWD. The mega traps are located at Hamilton Pool Preserve (Hamilton Pool) and on private property adjacent to the Vireo Ridge tract on FM 2769 (hereafter the FM 2769 trap). The three hybrid traps were operated at Milton Reimers Ranch County Park (Reimers), within the Nootsie tract and on private property adjacent to the Toops tract.

Decoy birds (13 males, 9 females) were obtained at the start of the 2009 trapping season from Texas Parks and Wildlife. Because of the low number of bait birds acquired, only the traps at Hamilton Pool and Reimers were initially put into operation. Cowbirds captured in these traps were eventually transferred to the remaining traps to serve as bait. Table 1 summarizes the 2009 cowbird trapping schedule and initial stocking numbers of decoy birds.

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

Trap	Date Opened	Date Closed	Initial Stocking Numbers
Hamilton Pool	March 3	June 4	10 Males, 5 Females
Reimers	March 3	June 4	3 Males, 4 Females
FM 2769	March 27	June 6	10 Males, 6 Females
Toops	March 27	June 12	5 Males, 3 Females
Nootsie	March 27	June 12	3 Males, 5 Females

Traps were routinely inspected and maintained 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 and 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. Non-target species found in traps were removed unharmed unless otherwise noted (**Table 2**).

Table 2. Non-target species found in Travis County operated traps, 2009.

Common Name	Species Name	Trap(s)	Comments
Red-winged blackbird	*Agelaius phoeniceus*	RR, HP, FM 2769	4 released
Inca dove	*Columbina inca*	RR	1 released
Northern cardinal	*Cardinalis cardinalis*	RR, HP	29 released, 1 found dead
Bronzed cowbird	*Molothrus aeneus*	FM 2769	1 dispatched
Sparrow *sp.*	*n/a*	HP	1 released
Texas rat snake	*Elaphe obsolete lindheimeri*	NT	1 released

RR= Reimers HP= Hamilton Pool Preserve NT= Nootsie

RESULTS AND DISCUSSION

In 2009, a total of 172 male and 176 female cowbirds were captured (348 total). No juveniles were captured during the trapping season. Table 3 summarizes cowbird captures at each trap by class (male, female, and juvenile), month, and trap efficiency (or capture rate) during the 2009 trapping season. Trap efficiency is calculated by dividing the number of females captured by the number of days in operation (x 100). Although the number of traps in operation and their locations were identical to the previous year, overall trap efficiency rate in 2009 (42.21%) was lower than that of 2008 (65%). Travis County Natural Resources maintains a minimum goal of 20% trap efficiency for the program.

The two traps located in far western Travis County (Hamilton Pool and Reimers traps) continued to perform well, primarily due to the proximity of livestock and the Pedernales River corridor. The mega-trap at Hamilton Pool was the most successful trap in 2009 with an overall efficiency rate of 88.04%. The trap at Reimers also did well, posting a 42.39% efficiency rate.

Table 3. Results of the 2009 Travis County cowbird trapping season.

Trap	Month	Days in Operation	Males captured	Females captured	Juveniles Captured	Total Captured	Trap Efficiency(%)
FM 2769	March	4	1	0	0	1	0
	April	30	10	8	0	18	26.67
	May	31	9	4	0	13	12.90
	June	12	3	0	0	3	0.00
	Total	77	23	12	0	35	15.58
Hamilton Pool	March	27	13	18	0	31	66.67
	April	30	20	47	0	67	156.67
	May	31	10	16	0	26	51.61
	June	4	0	0	0	0	0.00
	Total	92	43	81	0	124	88.04
Nootsie	March	4	2	0	0	2	0.00
	April	30	12	21	0	33	70.00
	May	31	4	1	0	5	3.23
	June	12	1	0	0	1	0.00
	Total	77	19	18	0	41	29.50
Reimers	March	27	17	4	0	21	14.81
	April	30	27	32	0	59	106.67
	May	31	2	2	0	4	6.45
	June	4	2	1	0	3	16.67
	Total	92	48	39	0	87	42.39
Toops	March	4	0	0	0	0	0.00
	April	30	21	15	0	36	50.00
	May	31	18	7	0	25	22.58
	June	12	0	0	0	0	0.00
	Total	77	39	22	0	61	28.57
Grand Totals		**417**	**172**	**176**	**0**	**348**	**42.21**

