

LOWER RIO GRANDE VALLEY
NATIONAL WILDLIFE REFUGE

Alamo, Texas

ANNUAL NARRATIVE REPORT

Calendar Year 2001

U.S. Department of the Interior
Fish and Wildlife Service
NATIONAL WILDLIFE REFUGE SYSTEM

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REVIEW AND APPROVALS


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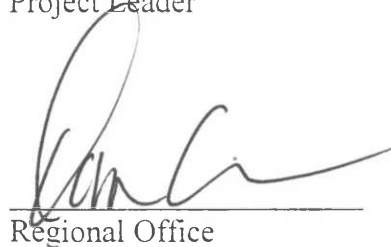
ANNUAL NARRATIVE REPORT

Calendar Year 2001

 06-18-03
Refuge Manager Date

 6/17/03
Project Leader Date

 7/9/03
Refuge Supervisor Date

 7/15/03
Regional Office Date

INTRODUCTION

Complex: South Texas Refuge Complex
[*Lower Rio Grande Valley, Santa Ana, Laguna Atascosa National Wildlife Refuges*]
(Complex established 1 October, 2000)

Refuge: Lower Rio Grande Valley National Wildlife Refuge

Enabling Legislation: Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j; 70 Stat. 1119), as amended, and Transfer of Certain Real Property for Wildlife Conservation Purposes Act (16 U.S.C. 667b-667d), as amended

Date: 12 February, 1979

Purpose: "...for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956; and "... particular value in carrying out the national migratory bird management program." 16 U.S.C. § 667b (Transfer of Certain Real Property for Wildlife Conservation Purposes Act)

Present Acreage: 82,524

Headquarters Location: 7.5 miles south of U.S. Business 83 at Alamo, TX; the entrance is 0.25 mile east and south of the junction of U.S. 281 and FM 907

Mailing Address: Rt. 2 Box 202-A
Alamo, TX 78516
(956) 784-7500

Counties: Cameron, Hidalgo, Starr, and Willacy

Legislative Districts: 15, 27, and 28

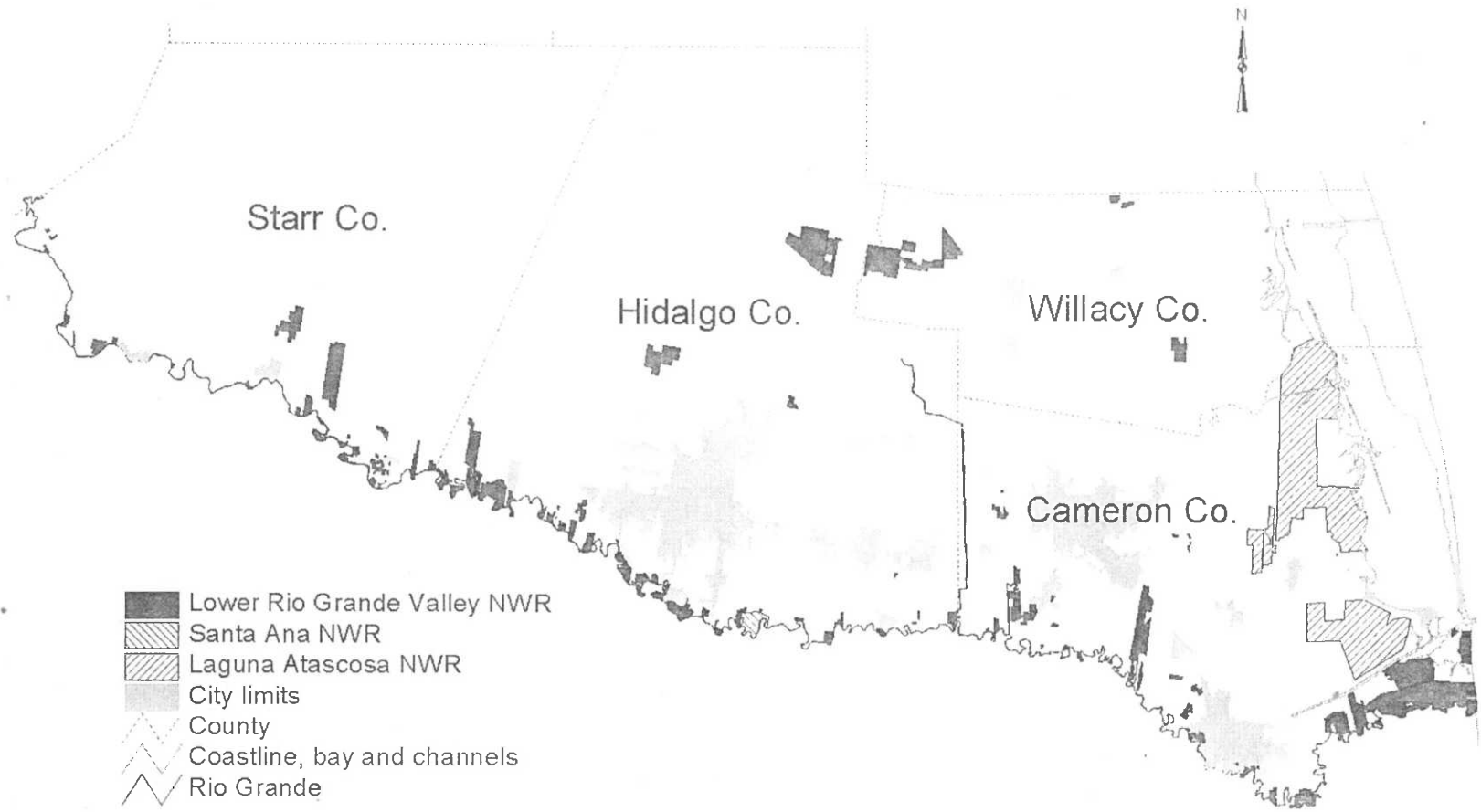
The Lower Rio Grande Valley National Wildlife Refuge is in the process of protecting and connecting blocks of rare habitat that will undoubtedly serve as a model for future habitat conservation networks. Individual tracts of the Refuge serve as both core habitat blocks and corridor links. Directly to the south are ecologically valuable areas such as the Laguna Madre of Tamaulipas, and the Sierra de los Picachos (in Nuevo Leon), Mexico which are receiving focused conservation attention from the Mexican Government and a number of interested Mexican and U.S. organizations. To the north lies the Laguna Atascosa National Wildlife Refuge and the great Texas Ranch Country with large blocks of intact habitat.

The Refuge currently manages 111 individual tracts totaling 83,000 acres. The Refuge is authorized to purchase additional lands, up to 132,500 total acres, anywhere in the four counties of the Lower Rio Grande Valley. The Refuge prioritizes acquisition of lands along the river corridor extending 275 miles from Falcon Dam to Boca Chica. When possible the Refuge secures parcels that are directly adjacent to existing refuge lands and serve as links connecting separate tracts (the analogy being that of a chain, with even a single link missing, doesn't function); inholdings are purchased when possible. Areas that have unique or notable resources, or on which endangered species are known to occur, receive priority for acquisition.

The protected lands of the Refuge support perhaps the richest and rarest biodiversity in the continental United States. The Refuge manages habitats supporting 16 federally threatened and endangered species, two recently down listed species, and 57 state protected species. In total, 485 species of birds, 294 species of butterflies, 115 species of reptiles and amphibians, and 83 species of mammals are known to occur in the Lower Rio Grande Valley and adjacent Gulf of Mexico coastal waters. Presently, 776 plant species are documented on the Lower Rio Grande Valley National Wildlife Refuge, but an estimate of the total number of plant species occurring in the Refuge's area of ecological concern is placed at 1,200 species.

When the project began, 95% of the Lower Rio Grande Valley's unique habitat had been eliminated, primarily for agriculture. Consequently, much of the land purchased by the Service has been, and continues to be, actively cultivated. To address this, the Refuge has developed an extensive cooperative farming and revegetation program that are intertwined to replant between 750 and 1000 acres of farmland per year to native habitat. Twenty years into the project, the Service is now seeing great returns on it's investment. The earliest restoration efforts have matured to produce habitats that are harboring species of plants and animals that can be seen nowhere else in the United States.

