CLARK COUNTY, NEVADA

DESERT CONSERVATION PROGRAM

2001 – 2003 BIENNIUM REPORT

January 2004

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EXECUTIVE SUMMARY

As required in Section 2.12.2.7 of the Clark County Multiple Species Habitat Conservation Plan (MSHCP), this document represents a composite final biennium progress report for the period 2001 - 2003. The biennium began on July 1, 2001 and ended on June 30, 2003. It therefore addresses work completed by agencies and contractors; and accounts for land disturbance activities, revenues generated, expenses incurred, and desert tortoise activities conducted during the subject time period.

During the 2001 – 2003 biennium, three basic categories of work were funded, including MSHCP development and implementation projects and desert tortoise protection projects. Federal, state, and local agencies, along with nonprofit organizations and private contractors, received Section 10, Section 7 and Public Lands Management Act (PLMA) funding for conservation projects aimed at addressing priorities outlined in the MSHCP.

Section 10 Projects and Expenditures

During the 2001 – 2003 biennium, a total of 14 agencies and contractors were awarded Section 10 funds for discrete projects. Under the direction of the agencies and contractors enlisted, a total of 29 projects were funded, 22 projects were completed, six (6) projects have been extended, and one (1) project was neither initiated nor completed.

Clark County's Adjusted Required Expenditures for the 2001 – 2003 biennium was $4,265,400. After subtracting two non-credit expenditures, Clark County receives credit for spending $5,250,391 in Section 10 funds administering and implementing the DCP.

Section 7 Projects and Expenditures

For the subject biennium, a total of four (4) agencies and contractors were awarded Section 7 funds for discrete projects totaling $1,012,100. Under the direction of the agencies and contractors enlisted, a total of seven (7) projects were funded and all seven (7) projects were completed. Clark County expended $1,312,030 in Section 7 funds. Of that total, $1,262,226 was spent on professional services contracts for the protection of desert tortoise as directed by the USFWS, $39,465 was spent on refunds, and $10,338 was spent on investment expenses.

PLMA Projects and Expenditures

A total of six (6) agencies and contractors were awarded PLMA funds for discrete projects totaling $4,648,334. Under the direction of the agencies and contractors enlisted, a total of 22 projects were funded, 12 were completed, six (6) research projects are ongoing in the 2003 – 2005 biennium, two (2) projects have been extended, one project was combined with another and one (1) project was neither initiated nor completed. Clark County expended $2,663,846 on PLMA projects. Of that total, all of the funds were spent on professional services contracts for projects that contribute to the development of the MSHCP.

Land Disturbance and Revenues Generated

In cooperation with the cities of Henderson, North Las Vegas, Boulder City, Mesquite and the Nevada Department of Transportation, Clark County tracks land disturbance through permitting processes within each entity's jurisdiction. In summary, 18,829 acres were disturbed from February 1, 2001 (the effective date of the MSHCP) through June 30, 2003.

In summary, during the 2001 – 2003 biennium, Clark County generated $13,130,627 from the collection of mitigation fees and accrued interest on Section 10 funds. Clark County collected $3,363,101.75 in mitigation fees for Section 7 funds and Clark County was awarded $4,648,334 in PLMA funds.

The Clark County Desert Conservation Program respectfully submits this report to the Board of County Commissioners and the United States Fish and Wildlife Service as required in Section 2.12.1 of the MSHCP and reaffirms its commitment as a steward of the plan and the DCP.

SECTION 10 PROJECTS

The following section contains key information for each Section 10 project conducted during the 2001 - 2003 biennium. For the subject biennium, a total of 14 agencies and contractors were awarded Section 10 funds for discrete projects totaling $5,244,476. Under the direction of the agencies and contractors enlisted, a total of 29 projects were funded, 22 projects were completed, six (6) projects have been extended, and one (1) project was neither initiated nor completed.

The Public Information and Education Subcommittee of the IMC was awarded $278,300 in Section 10 funds. This group initiated and completed ten (10) projects totaling $296,575.

The Clark County Desert Tortoise Fencing Program was awarded $800,000 in Section 10 funds to complete priority fencing projects. In addition, there was $300,000 available for desert tortoise fencing from the 1999 – 2001 biennium. The Fencing Working Group oversaw the completion of approximately 12 miles of desert tortoise fencing, totaling $125,911. In addition, Partners in Conservation completed 6 miles of desert tortoise fencing. Clark County also entered into an interlocal agreement with the Nevada Department of Transportation to complete an additional 16 miles of fencing along State Route 165 during the 2003 – 2005 biennium.