For the third consecutive year, the 2769 mega trap performed below expectations. It remains unclear why the trap is less effective than it was prior to 2007. As speculated in 2007, area land use changes could be a factor with nearby cattle pastures having been converted into neighborhoods and a golf course. Regardless of low trapping numbers, cowbirds remain a problem in the area as indicated by the discovery of an adult white-eyed vireo (*Vireo griseus*) observed tending a recently fledged cowbird less than a half mile from this trap. For this

reason and the nearby presence of black-capped vireos, this trap is often left in operation for longer durations, despite low female cowbird trap rates.
Both the Nootsie and Toops traps performed well with 29.50 % and 28.57% respective efficiency rates. Both traps could have been shut down by the end of May and this will be considered in future years. The drop in efficiency rate at the Toops trap (from 76.9% in 2008 to 28.6% in 2009) was unexpected considering the presence of livestock (horses, goats) in the immediate area.

In general, optimal trapping locations, particularly those in or near livestock or agricultural areas that serve as feeding and congregation sites, are difficult to locate. As the conversion of farms and ranches into subdivisions and other suburban development continues in much of western Travis County, areas that may concentrate cowbird numbers that are easily accessible are becoming uncommon. Regardless, cowbirds continue to disperse into the preserve in smaller numbers along power-line corridors that crisscross the preserve system, searching for optimal breeding sites. As a result, traps are routinely placed along, or near these corridors as well as in endangered species habitat (particularly near the small population of black-capped vireos) with the understanding that these locations might not trap many cowbirds, however could serve as a buffer for endangered avian species breeding in the area.

The cowbird trapping program was again a success, greatly exceeding the internal 20% overall trapping efficiency goal with a rate of 42.21%. This is largely due to the very efficient traps located at Hamilton Pool Preserve and Milton Reimers Ranch Park, as well as the success and management of several of the remaining traps. Trapping sites in and around the other County managed BCP properties are limited, but as new tracts are acquired, additional, more suitable trap sites may be available. Staff will continue monitoring the presence of cowbirds in endangered avian species habitat each season and adjust trap placement when necessary.

FERAL HOGS

INTRODUCTION

The BCP Land Management Plan (2007) 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 is responsible for the management of non-native wildlife on County owned and managed portions of the BCP. The discovery of wallows, rooted areas, rubs, well-worn trails, tracks and first-hand staff encounters in the field verified the significant hog population within the preserve system. Travis County preserve tracts showing signs of significant feral hog populations include Canyon Vista, Ribelin and Concordia as well as several tracts within the Jollyville Unit (**Figure 1**). Feral hogs were also documented within Hamilton Pool Preserve for the first time since the property has been owned and managed by Travis County (since 1985).

Some sections of the Steiner Ranch Preserve showed signs of populations of feral hogs in previous years, but this area benefited from independent hog-trapping programs conducted by the managers of the Steiner Ranch communities as well as the efforts by the City of Austin on the adjacent BCP Cortaña tract. Feral hog damage has not been evident in County-managed portions of Steiner Ranch for several years.

In FY09, Travis County continued to coordinate efforts with surrounding landowners and the City of Austin to implement management actions on and adjacent to Travis County BCP tracts. In 2008, an Interlocal Cooperation Agreement was entered into between Travis County and Texas AgriLife Extension Service (AgriLife) to conduct an operational wildlife damage management program for the protection of facilities and the property from damage caused by wildlife and for the protection of human health and safety from wildlife-related diseases in the County of Travis and the City of Austin. Covering all the unincorporated areas of Travis County and the City of Austin, this agreement provides a way of addressing the occasional nuisance wildlife complaints (most commonly feral hogs and coyotes) from preserve neighbors.