Public use of the Refuge is on the rise. In 1999, forty thousand acres of the Refuge were opened, for the first time, to public use. In the year 2000, twenty thousand people visited the Refuge. Most of the Refuge's open areas, as well as several soon to be opened areas, are slated to be included as part of the World Birding Center. The World Birding Center is a network of ten sites throughout the Lower Rio Grande Valley in partnership with the Service, Texas Parks and Wildlife Department and Valley communities. The World Birding Center's main objectives are conservation, education, and eco-tourism.



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A. HIGHLIGHTS

The South Texas Refuge Complex includes the Lower Rio Grande Valley, Santa Ana, and Laguna Atascosa National Wildlife Refuges and was established on 1 October, 2000 (FY 01)

The Lower Rio Grande Valley National Wildlife Refuge purchased four tracts totaling 993.16 acres at \$2,425,663.

The Refuge Restored 784.5 acres of brush and woodland habitat by planting 198,808 seedlings of 54 different species.

The Refuge conducted the tenth annual Rio Resforestation event; eleven hundred volunteers replanted 45 acres.

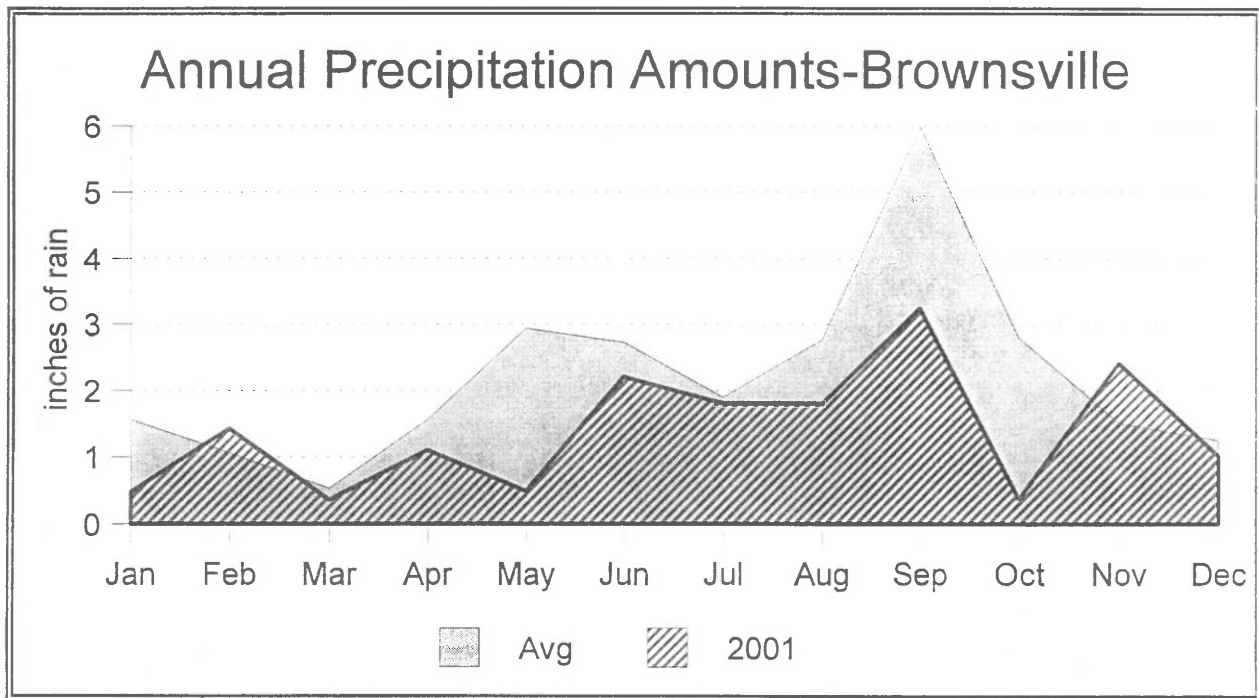
The Refuge Complex expanded its Fire Program by establishing three substations and signing mutual aid agreements with 38 local departments.

The Refuge Complex completed its Fire Management Plan.

B. CLIMATIC CONDITIONS

The Lower Rio Grande Valley was hotter and drier than average in 2001. March was the only month in which average temperature was lower than normal.

Annual Rainfall amounts of less than 20 inches are rare in South Texas occurring only 19 times in the last 100 years. For the third time in four years annual rainfall amounts totaled less than 20 inches. The total precipitation in 2001 was 16.74 inches as recorded at the National Weather Service Center in Brownsville, Tx. One aspect of local precipitation patterns to bear in mind is that the Refuge (wildlife corridor) experiences varying precipitation patterns as it generally becomes more xeric east to west.



C. LAND ACQUISITION

There was no Congressional land acquisition appropriation for FY 2001 for the Refuge. All funds expended during CY 2001 were derived from the FY 2000 appropriation of \$500,000 and part of the remainder of Title V funds (originally 5 million). Appraisal requests were submitted for six new tracts.

The official total acreage for Lower Rio Grande Valley NWR at the end of CY 2001 was 82,524. It should be noted that 19,909.21 acres (Bahia Grande - Redhead Ridge area) in Cameron Co. were transferred to Laguna Atascosa NWR in November, 2000.

1. Fee Title Acquisitions

Tract (2043), named Ranchito South, is 28.30 acres in Cameron Co. acquired for \$32,050 on July 24, 2001.

Tract (2057), named the Fish Hatchery Tract, is 249.14 acres in Cameron Co. acquired for \$1,993,144 on September 11, 2001. This tract is adjacent to the Resaca de la Palma State Park, one of the future World Birding Center Sites. The entire 250 acres was threatened by a subdivision development project, which would have had a major impact on the Brownsville World Birding Center. The Service was able to step in and support the World Birding Center effort in partnership with Texas Parks and Wildlife Department and the City of Brownsville.

Tract (454), an addition to the Los Ebanos Tract, is 120.21 acres in Hidalgo Co. acquired for \$28,272 on September 21, 2001.

Tract (621a), an addition to the Los Olmos Tract, is 595.51 acres in Starr Co. acquired for \$372,196.88 on September 17, 2001.

Wildlife Biologist David Blankinship conducted and submitted reports on six Level I Pre-acquisition Contaminant Surveys.

D. PLANNING

1. Master Plan

The U.S. Fish and Wildlife Service approved an Interim Comprehensive Management Plan (CMP) for the Lower Rio Grande Valley and Santa Ana National Wildlife Refuges in 1997, and the interim CMP was subsequently converted into a Refuges Comprehensive Conservation Plan (CCP). The CCP serves as a management tool to be used by Refuge staff in the preservation and restoration of the natural resources of the Lower Rio Grande Valley ecosystem, by guiding management decisions and outlining strategies for achieving Refuge goals and objectives.

The CCP identifies five goals for the Lower Rio Grande Valley and Santa Ana National Wildlife Refuges: 1) the protection of biological diversity, land and waters, 2) the protection of water rights, water management and the management of wetlands, 3) the protection and improvement of water quality, 4) the protection of cultural resources and 5) the provision of compatible wildlife dependent public uses, recreational opportunities, interpretation and education.

2. Management Plan

The Refuge finalized four step-down management plans to guide management decisions and actions. Each step-down management plan is discussed in further detail in a subsequent section of this narrative. The four plans, and the subsequent sections they are contained within, are: the Fire Management Plan (F.9.), the Feral Hog Management Plan (G.15.), the Public Use Management Plan (H.1.) and the Hunting Plan (H.9.).

4. Compliance with Environmental and Cultural Resource Mandates

A finding of No Significant Impact was issued by the Regional Director relating to implementation of the CCP. All four of the management plans are step down plans supported by the CCP and its supporting EA. Three of the plans were supported by Section 7 Consultations (the Fire Management Plan Sect. 7 Consultation is ongoing).

5. Research and Investigations

Special Use Permits were issued for the following research and Investigations:

Dr. Robert McLean of the National Wildlife Health Center to mist-net, band and draw blood samples from birds from areas on Santa Ana and Lower Rio Grande Valley for a study of the spread of West Nile Virus. The permit also allowed the team to collect mosquitoes. Bob Dusek of USGS, National Wildlife Health Center banded 48 passerines at Boca Chica, 125 on the Mercedes tract, 51 at Laguna Atascosa NWR, and 175 on private land.

Dr. Ed C. Knudson and Charles Bordelan Jr. to collect species of Lepidoptera as part of work toward publishing a checklist of Lepidoptera of the Rio Grande Valley. Biology staff examined a

draft of the above book in September, 2002, and a list of species collected from specific refuge tracts was supplied at that time.