Nearly three (3) miles of riparian habitat along the Muddy River was also acquired during the subject biennium.

Federal agencies awarded funds include:

- U. S. Bureau of Land Management (BLM)
- U. S. National Park Service (NPS)
- U. S. Department of Agriculture, Wildlife Services (USDA-WS)
- U. S. Department of Agriculture, Forest Service (USDA - FS)
- U. S. Fish and Wildlife Service (USFWS)

State agencies awarded funds include:

- Nevada Division of Forestry (NDF)

Local agencies awarded funds include:

- Clark County Desert Conservation Program (DCP)
- Public Information and Education Subcommittee (PIE)
- Clark County Desert Tortoise Fencing Program
- Southern Nevada Water Authority (SNWA)

Others:

- Michael Creathbaum, Boulder City Conservation Easement Law Enforcement
- Las Vegas Springs Preserve (LVSP)
- Muddy River Regional Environmental Impact Alleviation Committee (MRREIAC)
- Partners in Conservation (PIC)
- Southern Nevada Environmental, Inc. (SNEI)
- The Conservation Fund (TCF)
- The Nature Conservancy (TNC)

SECTION 10 PROJECTS PER CONTRACTOR

Bureau of Land Management

Project	Section 10 Funding Awarded	Project Status
Law Enforcement	$640,000	Completed
Bearpoppy Habitat Protection	$100,000	Completed
Protection and Restoration of Mesquite Woodlands	$50,000	Completed
Springs/Riparian Protection	$50,000	Partially completed; Extended through June 2004
Total Awarded	**$840,000**	**Actual: $765,000**

National Park Service

Project	Section 10 Funding Awarded	Project Status
Law Enforcement	$260,000	Completed
Riparian Restoration	$282,500	Completed
Tall Whitetop Control	$9,250	Completed
Total Awarded	**$551,750**	**Actual: $551,747**

United States Department of Agriculture - Wildlife Services

Project	Section 10 Funding Awarded	Project Status
Animal Damage Control	$67,500	Completed
Total Awarded	**$67,500**	**Actual: $67,500**

United States Department of Agriculture, Forest Service

Project	Section 10 Funding Awarded	Project Status
Law Enforcement	$296,440	Completed
Habitat Protection, Restoration & Road Barriers	$5,000	Completed
Spring Habitat Restoration	$75,000	Completed
Cold and Willow Creeks/Motorized Vehicle Route Designation	$85,000	Completed
Total Awarded	**$461,440**	**Actual: $429,565**

SECTION 10 PROJECTS PER CONTRACTOR

United States Fish and Wildlife Service

Project	Section 10 Funding Awarded	Project Status
Law Enforcement	$275,000	Not initiated; not completed
Total Awarded	**$275,000**	**Actual: $0**

Nevada Division of Forestry

Project	Section 10 Funding Awarded	Project Status
Native Flora Propagation & Protection	$129,464	Partially completed; Extended through September 2, 2004
Total Awarded	**$129,464**	**Actual: $0**

Clark County Desert Conservation Program

Project	Section 10 Funding Awarded	Project Status
Administration	$1,919,965	Completed
Total Awarded	**$1,919,965**	**Actual: $1,919,965**

Public Information and Education Committee

Project	Section 10 Funding Awarded	Project Status
Public Information and Education Program	$278,300	Completed
Total Awarded	**$278,300**	**Actual: $296,575**

Clark County Desert Tortoise Fencing Program

Project	Section 10 Funding Awarded	Project Status
Fencing Program	$1,100,00	Completed
Total Awarded	**$1,100,000**	**Actual: $125,911**

Southern Nevada Water Authority

Project	Section 10 Funding Awarded	Project Status
Tall Whitetop Control in the Las Vegas Wash	$24,000	Completed
Total Awarded	**$24,000**	**Actual: $24,000**

Michael Creathbaum

Project	Section 10 Funding Awarded	Project Status
Boulder City Conservation Easement Law Enforcement	$141,800	Completed
Total Awarded	**$141,800**	**Actual: $141,800**