The City of Austin also independently contracted with AgriLife to target the substantial feral hog population in the Bull Creek area of the BCP. Although this area (Bull Creek Macrosite)

is primarily composed of City of Austin preserve tracts, Travis County tracts (Ribelin and Canyon Vista, see **Figure 1**) have also been included as target areas under this contract.

Travis County also continued to utilize contracted, volunteer hog-trappers. Generally these trappers make casual attempts at trapping primarily in the late fall to early spring. In FY09, only one of the two contracted trappers was able to devote some time to the program.

In December 2008, a hog trapping protocol was developed to facilitate any Travis County operated feral hog trapping efforts (**Appendix B**). This protocol is to guide activities of both staff and contracted hog trappers and addresses trapping guidelines as well as trapped animal management.

METHODS

Generally, most in-house trapping efforts, as well as those of contracted trappers occurs in milder parts of the year. Unless temperatures dictate otherwise, no trapping is attempted during the hottest summer months (June-September) to avoid unnecessary heat stress to trapped animals. All trapping efforts in FY09 were focused in areas showing significant hog damage at the Canyon Vista and Ribelin tracts, as well as various areas of the Jollyville Unit (**Figure 1**).

Standard operation for both Travis County staff and contracted trapping efforts included setting and baiting cage traps or larger stock panel traps with dry or soured corn and occasionally rotten fruit and vegetables. Traps were routinely baited and checked late at night or early the following morning. Trapped hogs were humanely dispatched and any non-target animals are safely released. 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 or closed.

In an effort to begin utilizing a more successful form of larger pen traps with a guillotine style trap door, Travis County worked with a private contractor to construct a portable gate and trigger mechanism that could be easily transported and deployed to various pre-constructed/pre-baited pen traps. One trap of this type was operated in FY09.

Travis County staff was authorized to shoot feral hogs while engaged in deer management actions if shots were deemed to be safe.

RESULTS AND DISCUSSION

The contracted trapper operated primarily from October 2008 through May 2009. Overall signs of hog activity fell dramatically, as in the previous year, as the result of the continuing drought. The low incidence of hog activity forced the trapper to curtail efforts for a significant portion of the year. Also, the use of the smaller, portable cage-style traps was found to be a limiting factor, as it was speculated by the trapper that hogs in the general area were beginning to become trap-shy. This is not uncommon with smaller traps, as generally only one, or a small number of hogs are trapped at one time, often leaving other, non-trapped hogs outside the trap learning to avoid being caught. Subsequently, no hogs were trapped by the contracted hog trapper in FY09.

Travis County staff built and operated one large pen trap near a common wallowing site on the Jollyville Unit. However, the site soon dried up and no hogs were trapped. No other Travis County operated traps were operated in FY09. Additionally, no hogs were removed incidental to white-tailed deer management activities in winter 2009.

From the end of June through October 2009, AgriLife staff removed 17 hogs from the Ribelin tract. Using pen traps and snares, AgriLife staff also benefitted from the break in the drought. AgriLife has continued to successfully remove hogs into FY10 and the results will be summarized in the FY10 Annual Report.

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.

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.

Travis County staff managed a Travis County deer management program utilizing lethal harvest, from the FY03 through the FY08 hunting seasons on the Jollyville Unit of the BCP. For FY09, Travis County hired the services of contracted deer hunters to manage the population on the Jollyville Unit.

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 Texas Parks & Wildlife Department (TPWD) and in cooperation with the Lower Colorado River Authority (LCRA), Travis County staff has collected deer population data at Pace Bend Park since FY1997. TPWD permitted various Wildlife Co-ops, under Travis County guidance, to conduct trap-and-relocation programs (1997-2001) in an attempt to manage the population in the park. However, deer densities after five consecutive years of this strategy continued to exceed healthy and sustainable levels.

