2006 SUMMARY OF

WILDLIFE MANAGEMENT ACTIVITIES

ON TRAVIS COUNTY MANAGED TRACTS OF THE

BALCONES CANYONLANDS PRESERVE







Travis County Natural Resources Division

Project Numbers 0905-0220, 0905-0226, 0905-0332, 0905-0432, 0905-0703

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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.

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 FY2006 focused on three species: brown-headed cowbirds (*Molothrus ater*), feral hogs (*Sus scrofa*), and white-tailed deer (*Odocoileus virginianus*).

BROWN-HEADED COWBIRDS

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 cowbird management 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 2006 Travis County cowbird-trapping program. Five traps were operated within or adjacent to Travis County's Balcones Canyonlands (BCP) preserve: one trap at Hamilton Pool Preserve, one trap adjacent to the Ribelin tract (private ranch), two traps on or adjacent to the Jollyville Unit (Nootsie tract and on private property

adjacent to the Vireo Ridge tract on FM 2769). The fifth trap was newly added to the program at Milton Reimers Ranch County Park.

BACKGROUND

Cowbird trapping was previously conducted in Travis County for the BCP by Espey Huston and Associates, 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 A).

METHODS

Cowbird trapping in 2006 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 three metal hybrid traps (6'x8'), two of which are on loan from Texas Parks and Wildlife.

Decoy birds (40 males, 20 females) were obtained from Texas Parks and Wildlife. These decoys were used 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 three traps. Table 1 summarizes the 2006 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	March 13	June 28	26 Males, 11 Females
Hamilton Pool Preserve	March 13	June 28	14 Males, 9 Females
Ribelin tract (adjacent)	March 13	June 6	8 Males, 4 Females
Milton Reimers Ranch Park	April 4	June 28	4 Males, 3 Females
Nootsie tract	May 1	June 3	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 found in traps were removed unharmed, however, on 2 occasions a northern mockingbird (*Mimes polyglottis*) was found dead in the Hamilton Pool Preserve trap (**Table 2**).

Table 2. Non-target species found in Travis County operated traps, 2006.

Common Name	Species Name	Trap(s)	Comments
Yellow-headed blackbird	*X. xanthocephalus*	Ribelin tract, RM 2769	both released
Red-winged blackbird	*Agelaius phoeniceus*	RM 2769	released
Sparrow *sp*.	unknown	RM 2769	released
Northern cardinal	*Cardinalis Cardinalis*	Reimers Ranch	released
Northern mockingbird	*Mimes polyglottis*	Hamilton Pool	found dead

RESULTS AND DISCUSSION

In 2006, a total of 223 male, 191 female and two juvenile cowbirds were captured (416 total). Table 3 summarizes 2006 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). Trapping success and rates were higher in 2006 then those of previous years with 416 cowbirds captured and an overall efficiency trapping rate of 51.5%.

Milton Reimers Ranch Park trap had the highest historical trap efficiency rate (125.6%) recorded for the Travis County cowbird control program with a peak rate in May of 177%. Milton Reimers Ranch Park is a newly acquired tract of land that was historically ranched. Although most livestock were removed from pastures, the Reimer Family still retains the right to raise penned livestock within a small area of the park. The Reimers Ranch Trap was placed adjacent to goat pens where dozens of cowbirds were observed congregating. Although trap operation extended from early April to late June, efficiency rates were calculated from April to mid May due to continuous trap breachment from rock squirrels compromised accurate efficiency rates after May 13th.

Table 3. Results of the 2006 Travis County cowbird-trapping season.

Trap Location	Month	Days in Operation	Males captured	Females captured	Juveniles Captured	Total Captured	Trap Efficiency (%)
FM 2769	March	18	9	7	0	16	38.9
	April	30	31	27	0	58	90
	May	31	9	8	0	17	25.8
	June	27	0	3	1	4	11.1
	Total	**106**	**49**	**45**	**1**	**65**	**42.5**
Hamilton Pool Preserve	March	18	10	7	0	17	38.9
	April	30	14	20	0	34	66.7
	May	31	53	34	0	87	109.7
	June	27	6	4	0	10	14.8
	Total	**106**	**83**	**65**	**0**	**148**	**61.3**
Nootsie tract	May	30	8	3	0	11	10
	June	5	0	0	0	0	0.0
	Total	**35**	**8**	**3**	**0**	**11**	**8.6**
Ribelin tract	March	18	2	4	0	6	22.2
	April	30	8	8	0	16	26.7
	May	31	10	17	0	27	54.8
	June	6	0	0	1	1	0.0
	Total	**86**	**20**	**29**	**1**	**50**	**34.1**
Milton Reimers Ranch Park	April	26	51	26	0	77	100.0
	May	13	12	23	0	35	177.0
	Total	**39**	**63**	**49**	**0**	**112**	**125.6**

The Hamilton Pool Preserve trap captured 148 birds with the second highest efficiency rate of 61.3%. Although this is a substantial rate increase from the 2005 breeding season (37%), trap efficiency remains below 2003 (75.2%) and 2004 (125.5%) trapping seasons. Both Hamilton Pool and Reimers Ranch traps likely have high efficiency due to ranching in the immediate adjacent areas.