SECTION 10 PROJECTS PER CONTRACTOR

Las Vegas Springs Preserve

Project	Section 10 Funding Awarded	Project Status
Las Vegas Bearpoppy Research	$10,000	Partially completed; Extended through June 2004
Las Vegas Buckwheat Salvage Study	$10,000	Partially completed; Extended through June 2004
Soil Studies	$10,000	Partially completed; Extended through June 2004
Germination Trials	$20,000	Partially completed; extended through June 2004
Total Awarded	**$50,000**	**Actual: $50,000**

Muddy River Regional Environmental Impact Alleviation Committee

Project	Section 10 Funding Awarded	Project Status
Muddy River Restoration	$195,778	Completed
Total Awarded	**$195,778**	**Actual: $195,768**

Partners in Conservation

Project	Section 10 Funding Awarded	Project Status
GPS Rural Roads and Whitney Pockets	$225,000	Completed
Public Outreach for the DCP and Tortoise Protection Projects	$90,000	Completed
Total Awarded	**$306,000**	**Actual: $216,331**

Southern Nevada Environmental, Inc.

Project	Section 10 Funding Awarded	Project Status
Desert Tortoise Transfer and Holding Facility	$412,019	Completed
Desert Tortoise Translocation	$80,000	Completed
Total Awarded	**$492,019**	**Actual: $439,611**

The Conservation Fund

Project	Section 10 Funding Awarded	Project Status
Acquisition of Grazing Permits in Clark County	$122,300	Completed
Total Awarded	**$122,300**	**Actual: $80,338**

SECTION 10 PROJECTS PER CONTRACTOR

The Nature Conservancy

Project	Section 10 Funding Awarded	Project Status
Riparian Land Acquisition	$209,125	Completed
Total Awarded	**$209,125**	**Actual: $159,836**

BUREAU OF LAND MANAGEMENT

Featured Project
Law Enforcement

Project Description
The project supported four full-time BLM law enforcement rangers to patrol four Desert Tortoise Areas of Critical Environmental Concern (ACEC) and other high-value habitats consistent with MSHCP goals.

Project Status
For the majority of the biennium, four full-time law enforcement rangers were maintained on staff. For one year, one of the positions was unfilled and the area was partially covered (at least one day per week) by the existing non-MSHCP ranger staff. A summary of all law enforcement reports indicated that over 2,500 public contacts were made, 30 citations were issued, scores of abandoned cars and dumpsites were identified and removed, and signs were replaced as needed. The low number of citations was due to the majority of areas not having roads and trails designated.

Burned Mesquite Near Moapa

Partners
Partners in Conservation (PIC) and the rural communities.

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$640,000

Funding Spent
$590,000 ($50,000 not invoiced to Clark County for the gap in ranger coverage).

Dumping Near Coyote Springs ACEC

Completion Date or Status
Completed

Documents/ Products
GIS coverage of patrol areas

BUREAU OF LAND MANAGEMENT

Featured Project
Bearpoppy Habitat Protection

Las Vegas Bearpoppy

Project Description
BLM installed fences, barriers, and signs in designated bearpoppy habitat within the Rainbow Gardens Area of Critical Environmental Concern (ACEC). BLM also cleaned up a number of dump sites.

Project Status
The post and cable gap fence on the southern end of Rainbow Gardens Road was repaired from severe vandalism; extra cable and posts were added to keep traffic out of the restoration area. Three acres of bearpoppy habitat (adjacent to PabCo Road) was fenced and restoration signs were also posted. Over a half-mile of new post and cable fence along Rainbow Gardens Road is being constructed in September 2003. Eighty signs were replaced or posted in the ACEC by the designated ranger. Twelve cleanup projects were completed for Sunrise Management Area.

Partners
Citizens' groups
Eagle Scouts

Post and cable fence

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$100,000

Funding Spent
$100,000

Completion Date or Status
All projects are complete except the post and cable fence. BLM requested and received a no-cost extension to accommodate the construction of the fence. Construction of the post and cable fence began at the end of September 2003 and will be completed by the end of October.

Documents/Products
GIS coverage of dumpsites, fencing sites

BUREAU OF LAND MANAGEMENT

Featured Project
Protection and Restoration – Mesquite Woodlands

Phainopepla

Project Description
Using the Mesquite Woodlands Habitat Management Plan as a guide, BLM identified and implemented projects that would enhance and protect important mesquite habitat in southern Nevada. Projects included informational signing to deter woodcutting activities, active restoration, protective fencing, identification of dumping sites for cleanup, and ground water monitoring.