James M. Hill, associated with Randolph Macon College in Ashland, VA, to collect tiger beetles on public use tracts of Lower Rio Grande Valley. A species list will be provided to the refuge.

Dr. Timothy Brush and graduate student Steve Monk, University of Texas Pan American, to conduct censuses of Audubon's Orioles and other species on Lower Rio Grande Valley tracts.

Dr. Frank Judd and Dr. Robert Lonard from the University of Texas - Pan American began a study of ecological succession of replanted, brushland, and unaided secondary succession vegetation on refuge as well as Texas Parks and Wildlife lands.

Glenn Proudfoot from Texas A&M University - Kingsville continued to monitor owl nest boxes for Ferruginous Pygmy Owls and documented use of boxes by numerous other bird species.

On Refuge lands, the following project topics have been studied by FWS staff and volunteers:

Farming Officer Monica Monk studied plant survivorship in replanted areas providing valuable data for the restoration program.

ROS Kevin Shinn surveyed 27 refuge tracts for evidence of ocelots and found several on El Jardin and San Perlita tracts where cats had been previously been documented.

WB Sternberg surveyed the endangered Zapata bladderpod population at the Cuellar tract in June 2001 and found very few individuals possibly due to the ongoing drought.

E. ADMINISTRATION1. Personnel

In 2001, South Texas Refuge Complex had 23 total PFT FTEs, Lower Rio Grande Valley had 21.1 total FTEs (20 PFT, 0.8 Term, 0.25 Seasonal SCEP).

Name	Title	Position	Date	Agency-Number	Type
Kenneth Merritt	Complex Project Leader	EOD	06/17/01	GS-0485-14	PFT
Jeff Rupert	Refuge Manager			GS-0485-12	PFT
Sonny Perez	ROS-Cameron			GS-0485-7	PFT
Kevin Shinn	ROS-La Sal Vieja/Hidalgo			GS-0485-9	PFT
Lance Koch	ROS-Starr/W. Hidalgo	Transfer to R6	08-11-01	GS-0485-9	PFT
Monica Monk	Farming /Water Rights Officer			GS-0401-11	PFT
Chris Best	Plant Ecologist			GS-0408-11	PFT
Rene Ruiz	Forestry Tech-Reveg			GS-0462-6	Term
Noreen Mastascusa	Forestry Tech-Reveg			GS-0462-6	PFT
Bill Lanahan	Maintenance Supervisor			WS-4749-8	PFT
Joe D'Arrigo	Engineering Equipment Operator			WG-5716-10	PFT
Dan Charette	Maintenance Worker			WG-4749-6	PFT
Randy Salazar	Refuge Law Enforcement Officer			GS-0025-9	PFT
J.D. Trevino	Refuge Law Enforcement Officer			GS-0025-7	PFT
Rich Johnston	Refuge Law Enforcement Officer	EOD	11/18/01	GS-0025-5	PFT
David Blankinship	Supervisory Biologist			GS-0486-12	PFT
Charles Cranfill	Outdoor Recreational Planner	transfer from SA	03/11/01	GS-0023-11	PFT
Tina Gallegos	ROS	conv-scep	08/12/01	GS-0485-7	PFT
Mitch Sternberg	Wildlife Biologist	conv-scep	05/30/01	GS-00486-7	PFT

Rachel Villanueva	Administrative Assistant			GS-341-11	PFT
Gary Stolz	Outdoor Recreational Planner			GS-0023-13	PFT
Marisa Law	Office Assistant	EOD	09/14/01	GS-303-5	PFT
Mark Ruggiero	FMO-Complex			GS-0462-09	PFT
Chris Adamcik	AFMO-Complex	EOD	09/01/01	GS-0462-07	PFT
Mark Stewart	WUI-Complex	EOD	09/01/01	GS-0401-09	PFT
Eliseo Garcia	Prevention-Complex			GS-0462-07	PFT
Lyddan Ballard	Forestry Tech-Complex			GS-0462-05	PFT
Brent Cassens	Forestry Tech-Complex x			GS-0462-06	PFT
Gary Moberly	Forestry Tech-Complex			GS-0462-06	
Camille Johnson	Forestry Tech-Complex	Transfer to USFS	07/15/01	GS-0462-05	PFT
Alex Garcia	Forestry Tech-Complex	EOD	06/01/01	GS-0462-04	PFT
Jed Kennan	Forestry Tech-Complex	EOD	06/01/01	GS-0462-05	PFT
Tony Elizondo	Forestry Tech-Complex	EOD	06/01/01	GS-0462-05	PFT
Feliciano Ramirez	Forestry Tech-Complex	EOD	06/01/01	GS-0462-05	PFT
John Thomas	Forestry Tech-Complex	EOD	06/01/01	GS-0462-05	PFT
Rosie Meeks	Forestry Tech-Complex	EOD	06/01/01	GS-0462-05	PFT
Joe Perez	Forestry Tech-Complex	EOD	06/01/01	GS-0462-05	PFT
Bobby Schat	Forestry Tech-Complex	EOD	06/01/01	GS-0462-05	PFT
Jesse Valderas	Forestry Tech-Complex	EOD	06/01/01	GS-0462-06	PFT
Connie Lanahan	Fire Program Technician			GS-0303-06	PFT
Lety Handy	Technician Dispatcher			GS-0303-05	PFT

The Regional audit of maintenance worker positions resulted in all of the Refuge Maintenance Staff receiving grade increases on May 20, 2001.

2. Youth Programs

Lower Rio Grande Valley and Santa Ana both participated in the YCC program in 2001. Both Refuges shared a work crew stationed at Santa Ana. The YCC program in 2001 consisted of six high school-aged Crew Members and one adult Crew Leader. The YCC crew worked for 40 hours each week for six weeks between June and August. The majority of the work done by the YCC crew during this time was in the Refuge's revegetation program. This work included collection of native plant fruits and seeds, propagation of native plants, and maintenance of the Refuge's native plant nursery. A large amount of boundary posting was completed by the YCC

crew at some of the Refuge's northern tracts, and the YCC crew also helped the maintenance program by washing vehicles, removing weeds along the maintenance yard fence, and cleaning and organizing the maintenance yard and maintenance buildings.

3. SCEP

Lower Rio Grande Valley converted two SCEP students to permanent full-time positions: Tina Gallegos to a Refuge Operations Specialist position in June; and Mitch Sternberg to a Wildlife Biologist position in May.

4. Volunteer Program

The Lower Rio Grande Valley and Santa Ana National Wildlife Refuges have a large, comprehensive Volunteer Program with more than 200 active volunteers. Volunteers range in age from grade school children to senior citizens. Boy Scout groups and school groups commonly participate in large projects. During the winter months, senior citizens comprise a large portion of the volunteer work force, as retired people from northern states and Canada temporarily reside in the mild climate of southern Texas. In 2001, volunteers contributed in excess of 16,700 hours of their time assisting Lower Rio Grande Valley and Santa Ana NWR's. The Volunteer Program is usually supervised by a Volunteer Coordinator (volunteer), but in 2001 this position was assumed by various Refuge staff members on a collateral, or interim basis.

Volunteers assist Refuge staff with a wide variety of tasks, including the maintenance of buildings, vehicles and equipment, construction and demolition, native plant propagation and revegetation, exotic plant species eradication, wildlife monitoring and research, habitat management, trash cleanup, fence repair, boundary posting, visitor services and environmental education. The most significant benefits from volunteer assistance were realized by the Maintenance and Public Use Programs of the Refuge.

Santa Ana has 6 trailer pads, with full utilities, on which volunteers can park their own travel trailers or recreational vehicles for extended periods of volunteer service for both Refuges. Retired citizens with their own travel trailers generally occupy all available trailer space at the Refuge from October through April. During the period of May through September, the Refuge is able to provide four of its own trailers to house volunteers, which are generally used by college-aged volunteers and interns.

An annual Volunteer Appreciation Banquet is held at the Refuge each March, at which volunteers are recognized for their efforts and are presented with awards based on the cumulative number of hours they have contributed to the Refuge. One senior citizen, who has been volunteering at the Refuge for greater than 15 years, finished 2001 with a cumulative total in excess of 10,600 hours.