The trap and relocation efforts previously employed are no longer considered 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%). Travis County staff managed a deer management program utilizing lethal harvest, from the FY03 through the FY09 hunting seasons at Pace Bend Park.

METHODS

Travis County staff collected annual population census data to estimate white-tailed deer populations on select tracts in accordance with TPWD guidelines. TPWD currently recommends population levels of one deer to 15-20 acres for effective songbird habitat management, and some research indicates population targets of one deer per 30 to 40 acres for successful hardwood forest regeneration. Fall 2008 census results indicated that the Jollyville Unit hosted a population exceeding the carrying capacity for songbird habitats. These surveys estimated deer densities on the Jollyville Unit of one deer per approximately 11 acres. Census results for Pace Bend Park estimate deer densities of one deer per 6.1 acres.

Mike Reagan, Technical Guidance Biologist with TPWD, provided harvest recommendations for Pace Bend Park based upon the County's population 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.

For management of the Jollyville Unit deer herd, Travis County utilized the services of Orion Research & Management Services (Orion) who operate under a TPWD Scientific Permit. Because Orion operates under this permit, harvest recommendations could be made by Travis County staff utilizing the same methods TPWD biologists use. For Pace Bend Park deer management, Travis County obtained a TPWD Managed Lands Deer Control Permit (MLDP). This permit allowed Travis County to implement a lethal cull of specified numbers of both male and female deer by approved harvesters. For this permit, harvest recommendations are made by TPWD staff.

In both 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 the public and staff 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 MLDP and the constraints related to weather variables in FY09. A total of 41 deer were safely and humanely removed from Pace Bend Park (Table 4).

Overall population trends at Pace Bend Park and on the BCP Preserve have begun to reflect the harvest management strategies implemented by Travis County. The population trend data indicate that the lethal cull strategy has successfully increased the total acreage available per deer while also reducing the total estimated population on the park. TPWD no longer issues trap and release permits as a deer management tool. The lethal harvest strategy currently in place since 2003 has been demonstrated to be an effective management option to control deer populations.

Table 4. White-tailed deer population trends at Pace Bend Park FY97 through FY09.

YEAR	AC/ DEER	ESTIMATED COMPOSITION (BUCK/DOE/FAWN)	ESTIMATED POPULATION	TOTAL REMOVED
FY1997	4.9	70/117/57	244	85
FY1998	3.7	40/167/63	270	80
FY1999	3.8	53/156/55	264	111
FY2000	4.5	61/119/45	225	92
FY2001	5.7	29/97/28	326	19
FY2002	3.6	61/86/43	519	0
FY2003	2.7	29/139/30	464	18
FY2004	3.6	110/232/83	425	74
FY2005	2.5	154/329/133	616	91
FY2006	3.4	183/181/79	443	96
FY2007	6.2	86/134/25	245	59
FY2008	8.9	61/91/20	172	34
FY2009	6.1	48/135/67	250	41

A total of 20 deer were removed from the BCP Jollyville Unit in FY09. Since implementing the lethal cull strategy on these tracts in FY03, the total population on the Jollyville Unit has been reduced and the numbers of acres per deer has nearly doubled (Table 5).

Table 5. White-tailed deer population trends on the BCP Jollyville Unit FY03 through FY09.

YEAR	AC/ DEER	ESTIMATED COMPOSITION (BUCK/DOE/FAWN)	ESTIMATED POPULATION	TOTAL REMOVED
FY03	5.6	46/162/82	290	9
FY04	5.5	61/158/78	297	12
FY05	7.2	35/127/63	225	22
F006	9.6	33/103/33	169	20
FY07	10.0	44/142/55	241	12
FY08	9.1	29/122/46	197	26
FY09*	10.9	37/111/37	185	20

*Population estimates were generated by Travis County staff. Previous years were generated by TPWD.

In addition to successfully managing the overpopulation of deer, this program has also generated significant public support for County management efforts. This is largely due to the better than 7.25 tons of processed ground venison that has been directed to Caritas of Austin to provide high quality low fat protein to needy local residents in cooperation with the Texas Association of Community Action Agencies' Hunters for the Hungry program.