Project Status
Ten acres of mesquite woodlands were fenced; 62 planted mesquite trees were maintained at four sites; four dump sites were cleaned up and another eight identified for future cleanups; 30 signs were installed to educate the public and deter wood cutting and resource damage; and 51 acres of mesquite woodlands were assessed for status and future needs.

Partners
Partners in Conservation

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$50,000

Funding Spent
$50,000

Completion Date or Status
Completed

Documents/Products
GIS coverages of dump sites, watering sites, fencing sites, sign locations

BUREAU OF LAND MANAGEMENT

Featured Project
Spring Protection

Project Description
The project was amended from fencing 10 springs to fencing two larger springs – Grassy Spring and Red Spring. Both are located in the Red Rock Canyon National Conservation Area. Grassy Spring provides a water source for many bird and upland animal species. Red Spring has habitat for an endemic spring snail and provides an open water source for numerous bat species. Red Spring's wet meadow has the largest population of alkali mariposa lily in Clark County and woodland components are habitat for birds, such as the Phainopepla.

Alkali Mariposa Lily (*Calochortus striatus*)

Project Status
Grassy Spring was completed in winter of 2002. The Red Spring fence will be a wood post and rail design; the project had to be delayed until spring of 2004 in order to finish the environmental documentation and contract development. The BLM requested and was granted a no-cost extension to accommodate the construction.

Spring Fencing

Partners
NDOW

Project Contact
Patrick Putnam, BLM Las Vegas Field Office

Funding Awarded
$50,000

Funding Spent
$25,000

Completion Date or Status
Grassy Spring project is completed
Red Spring project will be completed by 6/04

Documents/Products
None

NATIONAL PARK SERVICE

Featured Project
Law Enforcement

Project Description
The NPS performed law enforcement patrols throughout Desert Wildlife Management Area (DWMA) lands and other lands classified as intensively managed area (IMA) lands in Nevada and within Lake Mead NRA jurisdiction in order to conserve habitat and protect animals from damage caused by illegal activities. National Park Service law enforcement rangers patrolled backcountry and undeveloped areas to educate the public, detect illegal activities, and investigate crimes on public lands. In addition, rangers performed duties to prevent and deter future damage, including placing signs, constructing barriers, and blocking undesignated roads.

Off Highway Vehicle Tracks

Project Status
Law enforcement park rangers conducted resource protection patrols by vehicle, motorcycle, boat, and foot throughout backcountry areas in Nevada on Lake Mead NRA. One permanent, full-time law enforcement ranger and two temporary rangers completed approximately 465 days of patrol on Lake Mead NRA lands within the IMA during the biennium. Rangers routinely provided public education through both handout material and informal talks. Rangers issued verbal warnings and citations for crimes relating to the protection of wildlife and resources. Subjects causing resource damage through criminal acts were prosecuted and assessed civil penalties for rehabilitation of damaged areas. Continued high levels of public use, the relative remoteness of sensitive lands and habitat, and large areas of responsibility for patrol rangers continue to challenge enforcement efforts.

Dumped Vehicle

Partners
BLM
NDOW

Project Contact
Kevin Hendricks, National Park Service, Lake Mead National Recreation Area

Funding Awarded
$260,000

Funding Spent
$260,000

Completion Date or Status
Completed; Ongoing in the 2003-2005 biennium.

NATIONAL PARK SERVICE

Featured Project
Riparian Restoration

Summary Project Description
National Park Service Exotic Plant Management Team conducted numerous exotic plant control projects in springs and riparian areas throughout Clark County. The removal of tamarisk and other invasive weed plants helps to preserve and maintain these valuable habitats. Active revegetation occurred at some sites to ensure desirable plant recovery for species benefits. Most of this project involved "on the ground" restoration activities. A database was established to document all project work according to North American Weed Management Association standards. The team conducted work across four federal agency lands and county entity boundaries.

Project Status

The riparian restoration team completed 64 projects totaling 1,400 acres and planted 650 trees. The team eradicated tamarisk from 30 springs. The team continues an excellent safety record by achieving a "no loss of work days" due to on-the-job injuries. In addition to tamarisk the team broadened its scope on weeds by initiating control of tall whitetop, camelthorn, fountain grass, palm trees, arundo, and Russian knapweed. The team continues to be a model throughout the United States in coordinating weed control across agency boundaries with multiple partners. Although more was accomplished than what was proposed, there is still more work to be done. Many of the tamarisk control projects completed will need to continue to be maintained and more acres of tall whitetop, camelthorn, and fountain grass are targeted for treatment in the next biennium.