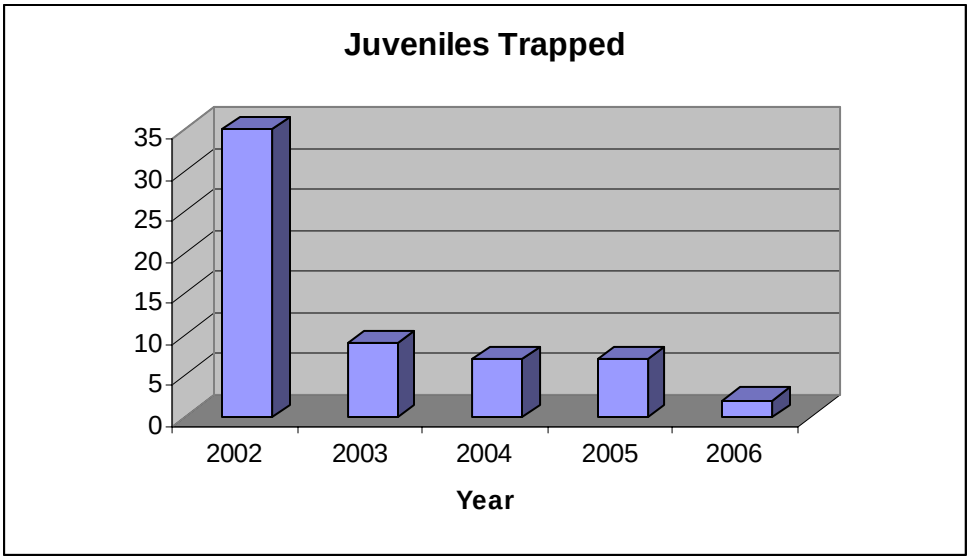
The Ribelin tract trap also increased efficiency from 8.6% to 34.1%, however, it was moved from a substantial power line corridor (2005 location) to a more central location on an adjacent ranch where cattle is currently being phased off property. In 2007 this trap will be removed due to future residential development.

The Nootsie trap proved to be the least effective for the 2006 trapping season. This may be due to a later opening date (May1). Only three females were captured yielding an efficiency rate of 8.6%. This trap will continue to operate on the Nootsie tract for the 2007 trapping season; however, it will relocated along a power line corridor adjacent to the Nootsie.

Substantial trap efficiency rate increases for the 2006 trapping season were attributed to both increased number of cowbirds captured and shorter time intervals of trap operation. However, 2006 efficiency rates would have still exceeded 2005 rates regardless of trapping duration. It should be noted the number of juveniles trapped has been in steady decline over the past several years with only two juveniles captured during the 2006 trapping season (Chart 1). The declining juvenile capture rate may indicate an overall success in removing females out of adjacent endangered avian species habitat.

During the 2006 trapping season, a female golden-cheeked warbler and a female painted bunting (*Passerina ciris*) were observed tending juvenile brown-headed cowbirds within the Balcones Canyonlands Preserve. Although these were the only visual observations of host species rearing juvenile brown-headed cowbirds, audible detections of juveniles were heard within the Milton Reimers Ranch Park, indicating the continual need for trapping on this parcel of land.

Chart 1. Number of Juveniles trapped from 2002-2006.



FERAL HOGS

The BCP Land Management Plan directs land managers to control populations of feral hogs to ensure minimal negative impacts to the native wildlife and plant communities 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 well 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. Preserve areas showing signs of significant feral hog populations included the Steiner Ranch Preserve, Canyon Vista tract, the Jollyville Unit, and the Ribelin Ranch tract.

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.

Large wallows, rooted areas, well-worn trails, and first-hand staff encounters in the field verified the significant hog population on the Canyon Vista, Ribelin Ranch and Jollyville Unit tracts.

The County has continued to coordinate efforts with surrounding landowners and the City of Austin to implement management actions adjacent to the Canyon Vista and the Ribelin Ranch tracts.

Travis County removed feral hogs incidental to white-tailed deer management activities and contracted with independent hog-trappers to remove feral hogs through 2006.

METHODS

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 utilize stock panel and heavy welded-wire traps of their own design 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.

RESULTS AND DISCUSSION

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 6 feral hogs were removed during FY2006, compared to 3 in FY2005, 11 in FY2004, 20 hogs during FY2003 and 103 in FY2002 (Travis County Natural Resources 2002, 2003, 2004, 2005).

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 County's BCP tracts 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

BACKGROUND

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 2005 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 9.6 acres on the surveyed areas of the Jollyville Unit. Census results for Pace Bend Park estimate deer densities of 1 deer per 3.4 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 Managed Lands Deer Control Permits (MLDP) for both the Jollyville Unit of the BCP and Pace Bend Park in early FY2006. These permits allowed Travis County to implement a lethal cull of deer by approved harvesters from September 1, 2005 through February 28, 2006. 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 MLDP and the constraints inherent to weather variables. A total of 116 deer were safely and humanely removed from the Jollyville Unit and Pace Bend Park, resulting in an approximate net gain of 58 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 FY2006.

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 continue to 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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APPENDIX A

Travis County Natural Resources Cowbird Trapping Program History, 1997-2006

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 (Lonnie Moore)	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 (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 tract	13, 11, 7	31
2005 Total			**200**
2006	Hamilton Pool Preserve mega	83, 65, 0	148
	FM2769 (Lonnie Moore) 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**

* Total adjusted to exclude cowbirds that escaped.

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