5. Funding

FY 2001 funding for South Texas Refuge Complex (21550) totaled \$872 k.

Base 1261	Fire 9251	Total Budget
\$169,400	\$702,807	\$872,207

FY 2001 funding for Lower Rio Grande Valley National Wildlife Refuge (21552) totaled \$1.4 m.

Base 1261	CCS	YCC	DRUG	NFTA	Annual Maint. 1262	Def. Maint. 1262	Total Budget
\$957,100	\$45,000	\$18,000	\$54,000	\$99,000	\$85,000	\$118,900	\$1,377,000

6. Safety

The safety committee consisted of Randy Salazar, Lety Handy, Joe D'arrigo, and Dave Blankinship. The committee met periodically to discuss refuge safety practices and to plan staff safety training. In 2001, numerous safety meetings covering a range of different topics were conducted. These meetings were attended by all staff members for the benefit of a safer working environment. Safety topics that were discussed included: catalytic converter fire safety, jack safety, hurricane preparedness, driving safely in traffic, and information regarding new child restraint laws.

7. Technical Assistance

The Refuge was actively involved with the formation of the Lower Rio Grande Bi-National Ecosystem team. This Team was established to help address, and coordinate, activities related to conservation and management of wildlife resources on both sides of the Rio Grande, from Falcon Reservoir to the Gulf of Mexico. The Refuge is also an active member of the Coastal Ecosystem Team.

WB Blankinship attended 18 coordination meetings with various Federal, State and private agencies on refuge related issues such as the Brownsville Weir, Philip's Banco wetland and public use project, Bentsen Park water issues, World Birding Center, land acquisition, and reflooding of the Bahia Grande basin.

F. HABITAT MANAGEMENT

1. General

The Refuge CCP highlights several major goals to restore, enhance, and protect natural diversity including threatened and endangered species; and to achieve wetland protection, enhancement and rehabilitation, manage habitat to achieve appropriate biological diversity.

2. Wetlands

Plans to restore La Gloria wetlands north of the IBWC levee identified a need to negotiate water pumping agreement with Charles Shaufner, a local farmer, and repair a faulty water control structure. The Refuge repaired the faulty structure in early March. Mr. Shaufner pumped approximately three acre feet of water to test the structure and it held. Mr. Shaufner sealed the structure a couple of weeks later because he claimed that he was losing his irrigation water because the structure was leaking. In November, the Refuge reset the structure and rehabilitated the rip-rap to deter erosion. In December, the fire crew used the southern unit of this wetland to test and train on the newly acquired GyroTrak. The GyroTrak proved to be effective in structural removal of noxious plants from the unit (i.e. Baccharis).

Drought conditions and beaver activity continued to negatively impact Ranchito tract wetlands. Plugged water control structures and blocked delivery canals restricted the Refuge's ability to resupply water-depleted wetlands. ROS Perez coordinated with and provided a permit to USDA-APHIS Wildlife Services Agent David Trevino, for beaver control resulting in the removal of six nuisance beavers.

3. Forests

The revegetation and cooperative farming programs completed forest and shrubland restoration on 784.5 acres of refuge cropland. Twenty-seven fields on 11 refuge tracts were revegetated with 198,808 seedlings of 54 species of native trees, shrubs and cacti. The following table summarizes these efforts.

The Rio Reforestation X event (see Section H. 7.) was held at the El Morrillo Banco tract near Mission which is the main site of the World Birding Center. A significant challenge during the fall 2001 planting season was a period of drought lasting from the third week of September until mid-November, a period when rainfall is expected to be high. El Morrillo was planted with marginal soil moisture, and irrigated two weeks later. On November 26-27, a stratified sample of 1,000 seedlings indicated that mortality was 25%. Due to the importance of the site, we assigned the cooperative farmer labor crew to replant all dead seedlings. In May, 2002, we determined that the combined survival rate at this site was 88%.

Rainfall was again well below normal, from late December until mid-May. This has resulted in higher mortality rates at some dryland planting sites, such as La Joya and Los Ebanos tracts.

Table. Summary of 2001 Revegetation.

Tract	Field	Farmer	Acres	Seedlings	Planted
Abram/Abram W	2, 13, Inholding	Aguilar	14.4	3,469	09-Jan-02
Coma	C-Middle	Beckwith	20.6	5,072	20-Dec-01
Ebanos	23b	Salinas	36.2	8,895	12-Dec-01
Fresnos	5	Sandoval	22.1	5,324	08-Jan-02
Joya	1,6	Wilkins	59.6	14,708	10-Dec-01
Joya	6a, 6b	Wilkins	25.0	6,397	15-Jan-02
Monte Christo	Field Borders	Echols-Hensz	49.7	12,001	01-Oct-01
Morrillo	North	Wilkins/ RR-X	44.6	10,918	13-Oct-01
Morrillo replant	North	Wilkins	0.0	3,559	06-Dec-01
Rudman	12	Echols-Hensz	121.1	29,232	17-Oct-01
Rudman	14	Echols-Hensz	168.0	40,552	24-Oct-01
Southmost	1, 8, Fallow	Loop	11.6	2,808	21-Oct-01
Teniente	2a	Campbell	86.8	24,683	05-Dec-01
Teniente	2b	Campbell	19.0	5,487	10-Dec-01
Teniente	3	Campbell	85.5	20,639	14-Nov-01
Villa Nueva	3c, 3d	Leal	20.3	5,064	17-Dec-01
TOTALS:			784.5	198,808	

4. Croplands

The farmland phase-out program had a total of 10,010 farmland acres with 9,006 acres being used in the cooperative farming program. A total of 784.5 acres were revegetated by 13 cooperators to account for the government's share of each agreement. This acreage was planted with an average of 40 different species of native thorn-scrub forest habitat which is a valuable addition to the wildlife corridor (to all upland thorn-scrub wildlife species). Depending on the geographic location of each planting, canopy closure will be reached in 5 to 10 years (eastern to western Valley respectively). As part of the Refuge crop share, the cooperators provided field preparation, planting labor, irrigation (in some cases), and post planting weed control; totaling \$286,105.00 in value.

5. Grasslands

The availability of native plant seeds is one limiting factor to restoration efforts on refuge cropland. Seed availability has been a major problem in considering future grassland restoration. No commercial source exists for any native grasses originating within the refuge's ecological region. Recognizing the need to provide a future seed source for grassland restoration, we established seed-production plots of 26 accessions of native grasses and shrubs on a 6-acre irrigable field at La Joya tract.

6. Coastal

Coastal Loma/Tidal Flats. Efforts to deter Off-Road Vehicles and ATV impacts on dunes were increased through completion of boundary survey and posting of portions of the Refuge's beachfront at Boca Chica. All of the Refuge beachfront properties south of Hwy. 4 were surveyed and posted. These efforts significantly assisted law enforcement in citing illegal activities on the beachfront and dunes.

The Rio Grande did not flow into the Gulf of Mexico for most of CY '01. The decreased volume of water flowing East of Brownsville has allowed a sand barrier to form, effectively preventing the river from emptying into the Gulf. IBWC attempted to dredge the sand bank to restore flow, but the artificial channel only remained open for about one month. The sand barrier and vehicle accessible beach forced the Border Patrol to establish a barrier to delineate the international boundary. The sand barrier has some unforeseen positive effects, causing river waters to back-up onto hundreds of acres of Refuge tidal flats. These flats, south of Highway 4, were dry having been cut off from South Bay tidal surges by prior highway maintenance activities. The cut-off of the river to the Gulf has eliminated a very productive nursery area. It has been replaced by a expanded freshwater marsh and flats that have become very attractive to waterfowl and marshbirds and shorebirds.

7. Grazing

In 2001, development of a Grazing Management Plan began that outlines the justification for an experimental grazing program on Refuge property, as well as a plan of operations for implementing an experimental grazing program. Experimental grazing is identified as one of the objectives in the CCP. On many Refuge properties, extensive areas of invasive exotic grasses impede the establishment of native brush species, as well as provide a fine fuel for wildfires that destroy habitat and threaten property of adjacent landowners. An experimental grazing program is being considered as a habitat management tool to achieve two Refuge goals: 1) the enhancement of native brush habitat on Refuge property, and 2) the reduction of the threat of wildfire on Refuge property. Continuous grazing by cattle would reduce the competitive ability of the exotic grasses, allowing native brush species to germinate, establish and increase their coverage within grazed areas. Continuous grazing would also substantially reduce the amount of fine fuel within grazed areas, reducing the likelihood of fire ignition and spread. Five units within 3 tracts were identified as being most desirable for implementing an experimental grazing program. The five tracts, and the approximate acreage's that are considered suitable for the experimental grazing program are: East Lake (360 acres), La Sal Del Rey (245 acres) and Las Ruinas (165 acres).