Partners
Weeds Working Group
PIC
Southern Nevada Inter-agency Restoration Team
NPS, Lake Mead Exotic Plant Management Team
Lake Mead National Recreation Area
BLM and Red Rock National Conservation Area
USFWS, Desert NWR, Moapa NWR and Ash Meadows NWR
USDA-FS, Spring Mountains National Recreation Area
Nevada State Parks, Valley of Fire State Park

Clark County School District
SNWA
Las Vegas Wash Coordinating Committee
University of Nevada Cooperative Extension
Natural Resource Conservation Service
United States Geological Survey
Nevada Department of Agriculture
U.S. Bureau of Reclamation
Nevada Weed Management Association
Clark County Metropolitan Police Department

Project Contact
Curt Deuser, Supervisory Restoration Biologist, National Park Service, Lake Mead Exotic Plant Management Team, 702-293-8979, curt_deuser@nps.gov

Funding Awarded
$282,500

Funding Spent
$282,500

Completion Date/Status
Completed. Project is ongoing in the 2003 – 2005 biennium.

Documents/ Products Produced:
Southern Nevada Weed Management Efforts Presentation at the Nevada Weed Management Association Annual Meeting, October 15-17, 2002.
Tech Line, Information about Invasive/Exotic Plant Management, Summer 2003, pages 6,7 and 11.
Alien Plant Control and Monitoring Data Base (APCAM).

U. S. DEPARTMENT OF AGRICULTURE - WILDLIFE SERVICES

Featured Project
Animal Damage Control

Project Description
When USDA-WS detects feral cat activity within Palmer's chipmunk habitat, direct control activities are initiated. USDA-WS continually monitors sites in Clark County where ravens are subsidized by human enhancements such as landfills and dairies. In areas where ravens are found to be concentrated and excessive, raven reduction actions are initiated. USDA-WS was asked by the IMC to assess black-headed cow bird (BHCO) movement between subsidized feeding areas and riparian areas. USDA-WS proposed that a feasibility study be conducted on the presence of feral pigs, a recognized problematic invasive species in the Virgin River Basin (VRB). The results of this study will provide the IMC and the USFWS with enough information on the presence and status of the feral pig in the VRB to allow for an informed decision-making process.

Project Status
Twenty-four feral cats have been captured and removed from the Mt. Charleston area. Two feral cats tested were found positive for pneumonic plague and positive plague titers were found in 13 biological samples collected from two non-target species. USDA-WS maintains close contacts with many entities, both public and private, due to the dynamic nature of the feral cat removal project. To date, 14 raven control projects have been conducted. Following each control project, USDA-WS observed a reduction in raven numbers at subsidized feeding areas adjacent to desert tortoise management sites. USDA-WS collected West Nile Virus samples from 87 ravens for disease monitoring. USDA-WS' effort to assess BHCO movement between subsidized feeding areas and riparian areas found sufficient evidence to show that the winter-month-subsidized population of BHCO are utilizing riparian areas in the spring months. Following the 2001 breeding season, the IMC asked USDA-WS to discontinue any further BHCO work due to a paradigm shift in BHCO management. USDA-WS found the presence of a breeding population of feral pigs in the VRB, found evidence that feral pigs are causing habitat destruction and degradation to public and private property,

identified VRB feral pigs as a carrier of pseudo rabies and a potential disease transmission threat for trichinosis, clarified the legal status of the animal for control purposes, and defined land status within the VRB. USDA-WS found that neighboring states legally consider the feral pig an invasive and unwanted threat to human health and safety and the native environment. USDA-WS completed and submitted a draft feasibility study to the IMC in August 2003.

Partners
The Nevada ADC Program (NADCP) is a cooperative program primarily consisting of the federal agency, USDA Animal and Plant Health Inspection Service's Wildlife Services (WS), and the state agency - Nevada Department of Agriculture, Division of Resource Protection, Predatory Animal and Rodent Committee (PARC).