Travis County will continue to monitor deer populations on these tracts and work to implement TPWD recommendations concerning appropriate management strategies 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 County preserve or parklands, deer management should continue on Pace Bend Park and the tracts of the BCP.

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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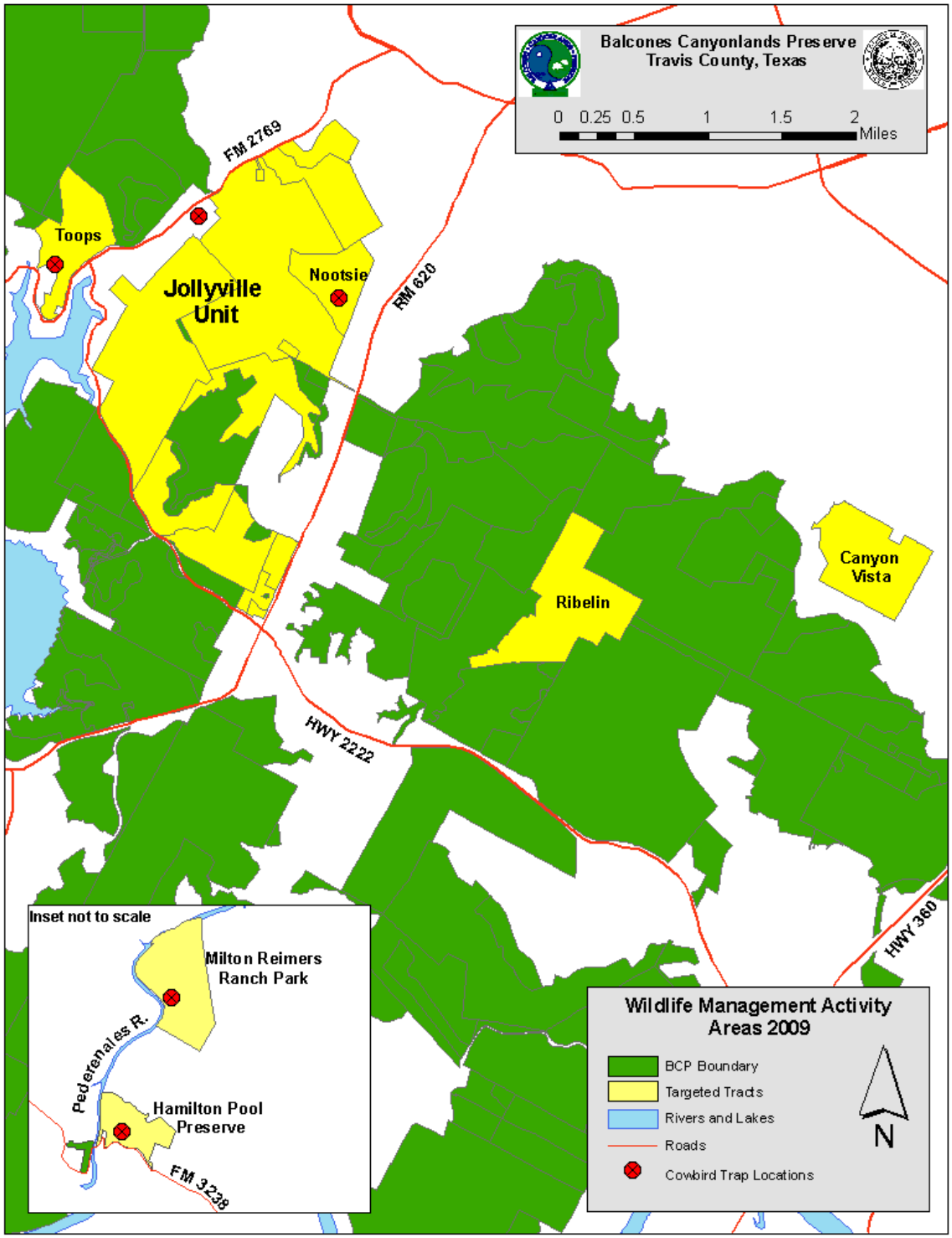
FIGURES