8. Haying

In 2001, development of a Haying Management Plan began that outlines the justification for a haying program on Refuge property, as well as a plan of operations for implementing a haying program. On many Refuge properties, extensive areas of invasive exotic grasses impede the establishment of native brush species, as well as provide a fine fuel for wildfires that destroy habitat and threaten property of adjacent landowners. A haying program is being considered as a habitat management tool to achieve two Refuge goals: 1) the restoration of native brush habitat on Refuge property, and 2) the reduction of the threat of wildfire on Refuge property.

Harvesting hay on extensive areas of exotic grasses will substantially reduce the amount of fine fuel within hayed areas, reducing the likelihood of fire ignition and spread. Hay harvesting will also prepare areas for future re-vegetation activities. Successful re-vegetation of an area with native brush species depends on the ability to prevent or limit re-invasion by exotic grasses. Haying areas of exotic grasses for numerous consecutive years will prevent the dissemination of seeds, eventually depleting soil seed banks of viable seeds of exotic species. Areas of exotic grasses can then be mechanically or chemically prepared for the planting of native brush species, with little likelihood of re-invasion by exotic grasses through seed germination.

Seven tracts were identified as being most desirable for implementing a haying program: East Lake, El Morillo Banco, Hidalgo Bend, La Sal Del Rey, Los Ruinas, Pate Bend and Tiocano Lake. Additional tracts may be included in the haying program in the future as the program develops.

9. Fire Management

In FY 2000, Congress approved the National Fire Plan, to increase funding to all agencies fire programs. As a result of this, the Complex added 13 full time fire positions to the program. These positions included an Assistant Fire Management Officer, Fire Prevention Officer, a Dispatcher, a Wildland Urban Interface Coordinator, and 9 firefighter positions. Because of these additions, we were able to expand our fire program and establish fire stations away from Santa Ana NWR. Under agreement with the Cities of Brownsville and Palmview, we are sharing facilities with their fire stations, which will give us better coverage in those areas. We also have established a fire station in Starr County, at Falcon Dam. This is in agreement with the IBWC, and US Customs. We are using 4 homes within the IBWC compound that the Customs will transfer to us in 2003.

With the addition of the Fire Prevention Officer, we are able to aggressively start a prevention program here in the Valley, to reduce the numbers of fires and educate to public in wildfire. Also with the new WUI position, along with additional funding, we are now able to start addressing our interface problems by assessing the needs and start some fuel reduction problems we have on many tracts of land on all three refuges, and to insure that the ever increasing amount of houses that are being built on Refuge boundaries are protected from fire and vice versa. This work will be in done by contractors, under the WUI Coordinator.

Major accomplishments within the Fire Program included:

The Complex Fire Plan was finalized and approved. This plan will guide the complex Fire Management Program over the next few years in all aspects of fire including Prescribed Fire, which we hope to start in CY 2003.

One Type 6 fire engine was replaced, and one Type 4 engine was updated and the package replaced, making it a Type 3 engine. We also replaced the Type 6 engine with a better operating engine from Laguna Atascosa.

All fire personnel received training to bring our program up to current Fish and Wildlife and NWCG standards. This also included 8 fire collaterals from all 3 refuges.

Established three new fire stations.

Updated the Complex Dispatch and Aviation Plans.

Completed 38 new agreements with Valley Fire Departments, for Mutual Aid, and completing agreements with IBWC, US Customs, the Cities of Brownsville and Palmview, and the NPS- Palo Alto Unit for fire suppression responsibilities at the Palo Alto NHS in Brownsville.

The Complex had 44 fires on refuge lands for a total of 2000ac. All fires but one were human caused. One was a lightning fire at Santa Ana NWR. Of the other fires 20 were determined to be arson caused. The Complex assisted local fire departments with 25 other fires throughout the Valley. Most of these fires were direct threats to Refuge lands

The Complex Fire Program supported various requests for engines, crews and overhead in support of fires throughout the west during the course of the year.

The fire program helped all three refuges in various project throughout the valley. Two additional volunteer trailer pads were installed on Santa Ana. Two 60 ft. trailers were acquired and installed for fire and law enforcement offices; the old fire office was removed. Fire breaks were established at Santa Ana and on several LRGV Tracts, including: Hidalgo Bend, Pate Bend, LA Sal de Rey, and La Gloria Tract. This is an ongoing project and will become part of the WUI program. Fire crews represented the Service at various events throughout the Rio Grande Valley including: several local festivals, trade shows, outdoor shows and other events. The Fire Crews participated in Rio Reforestation. Fire contributed to Lower Rio Grande Valley's RPI by using GPS unit to map Refuge Tracts.

10. Pest Control

Herbicides are used to facilitate agricultural crop production (on 9,006 acres) and to facilitate the restoration of farmland to native brush habitat (on 772.0 acres of farmland that has been phased-out). Ninety-nine percent of all pesticide use on the refuge was comprised of Roundup Ultra (glyphosate) and Fusilade DX (fluazifop). The main targeted pests are introduced grasses such as

Guineagrass, Johnsongrass, Buffelgrass, Bermudagrass, Kleberg Bluestem, King Ranch Bluestem, Angleton Bluestem, and Natalgrass. The refuge's pesticide use is consistent with the objectives laid out in the refuge's CCP and all pesticides are approved annually within the Service's Pesticide Use Program.

11. Water Rights

The Service owns and manages 41 state water right accounts totaling 20,877 acre-feet of authorized water rights in the Rio Grande Basin. These water rights are currently used for irrigating agricultural crops and native plant seedlings on phased-out farmland. To remain active, each water right (by state law) must be used once every two years for beneficial use. The current designated beneficial use is "agriculture". Once all of the refuge's farmland has been phased-out, the refuge would like to use the water rights to maintain and restore refuge wetlands. This refuge goal conflicts with the current definition of beneficial use for these rights. Also, to maintain all 41 accounts as active, presents a serious managerial obstacle and the possibility of water right cancellation for 10 years of non-use. With active coordination between the Water Resources Branch of the Regional Office, the Refuge has submitted applications to amend water rights combining all 41 rights into just two accounts and to change the beneficial use to "agriculture and recreation." This change will ease management and accounting of these rights and will ensure a simple and secure accounting mechanism for future use of water for wetland management.

G. WILDLIFE

1. Wildlife Diversity

The impressive biodiversity found within the subtropical Lower Rio Grande Valley National Wildlife Refuge is owed in part to its proximity to the tropical ecosystems of Mexico and Central America. To date, the Refuge has documented 427 species of birds (485 species are known to occur in the Valley), 44 species of mammals (83 species are known to occur in the Valley), 50 species of reptiles, 21 species of amphibians, 31 species of fish, and 76 species of dragonflies and damselflies.

a. Rare or Accidental sightings

A male Eurasian Wigeon in beautiful plumage was recorded on the Rio Grande at the Los Ruinas Tract on February 7, 2001, by staff. This bird was in a flock of American Wigeon along with numerous Gadwall and other waterfowl species. A Muscovy Duck also was observed at the same time and site.

2. Endangered and/or Threatened Species

Surveys of nesting Aplomado Falcons on Lower Rio Grande Valley NWR tracts were conducted in 2001. Biologists set-up predator fencing to protect Least Tern, Snowy Plover, and Gull-billed Tern nests at the East Lake tract in Willacy County. Surveys were conducted for the endangered Zapata bladderpod on the Cuellar tract. Volunteer Tom Patterson with refuge staff made brief observations on the abundance of Mexican burrowing toads (state-threatened) along roadways in Starr County. A distributional survey of ocelots was continued by refuge staff throughout the year.

Sea Turtle Recovery. South Padre Island Nesting Activity: Two Kemp's Ridley nests were located with a total of 165 eggs. All of the eggs were recovered from South Padre Island and transported to Boca Chica and incubated in a protected corral. All the hatchlings were released on Boca Chica. The overall hatching success was 67%. One loggerhead nest was located with a total of 79 eggs. All of the eggs were recovered from South Padre Island and transported to Boca Chica and incubated in a protected corral. All the hatchlings were released on Boca Chica. The overall hatching success was 63%. None of the nesting females were seen, measured, tagged, or released.