Project Contact
Robert Beach, Nevada State Director: USDA-Wildlife Services-NADCP

Funding Awarded	**Funding Spent**
$67,500	$67,500

Completion Date or Status
Completed; Feral cat monitoring, raven control projects, and feral pig monitoring are continuing in the 2003 – 2005 biennium

Documents Produced
Draft: Feral pig feasibility study, 2003.
Eight (8) Quarterly reports, two (2) Fiscal Year reports, and one (1) 2001- 2003 Biennium Report

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

Featured Project
Law Enforcement

Project Description
This biennium funded two permanent staff positions and several other employees intermittently. The westside Law Enforcement Officer emphasized personal contact with people encouraging responsible behavior while enjoying the recreation area.

Project Status
For the two years of this contract the LEO covered the west side of the Spring Mountains NRA, making 10,758 public contacts and driving over 67,000 miles accomplishing MSHCP goals and objectives.

The law enforcement officer issued 256 warnings for resource-based violations and 84 violation notices for non-compliance of rules and regulations. The warnings and violations consisted of illegal fuel wood cutting, driving off-road, damaging natural resources, cutting or damaging trees, illegal campfires, litter, dumping of household waste, blocking or restricting a roadway, driving in a careless/reckless manner, driving without a license, and underage drinking. Approximately 90 percent of the violations are resource-based, and the ten percent of non-resource-based problems still impact natural resources. The majority of the non-resource-based violations came from investigating resource-based violations.

Illegal Tree Cutting at Lovell-Trout Summit

Oil runoff from illegal dumping along desert tortoise fencing

The Forest and Wilderness Technicians serve as “eyes and ears” while on the ground. The priority for these staff members is time on the ground, talking with people using the Spring Mountains NRA, and providing resource and recreation information. They can write citations, as can other staff members, but the priority is contact, education, and information toward conservation.

Partners
Law Enforcement Working Group
BLM
NPS
USFWS

Project Contact
Jon Knudson, Law Enforcement Officer, (775) 751-2431

Sharing information via public contacts at Willow Creek, discussing spring snails and effects from driving through the water

Funding Awarded
$296,440

Funding Spent
$298,315

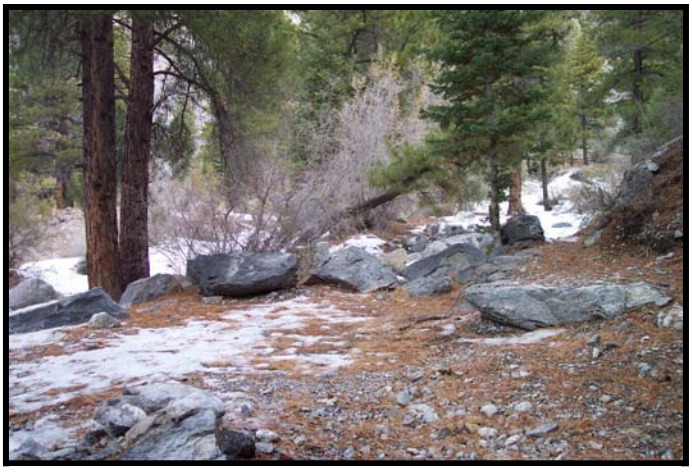
Completion Date or Status
Completed

Documents Produced
Eight (8) quarterly reports and one (1) final report

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

Featured Project
Habitat Protection, Restoration and Road Barriers

Project Description
To support Clark County's MSHCP EIS Conservation Action Item USFS (112) which prescribes removal of roads causing environmental damage, this project installed barriers in places used as roads, but not assigned or designated as roads. The vehicle traffic was damaging natural resources.



Natural Rock Barriers

Project Status
As another method of directing visitors, the road barrier project was initiated. Areas that were not roads and were being traveled by motorized vehicles were blocked by natural-looking materials, such as large rocks, to discourage damaging use. This method allows equestrians and hikers to enter wilderness areas, but not motorized vehicles. The barriers were placed in areas where there was damage to fragile spring ecosystems or in areas where there was encroachment on wilderness areas. Springs which benefited from these road barriers include: Trough, Buck, CC, Harris, and Mud Springs. Wilderness boundary barriers were installed at Wallace, Carpenter, and Macks Canyon.

Partners
None

Project Contact
Heather Hundt, Wildlife Biologist, (702) 515-5421

Funding Awarded
$5,000

Funding Spent
$3,175

Completion Date or Status
Completed

Documents/Products Produced
Barriers constructed at five (5) springs and three (3) wilderness boundary areas.