Figure 1. Travis County wildlife management activity areas, 2009



APPENDIX A. Travis County Natural Resources Cowbird Trapping Program History

Travis County Natural Resources Cowbird Trapping Program History, 1997-2007

Year	Trap location/name	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	37, 41, 8	86
2001 Total			**94**

Year	Trap location/name	Cowbirds trapped (M, F, HY)	Total trapped
2002	Hamilton Pool Preserve mega	33, 7, 1	41
	FM2769 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 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 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 mega	26, 45, 0	71
	Vireo Ridge tract #1	12, 4, 0	16
	Ribelin tract	13, 11, 7	31
2005 Total			**200**
2006	Hamilton Pool Preserve mega	83, 65, 0	148
	FM2769 mega	49, 45, 1	95
	Milton Reimers Ranch County Park	63, 49, 0	112
	Ribelin tract	20, 29, 1	50
	Nootsie tract	8, 3, 0	11
2006 Total			**416**
2007	Hamilton Pool Preserve mega	86, 73, 0	159
	FM2769 mega	14, 15, 1	30
	Milton Reimers Ranch County Park	90, 50, 3	143
	Nootsie tract	14, 6, 0	20
	Toops tract	3, 2, 0	5
2007 Total			**357**

Year	Trap location/name	Cowbirds trapped (M, F, HY)	Total trapped
2008	Hamilton Pool Preserve mega	71, 94, 0	165
	FM2769 mega	13, 12, 0	25
	Milton Reimers Ranch County Park	71, 67, 1	139
	Nootsie tract	14, 18, 0	32
	Toops tract	49, 60, 0	109
2008 Total			**470**
2009	Hamilton Pool Preserve mega	43, 81, 0	124
	FM2769 mega	23, 12, 0	35
	Milton Reimers Ranch County Park	48, 39, 0	87
	Nootsie tract	19, 22, 0	41
	Toops tract	39, 22, 0	61
2009 Total			**348**

* Total adjusted to exclude cowbirds that escaped.

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

APPENDIX B. Travis County Natural Resources and Environmental Quality Hog Trapping Protocol, December 2008

Background

The status of feral hog populations on Travis County-managed preserve and parklands is generally unknown. Although uncommonly seen, the damage feral hogs cause by rooting and wallowing is regularly observed. Due to feral hogs' well-noted fecundity, we assume the population is steadily increasing especially during favorable conditions. Travis County NREQ Division has a zero tolerance for any non-native feral animal and has set a goal to remove them from any County-managed land.

Feral hogs can be especially harmful in agricultural settings by destroying crops and spreading parasitic and infectious diseases to livestock. In terms of preserve and park management, feral hogs are a substantial liability to native plants, animals and water quality. Primary reasons for controlling them are:

- changes in vegetation communities and increased erosion as a result of their destructive feeding habits (rooting);
- their competition with other wildlife species for food;
- wallowing in sensitive riparian habitats which causes siltation and reduces water quality.

Location of feral hogs on County-managed lands

Feral hog populations on Travis County BCP and park properties vary greatly. As a result of their large home ranges, hogs may utilize several neighboring preserve tracts (TPWD notes an average of 0.5 to 3 square mile home range). The following list (as of January 2009) ranks tracts (high to none) in general terms of frequency of recent or historic observations of hogs or hog damage. Travis County Parks with no hogs, or observed hog damage are not listed.