Sea Turtle Recovery. Boca Chica Nesting Activity: One Kemp's Ridley nest was located at Boca Chica with a total of 119 eggs. The nesting female wasn't seen. The clutch subsequently hatched on August 7. The total hatch rate (hatchling emerged) was 26%. The total viable hatch rate (hatchlings released) was 78%; two full term hatchlings emerged and died. The fourteen eggs that did not hatch were found to be infertile or suffered very early embryonic mortality.

3. Waterfowl

WB Sternberg revisited the islands at La Sal Vieja to investigate the occurrence of nesting Black-bellied Whistling Ducks. Ducks were found to have nested recently at three of the islands and many were using the dense clumps of Texas prickly pear cactus as nesting cover.

Volunteers Harold Burgess, Ron Bauer, and Bob Hulett checked, prepared and maintained the 50 existing Lower Rio Grande Valley Black-bellied Whistling Duck nest boxes. The total number of nest boxes available for use (without bees or owls) was 33. Thirteen were used by BBWD for an occupancy rate of 39.4%. Of the 13 occupied nests, 8 were successful (at least one egg hatched) for a nest success rate of 61.5%. The total number of eggs laid was 263; 103 hatched for a hatching success rate of 39.2%

On September 25, BIOL Stolley and Volunteer Don Carrell completed the first weekly Salt Lake Bird Survey. These surveys were done throughout the rest of the year. Both La Sal del Rey and East Lake were surveyed for shorebirds, waterfowl, gulls, terns and associated birds. Highlights at East Lake were 823 Eared Grebes on 10/25, 20 White-faced Ibis on 9/25, 123 Greater White-fronted Geese on 10/18, and 820 Sandhill Cranes on 11/2.

Highlights at the small freshwater pond at the northern tip of East Lake Tract included 170 Blue-winged Teal on 9/25, 55 Northern Shoveler on 10/18 and 29 American White Pelicans on 11/15.

An observation of note at La Sal del Rey was 251 Greater White-fronted Geese on 10/25, 221 Sandhill Crane on 10/2.

5. Shorebirds, Gulls, Terns, and Allied Species

On September 25, BIOL Stolley and Volunteer Don Carrell completed the first weekly Salt Lake Bird Survey. These surveys were done throughout the rest of the year. Both La Sal del Rey and East Lake were surveyed for shorebirds, waterfowl, gulls, terns and associated birds. Highlights at East Lake were: 650 Long-billed Curlew on 10/11 and 800+ peeps on 10/4.

Observations of note at La Sal del Rey were 800 Long-billed Curlew on 10/11 and 800 Laughing Gulls on 12/5.

7. Other Migratory Birds

The Santa Ana Christmas Bird Count was held on December 15. Lower Rio Grande Valley Refuge tracts were accessed for that CBC and others throughout the Valley. Special permission was given to Dick Heller to access some of the river tracts; Tina Gallegos accompanied him. BIOLS Blankinship and Sternberg covered Refuge tracts for several different CBC's as well.

8. Game Mammals

Non-endangered game or fur-bearing mammals inhabiting Refuge properties include Virginia opossum, eastern cottontail, black-tailed jackrabbit, fox squirrel, beaver, nutria (an exotic species), coyote, gray fox, ringtail, raccoon, long-tailed weasel, badger, eastern spotted skunk, striped skunk, mountain lion, bobcat, feral hog (an exotic species), collared peccary, white-tailed deer and nilgai (an exotic species). No formal program currently exists for monitoring or investigating any of these species. However, monitoring efforts which are focused on endangered cats (see sections D.5. and G.2.) results in the collection of a limited amount of information on the distribution and abundance of coyote, raccoon and bobcat on Refuge properties. Limited hunting is allowed on one Refuge property for feral hog, white-tailed deer and nilgai (see section H.8.).

9. Marine Mammals

Congruent stranding patrol areas for the Sea Turtle Recovery effort and Marine Mammal Stranding Network on South Padre Island and Boca Chica Beaches links the Refuge with UT-Pan American Coastal Studies Lab. Marine Mammal Stranding totals for calendar year 2001 for the above mentioned beaches included 1 live stranded and 12 dead stranded. Eleven Atlantic Bottlenose Dolphins (1 live stranded), 1 Dwarf Sperm Whale, and 1 Striped Dolphin were reported.

14. Scientific Collections

Dr. Brian Niesley and James Hill of Randolph Macon College in Ashland, VA, collected several species of tiger beetles on the Refuge.

Dr. Robert McLean and a team from the National Wildlife Health Center mist-netted, banded and drew blood samples from birds from areas on Santa Ana and Lower Rio Grande Valley for a study of the spread of West Nile Virus. The permit also allowed the team to collect mosquitoes.

Bob Dusek of USGS, National Wildlife Health Center banded 48 passerines at Boca Chica, 125 on the Mercedes tract, 51 at Laguna Atascosa NWR, and 175 on private land.

15. Animal Control

Feral Hogs. Five permittees were selected to live-trap feral hogs on the Ranchito, Teniente (Ring-Beasley/Rudman), Willamar, and La Sal del Rey tracts of Lower Rio Grande Valley NWR in accordance with application procedures denoted in the Feral Hog Management Plan. The permittees began trapping operations on their respective tracts in March 2001 and trapped throughout the remainder of calendar year 2001 resulting in the removal of 240 hogs from the above mentioned tracts.

Nilgai Antelope. Special Use Permit 21552-01-MP and its subsequent amendment permitted USDA-APHIS Wildlife Services agents to take nilgai on Boca Chica, Loma Preserve, Caja Pinta

Banco, Palmito Hill, Tulosá Ranch, and Vista Del Mar tract of Lower Rio Grande Valley NWR in response to USDA-APHIS Veterinary Services suspicion that this ungulate species may be a potential source of tick-borne diseases. The subsequent amendment provided for the inclusion of spotlighting. Only one nilgai cow was collected between the April-September and December period of use for this permit. The nilgai was shot on the Boca Chica tract and no ticks were found during a scratch search by Veterinary Services personnel.

Beaver. USDA-APHIS Wildlife Services agent's help was recruited for the removal of nuisance beaver from the Ranchito tract. The beavers had set up a lodge adjacent to the bridge and were ponding water in this area by plugging water control structures and damming water delivery canals thereby preventing delivery of water to over one hundred acres of wetland and resaca habitat. Six beaver were taken over a one week period of spotlight gunning.

17. Disease Prevention and Control

Dr. Robert McLean and a team from the National Wildlife Health Center received a Special Use Permit to mist-net, band and draw blood samples from birds from areas on Santa Ana and Lower Rio Grande Valley for a study of the spread of West Nile Virus.

Bob Dusek of the USGS - BRD collected blood from songbirds to determine the prevalence of the West Nile Virus.

Numerous bobcats have been seen on the Refuge. Based on observations at Santa Ana Refuge, of dark gray pelage appearing similar to canine mange, and several lethargic bobcats, staff remain concerned about the possibility of bobcat serving as a disease vector for other rare felids such as ocelots.

H. Public Use

1. General

The purpose of the Lower Rio Grande Valley NWR Public Use Program is to provide for compatible wildlife dependent public uses, recreational opportunities, interpretation and education. A number of the Refuge's tracts are open to the public for recreational opportunities including bird-watching and wildlife photography. Boca Chica beach provides visitors with fishing opportunities. During the months of September through November, dove hunting is permitted on the Monte Cristo tract and big game hunting is permitted on the Teniente tract (November through December). Salineno tract is a good birding hot spot where visitors may observe Brown Jays, Red-billed Pigeons, Green Kingfishers and Zone-tailed Hawks. Last year, many people flocked to the Boca Chica beach in pursuit of Red and Black Drum, Spotted Sea Trout, Flounder, Atlantic Croaker, Snook, Whiting, Pompano and several species of sharks. Many individuals also submitted applications to participate in the dove and big game hunts while birding enthusiasts visited the Refuge's Salineno tract to observe unique bird species.