- High occurrence of hog activity:

Ribelin	Bunten
Canyon Vista	Grandview Hills (North)
Vireo Ridge	

- Moderate occurrence of hog activity:
  - Vista Point
  - Concordia
  - Pogue Hollow (Travis County Park property)

- Low occurrence of hog activity:
  - Cuevas
  - Grandview Hills (South)
  - Nootsie

- Little, or no observed hog damage:

Lake Perspectives	King, Attwood, Blake (KAB)
The Crossings	N. Lake Austin Unit tracts
Hamilton Pool Preserve	Wild Basin Preserve
Medway	Romberg
Toops	Lucas
Steiner Ranch Preserve	

Status of hog management on County-managed lands

Travis County primarily utilizes the services of volunteer hog trappers. Since the inception of the hog trapping effort, five trappers have agreed to contract terms at various times to trap feral hogs in heavily impacted areas. Trappers are required to follow the terms of a legally binding contract that clearly defines their roles, responsibilities and any procedures required by Travis County. Currently, there are three trappers contracted by Travis County through December 31, 2008. Contracts are renewed on an annual basis.

One trapper each usually targets the following: County BCP tracts (primarily the Jollyville Unit), the County's Reimer's Ranch and Pogue park-managed properties, and the Canyon Vista tract. The Ribelin tract, arguably the property with the most hogs, has not been targeted due to difficult access issues. Trappers use standard transportable cage-type hog traps (rectangular, 4'x4'x6'), and have had varying degrees of success. Since 2005, fewer than 10 hogs have been removed annually off any Travis County property.

Due to the overall low success rate, Travis County staff has gradually started trapping, both independently and in cooperation with, contract hog trappers. In August 2008, Travis County staff and hog trappers began to utilize pen traps. The low success rate in trapping feral hogs

may be due to the limitations of cage traps. Pen traps are large, semi-permanent circular pens of varying size. The benefits of the pen traps include: 1) many hogs can be captured at once, thus decreasing the amount of hogs remaining outside that may become trap wary (this can be the case with cage-type traps); 2) white-tailed deer can escape fairly easily by jumping over the sides; and 3) trapped animals are less confined and therefore less stressed, lessening the chance of injury.

The following guidelines will assist Travis County staff and contract hog trappers in achieving the primary goal of removing feral hog populations from all county-managed properties.

Hog Trapping Guidelines

General trap management guidelines

- Traps will only be operated when they can be checked at least once daily for pen traps, and twice daily for cage traps. Traps will immediately be secured inoperable if they cannot be checked for any reason.

- At times of predicted inclement weather (70% chance of sustained rain, or higher), traps will be secured inoperable to reduce the need to drive on preserve roads and to reduce the exposure of a trapped animal to the elements. Any trap that is located within easy walking distance of the office or paved road may be left in operation.

- When checking traps, listen closely before approaching for any sign that something has been trapped (banging/grunting). If it appears that hog(s) have been trapped, approach slowly and cautiously to determine if other hogs remain outside of the trap. Sows separated from their young can be particularly dangerous and aggressive.

- Traps will be placed in locations that are shady throughout the day. Pen traps will have supplemental water, especially during summer months.

- All cage traps and trap doors (on pen traps) will be secured (chained or cabled) and locked (usually to a nearby tree) to prevent theft.

- To decrease the potential of capturing non-target carnivores, such as domestic dogs or coyotes, carrion will never be used as bait.

- The following will be adhered to each time a trap is checked regardless of whether or not an animal (live or dead) needs to be removed:

    1) Check the amount of bait and add more bait if needed;
    2) Check and re-fill water supply if present;
    3) Note any animal sign around or in trap;
    4) Reset trap if appropriate;
    5) Notify appropriate staff of any issues (damaged cage, faulty trigger, etc.).

Trapped animal management guidelines

- Trapped hogs will be dispatched swiftly, humanely and efficiently by approved staff (Travis County Park Rangers, Paul Fushille, Kevin Connally, Ron Phillips) or approved volunteer hog trappers. No cruelty will be tolerated. Humane and efficient dispatch will also be used for non-target animals that are suffering from a self-inflicted injury that occurred while in the trap.

- All personnel that have been approved to dispatch an animal using lethal means (hereafter, dispatcher) will be notified of the location of each trap and when traps are in and out of operation. No new traps will be placed into operation until all necessary contacts have been notified of the new location(s).