A Public Use Management Plan for Lower Rio Grande Valley NWR, written and approved in 1999, guides the management and administration of compatible public uses on the Refuge. The following tracts are currently open to public use: Salineño (0.49 acres), La Puerta (4,072 acres), Yturria Brush (1,877 acres), Monte Christo (2,702 acres), La Sal del Rey (6,911 acres), La Sal Vieja (7,393 acres) and Boca Chica (17,274 acres). The areas open to public access represent approximately 50% of the total acreage of the Refuge.

Year-round access by foot, between sunrise and sunset, for the purposes of wildlife observation, photography and environmental education/interpretation, is allowed on all seven of the tracts listed (see sections H.11., H.12. and H.16.). Fishing, as well as limited vehicular access on currently existing Refuge roads, is allowed on the Boca Chica tract (see section H.9.). Regulated hunting is allowed on the Monte Christo tract and portions of the Teniente tract (see section H.8.).

The Service continues to operate a satellite office in Roma, TX, for the purpose of providing assistance to the City of Roma with the development of the Roma Bluffs World Birding Center. The Service will eventually play a large role in the operation of the World Birding Center in Roma. The Roma Outdoor Recreation Planner for the Refuge, administers public use programming and also serves as the Service's Ambassador in Starr County. This position is kept busy throughout the year providing special presentations, tours, workshops, exhibits/demonstrations, and manning Service booths in Starr County. The Roma Interpretive Plan, consisting of the Roma Bluff Interpretive Overlook (phase I), the Roma World Birding Center Interpretive Exhibits (phase II), and the Roma Interpretive Trail (phase III), was planned and initiated. Phase I will be constructed in CY2002, and Phase II will be constructed in CY2003. Phase III will be constructed sometime in the future after connections are made between private and Refuge properties.

There are no comprehensive visitation figures to report for the Refuge, as there are no counters in operation at present.

2. Outdoor Classrooms - Students

Refuge Staff gave special outdoor presentations to 275 Roma ISD students. These presentations included such topics as: The US Fish and Wildlife Service, the National Wildlife Refuge System, the Lower Rio Grande Valley NWR, The Wildlife Corridor, the proposed Roma World Birding Center, careers in the Service, the cultural resources of the area, the plant/animal resources, and the Volunteer Program. These presentations were given at the Roma Plaza in conjunction with historical information presented by the Los Caminos Del Rio staff. A total of 1,275 students attended these outdoor classrooms.

3. Outdoor Classrooms - Teachers

Refuge Staff instructed a total of 157 area educators in Project WILD/Aquatic WILD environmental educational workshops. Most of these educators were from the Roma ISD. Twenty three of these educators went on to become Instructors for the same course. This is an excellent environmental educational training effort that teaches the teacher how to train its students in wildlife/habitat conservation, and has been received very well in Starr County.

In addition to teacher workshops, special presentations were given to a total of 573 educators in Starr County. These presentations featured information on The US Fish and Wildlife Service, The National Wildlife Refuge System, The Lower Rio Grande Valley NWR, The Wildlife Corridor, the proposed Roma World Birding Center, Careers in the Service, the cultural resources of the area, the plant/animal resources, environmental education programs offered by the Service, the YCC Program, the Volunteer Program.

4. Interpretive Foot Trails

Visitors walked the foot trails of La Puerta, Salineño, Los Negros Creek tracts, as well as the interpretive trail at Roma Plaza. Most of these visitors were birders, students, and winter Texans on tours that were led by the Roma ORP and members of the Rio Grande Wilderness Society (tract stewards).

6. Interpretive Exhibits/Demonstrations

The Wildlife Corridor exhibit was displayed at the Starr County Livestock Show, the UT Pan-Am Science Fair, the Texas Hunter Expo, and the Viva Zapata Film Festival. In addition, the Roma World Birding Center exhibit was viewed by a total of 641 students/teachers of the Roma ISD, and by 115 attendees of the Roma Bluffs World Birding Center Dedication Event. Demonstrations were presented to a total of 88 individuals, including: students serving as Rio Reforestation crew leaders, American Red Cross participants, YCC crew members, tract stewards and other volunteers.

7. Other Interpretive Programs

The Rio Reforestation X event was held at El Morrillo Banco tract on Saturday, October 13. Although the event was scheduled for 8:00 am until noon, volunteers began arriving before dawn, and group leader training was initiated as soon as there was enough light to see. A total of 1,100 volunteers planted 10,918 seedlings of native trees and shrubs on 44.6 acres of cropland, finishing by 11:30 am. The planting site is bounded on the north by the Military Road, on the south and east by the North American Butterfly Association headquarters, and is 0.7 miles east of the future Texas Parks and Wildlife Department's World Birding Center Headquarters. We learned from the registration forms that 94% of the participants learned about the event through their school or university. All other forms of publicity, such as television, radio, newspaper, scouting organizations and the refuge itself, accounted for only 6% of the volunteers.

Presentations were given to 60 educators at the Roma Satellite Office, 182 visitors to the Roma Community-Wide Career Day, 1,861 students at Roma ISD career days, 27 members of Rio Grande Wilderness Society, 68 attendees to the Los Caminos Del Rio organization, 29 Mexican Officials visiting Roma Plaza, 953 visitors to the Viva Zapata Film Festival event, and assisted with coordinating canoe trips for The Texas Tropics Nature Festival.

8. Hunting

A Hunting Plan for Lower Rio Grande Valley NWR, written and approved in 2000, guides the management and administration of hunting on Refuge properties.

In 2001, dove hunting was allowed on the Monte Christo property (2,702 acres) during the season dates set by the State of Texas for September through November (49 days total). An unlimited number of permits were available and 26 permits were sold. Steel shot was required for the dove hunt, and bag limits were those set by the State of Texas. Habitat on the Monte Christo property consists of extensive areas of agricultural land and numerous smaller areas of native brush.

In 2001, big game (white-tailed deer, nilgai and feral hog) hunting was allowed on the Teniente portion of the La Sal Vieja property (3,500+ acres), with an adult archery hunt during October 2-11 and a youth gun hunt during October 13-14. Big game hunters submitted applications, and permits were sold to individuals randomly selected in a public drawing. Thirty permits were available/sold for adult archery hunters and 15 permits were available/sold for youth gun hunters. Big game hunters were allowed to harvest 2 white-tailed deer (either sex), and unlimited feral hogs and nilgai. Habitat on the Teniente property consists of extensive areas of native brush. Poor post-season reporting by hunters precludes a summarization of harvest demographics.

9. Fishing

Recreational fishing is permitted only at the Boca Chica Tract within the Public Use Plan. Fishing occurs primarily along the periphery of this tract: on the beach, along the Rio Grande, along the Brownsville Ship Channel, and along margins of South Bay.

11. Wildlife Observation

Numerous refuge visitors were participants in annual birding and nature festivals held throughout the Lower Rio Grande Valley. Refuge staff administered booths several local nature festivals. The Rio Grande Valley Birding Festival is held each year in Harlingen, Texas. Last year, a total of 234 bird species were tallied during the festival. Field trip tours included trips to Refuge tracts where birds like Ringed and Green Kingfishers, Brown Jay, Audubon's Oriole, Hook-billed Kite and Red-billed Pigeon were observed. Canoe trips were led by the Friends of the Wildlife Corridor (a non-profit organization established to protect, support and enhance the Sant Ana and Lower Rio Grande Valley National Wildlife Refuges) along the banks of the Rio Grande beginning at the Chapeno tract and ending at the Salineno tract.

Refuge staff also assisted with the Texas Butterfly Festival which is held annually in Mission, Texas; the Texas Tropics Nature Festival also held annually in McAllen, Texas; and the Brownsville International Birding Festival. Several butterfly species observed during the butterfly festival included the Guava Skipper, Red-Bordered Pixie, Clytie Ministreak, Soldier, Silver-banded Hairstreak, Red-Rim, Malachite, Silver Emperor, Tulcis Crescent, Violet-banded Skipper, Teelus Longtail, Crimson Patch, Mexican Bluewing, Tropical Leafwing, Boisduval's Yellow, Turk's Cap White Skipper and the Band-celled Sister.

During the Texas Tropics Nature Festival, field trips were led on the La Sal Del Rey tract. Now, many species of birds including thousands of Snow Geese, Sandhill Cranes and shorebirds can be found wintering here. Other birds that were observed during the festival included the White-collard Seedeater, Muscovy Duck, Black-throated Sparrow, Scaled Quail and several species of orioles. At the International Brownsville Birding Festival, two seminars were presented by Refuge staff.