- When a hog is found trapped on County **Preserve** lands, a dispatcher will be contacted in the following order:

    1) Contracted hog trapper;
    2) Approved on-site staff (Paul Fushille, Ron Phillips);
    3) Nearest available approved off-site dispatcher (Kevin Connally, Travis County Park Rangers);
    4) TPWD Game Warden.

- When a hog is found trapped on County **Park** land (park-operated traps), a dispatcher will be contacted in the following order:

1) Contracted hog trapper;
2) Nearest available Travis County Park Ranger;
3) Approved off-site staff (P. Fushille, R. Phillips, K. Connally);
4) TPWD Game Warden.

- When possible, dispatch shots (preferably from a rifle**) will be made from an elevated position (upslope, or from a truck bed). The backdrop to any shot must be evaluated, and the safest angle will always be taken to avoid any neighborhoods, homes, roads, etc. (***A rifle allows a safe shot to be made from a distance, which minimizes the stress to the trapped animal caused by a human's immediate presence*).

- Under no circumstances will a trapped or dispatched animal, remain in the possession of an employee. The remains of any non-target animal will not be removed from Travis County property unless directed to do so by a Texas Parks and Wildlife (TPWD) Game Warden **(389-4848)**. Transport and handling of carcasses will be done discreetly and in a respectful manner.

- Hog carcasses will be handled in one of three ways:

    1) A contracted hog trapper may remove the carcass off site;
    2) The carcass can either be dragged off from trapping site or transported to an appropriate remote location and left to decompose. Carcasses will be left out of view from any road or trail;
    3) If necessary, a carcass may be transported to a County animal composting facility.

- Unless otherwise approved by the Travis County NR Program Manager, no live hog will be transported off of a County-managed property. If approved, hog(s) will only be transported in compliance with State laws and regulations.

- If a White-tailed deer has been trapped, these steps will be followed:

    1) If the deer has not sustained serious physical injury, and appears to be unharmed, carefully release the deer from the trap as soon as possible. Take extra precautions to put your safety first, and attempt to free the animal as quickly as possible. Due to the close proximity of humans, the deer will flail within the trap as you are attempting to open the door and may cause itself and the trapper injury.

2) If the deer must be dispatched due to injuries sustained in a trap, a TPWD Game Warden must be notified (**389- 4848**) before the animal is put down. Any directive given by a TPWD Game Warden must be followed.
3) Unless otherwise directed by a TPWD Game Warden, the deer carcass will be removed and left to decompose in an out-of-sight location.
4) If deer are consistently being trapped in a particular cage trap, the trap will be closed and/or relocated.

- Contact a dispatcher to put down a trapped deer, or other non-target animal, on Travis County **Preserve** lands in the following order:

1) Approved on-site Natural Resources staff (Paul Fushille, Ron Phillips);
2) Contracted hog trapper;
3) Nearest approved dispatcher (Kevin Connally, Park Rangers);
4) TPWD Game Warden.

- Contact a dispatcher contact priority to put down a trapped deer, or other non-target animal, on Travis County **Park** lands in the following order:

1) Nearest available Travis County Park Ranger;
2) Contracted hog trapper;
3) Nearest approved dispatcher (Kevin Connally, Paul Fushille, Ron Phillips);
5) TPWD Game Warden.

- Prior to dispatching any animal these internal communication steps must be followed:

1) Notify NR staff to inform them of the event and to determine the location of all staff;
2) On Channel 1 (Ranger 1), make contact with (preferably first) a West District Ranger; ask them if they are available for a phone call (or ask them to go to the NR channel); then notify them of the event and to determine the location of any Park Ranger that might be in the area. If communication can only occur via radio, caution should be taken and language should be concise and sensitive to the situation.

- As a courtesy, notify any neighbors that might need a warning due to close proximity (Lonnie Moore, City of Austin, SAS, etc.)