15. Off-Road Vehicling

No ORVs are permitted on the Refuge, however, there has been a persistent problem of illegal ORU use/activity identified along the duneline of the Boca Chica Tract.

17. Law Enforcement

Many Incidents and Violations reported here were obtained with the cooperation of other Federal and Local Law Enforcement Organizations. A Summary and subsequent breakdown of NOV's, Incident Reports, Warnings, and contacts for Lower Rio Grande Valley and Santa Ana NWR's for 2001 are as follows:

a. Incident Summary

NOV's	Incident Reports	Warnings	Contacts
53	36	212	306

a. Incident Summary (cont.)Illegal Entry-Person: 5*LRGV-2*

Teniente-Hog traps, one containing the carcass of a javalina.

Abrams- 5'x5' area cleaned and wooden cross, indicating possible death in the area.

Santa Ana-2

Parking lot-Four persons hiding in the brush.

Bathrooms-Nine persons hiding in the bathrooms.

Illegal Entry-Motor Vehicle: 4*LRGV-3*

Los Ebanos-Several persons on ATVs "tearing up fields.

Arroyo Morteros-Vehicle driven over downed fence.

Cottam-Persons smuggling used clothing from the U.S. into Mexico.

Santa Ana-1

Parking lot-Person on refuge after official closing time.

Burglary Stolen Property: 6*LRGV-2*

La Coma-One whistling duck box missing.

Chicharra Banco- One Trail Marker 1500 infrared game monitor stolen.

Santa Ana-4

Parking lot-Several credit cards and \$600.00 stolen from vehicle.

Parking lot-Five compact disc and radio stolen from vehicle.

Vireo Trail-Stolen transmitter.

Fire Building- Stolen GT Avalanche mountain bike.

Litter: 2*LRGV-2*

Fronton-Dumped trash.

Monte Cristo-Dumped trash.

Vandalism: 2*LRGV-1*

Monte Cristo-Several carsonites driven over.

Santa Ana-1

Visitor's Center-Coke machine tipped over.

Weapons: 4

LRGV-4

Monte Cristo-Person with .270 rifle in his possession.

Loma Preserve-Person target shooting with shotgun.

Boca Chica-Person target shooting with two revolvers, semi-auto Beretta, and an M-16/AR15.

Boca Chica-Person target shooting with shotgun.

*Animal Trespass: 4**LRGV-4*

Arroyo Morteros-Sign of horses accessing the area thru downed fence.

La Puerta-Cattle grazing.

Phillips Banco-Twelve goats in old revegetation site.

Lozano-Five head of cattle grazing inside.

*Fire Habitat: 6**LRGV-6*

Tio Cano-Fire started from lit trash dump.

El Morillo Banco-Undetermined

Hidalgo Bend-Fire started by illegal alien under the influence of narcotics.

Pharr Settling Basin-Undetermined.

Sal Del Rey-Fire possibly started by discarded match or cigarette.

Tio Cano-Fire started by burning trash off refuge.

*Property Abandoned or Impounded: 1**LRGV-1*

Arroyo Ramirez-Five abandoned bee boxes.

Monterrey Banco-Abandoned vehicle.

*Wildlife Carcasses: 2**LRGV-2*

Boca Chica-Sea turtle found with throat cut.

Teniente-Doe and fawn, late stages of decomposition.

*Person Lost: 1**Santa Ana-1*

Trail C-Six children missing for fifteen minutes.

Assistance to Other Organizations: 3

LRGV-2

Los Ebanos-Fifty year old man suffered stroke near tract.

Los Olmos-Assisted TPWD Warden with vehicle, three men with high powered rifles.

Santa Ana-1

Santa Ana-Detained DWI for local PD.

*Unsecure Installation: 1**Santa Ana-1*

Santa Ana-Activated intrusion alarm.

*Violations (NOV's)**Lower Rio Grande Valley NWR Managed Lands-53*

No Fishing License-6

Trespass By Person-22

On Refuge After Hours-2

Litter-2

Hunting-5

No Recreational Permit-2

Firearms-4

Tampering With Government Property-1

Violations of State Law-5

Motor Vehicle-4

b. Refuge-wide Drug Incident (predominantly from INS-Border Patrol reports)

There were over 400 reported drug incidents on Lower Rio Grande and Santa Ana during 2001, 184,286 lbs of Marijuana with an estimated value of \$147 million.

I. EQUIPMENT AND FACILITIES

1. New Construction

Three new parking lots, split rail fences, and kiosks were constructed by the Maintenance Crew at the Teneinte tract along CR10, CR20, and CR30. The 70'x100' parking lots were underlaid with geotextile fabric. Six inches (6") of caliche was laid on top, rolled , graded ,and shot with laser level to insure proper rain runoff. Upon completion of parking lots, two were enclosed with split-rail cedar fence and one with post and rail. As a final touch, new kiosks were built and installed, and the tracts were open to the public.

2. Rehabilitation

The boundary road at the Los Olmos tract east of Rio Grande City on FM 755 was rehabilitated and boom-axed to allow for vehicle passage to do biological surveys.

The water control structure at the La Gloria Tract along Military Highway would not hold water back and repairs were initiated. The existing water control structure was excavated and the damaged 24" ABS pipe was partially removed. The damaged pipe was cut out and the existing structure was reinstalled. Pipe and structure were cemented and back-filled.

4. Equipment Utilization and Replacement

The Refuge Complex (Lower Rio Grande and Santa Ana Refuges) received several much needed pieces of equipment; a John Deere 5510 tractor, CAT 140H road grader, a shop utility truck, a GMC 6500 with a 3 ton telescoping boom crane, several light 4 wheel drive pick-up trucks, a Kawasaki Mule, and a new John Deere riding mower. Two Ford Rangers & a Dodge Ram pick-up truck were sold through GSA.

5. Communications Systems

The Lower Rio Grande Valley shop truck and 4 wheel drive pick-up truck had two new 2-way radios installed. The LE vehicles and Fire vehicles also had radios installed, the radio tower at Santa Ana was upgraded and the repeater towers along Lower Rio Grande Valley tracts were upgraded.

7. Energy Conservation

The Refuge continued to use local businesses to recycle scrap metal and used tires that have been dumped along many of the Refuge tracts. Staff members, YCC & Volunteers stage these materials at key locations and the Maintenance Crew loads them on a dump truck and/or grain truck and transfers them to proper facilities. Used tires were collected and picked up and transferred to the El Morrillo Banco tract where a tire recycle contractor would collect and dispose of the tires off-site.

J. OTHER ITEMS

2. Other Economic Uses [Oil and Gas]

Oil and gas exploration and production activities on refuge tracts by reserved/excepted mineral rights owners continued during 2001. The major contacts with oil and gas operators include: one 3D seismic survey, one pipeline survey and test, and one permit for commencement of an exploratory drilling operation. Additionally, one proposed drilling operation was reviewed and the operator decided to relocate off Refuge onto an adjacent landowner.

Dewbre Petroleum Corporation consulted with Refuge staff and provided a plan of operations for their proposed exploratory drilling on the La Coma tract. The Refuge recommended rescheduling the proposed activity around the migratory bird nesting season or at the minimum conducting a nesting survey prior to commencement. Dewbre opted to relocate their operation off Refuge and onto an adjacent landowner.

Western Geophysical consulted with Refuge staff and provided a plan of operations for a proposed 3D seismic survey on the La Sal del Rey tract. The seismic company revised their operations to minimize impacts and were provided a Special Use Permit/Access Agreement to conduct their activities.

Swift Energy Company consulted with Refuge staff about their intent to purchase a pipeline that traversed the Teniente tract, and their need to perform preliminary structural tests. The company was provided a special use permit and amendments to that permit to allow multiple line tests. Additionally, a permit was provided that allowed a survey crew to verify the location and route the pipeline ran through the Refuge. When an expired easement was discovered, the company opted to revise their plan and moved a portion of the line off Refuge onto the adjacent landowner.

Teal Energy consulted with Refuge staff and provided a plan of operations for an exploratory drilling operation on the Zamora Bend tract. The operator revised their operations to minimize impacts and were provided a Special Use Permit/Access Agreement to construct a drill pad at a compromise location on the tract.

4. Credits

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