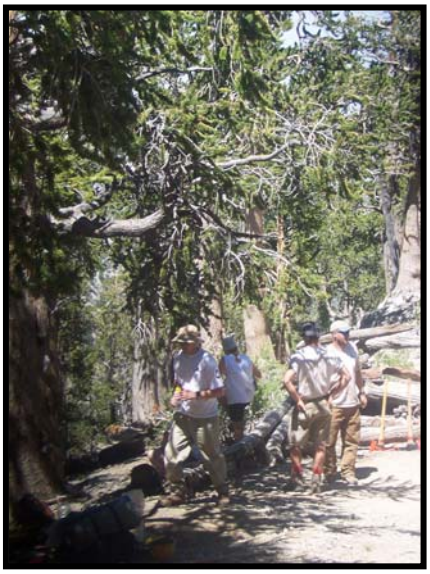
U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

Featured Project
Spring Habitat Restoration

Project Description
This project supported water resource management by providing inventory and rehabilitation of natural water sources, springs, and seeps. The work included visiting spring and seep sites, analyzing damage, and considering both hydrological and environmental rehabilitation activities to improve the areas. Springs and seeps are naturally important to the area to support flora and fauna and have become even more important due to drought conditions.

Buck Spring Exclosure

Project Status
Over the last two years, the staff evaluated 13 springs for possible restoration, including Peak, Lost Cabin, Timber, Gold, Ninety-nine, Mexican, Cougar, Younts, Kiup, Mike, Buck, Fence, and Mummy Springs. As part of these evaluations, water rights and hydrology were investigated, as well as surveys taken for sensitive species and noxious weeds. Site-specific plans were written for six springs: Younts, Lost Cabin, Mexican, Gold, Big Timber, and Mummy Springs. Exclosures were constructed at Mike, Buck, and Fence Spring to minimize disturbance. Noxious weeds were treated at Younts, Lost Cabin, and Kiup Springs.



Nevada Conservation Corps crew begins work on removing damaging spur trails near Mummy Springs

Partners
Nevada Conservation Corps

Project Contact
Heather Hundt, Wildlife Biologist, (702) 515-5421

Funding Awarded
$75,000

Funding Spent
$75,000

Completion Date or Status
Completed

Documents/Products Produced
Six site plans for the following springs: Younts, Lost Cabin, Mexican, Gold, Big Timber, and Mummy Springs

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

Featured Project
Designating Motorized Vehicle Routes; Amended from Habitat Protection-Cold & Willow Creeks

Project Description
The project, called Habitat Protection Cold and Willow Creeks, funded at $85,000, initially focused on planning and construction of riparian protection structures for the Cold Creek and Willow Creek areas. After some of this work had been accomplished, it was clear that a priority of designating off-road vehicle routes and trails was critical to ecosystem management. Therefore, the scope of work was amended extending this effort beyond the Cold Creek and Willow Creek areas, to off-road vehicle use across the entire Spring Mountains National Recreation Area. The intent of this amended project was to stop proliferation of unofficial trails.

Spring Mountains National Recreation Area

Project Status
The Willow Creek Project was completed by closing the water source from vehicles and camping. The vegetation throughout the area is recovering. Monitoring will be conducted over the next several years to identify benefits and detriments of the project.

The motorized trails designation project completed mapping and GPSing of all existing motorized trails, a proposed action and environmental assessment was completed, and a record of decision is pending. The off-road vehicles designation project is at decision status, which is expected in December. The decision will be made, plans implemented, and future monitoring can determine results, both pro and con, of the project.

Partners
This project was worked through extensive communication with off-road vehicle groups, people residing in and around the Spring Mountains NRA, equestrian groups, and many other public participants. The project was also closely discussed with BLM partners as adjacent properties are managed.

Project Contact
Connie Moen, Recreation Planner, (702) 839-5562

Funding Awarded
$85,000

Funding Spent
$53,125

Completion Date or Status
Completed

Documents/Products Produced
GIS data of official and unofficial motorized trails and an environmental assessment

U. S. FISH AND WILDLIFE SERVICE - REFUGES

Featured Project
Law Enforcement

Project Description
Provide two full-time, limited-term U.S. Fish and Wildlife Service Law Enforcement Rangers to patrol high-value habitats on the Desert National Wildlife Range and the Moapa Valley National Wildlife Refuge consistent with MSHCP goals.

Project Status
This project was not initiated by the USFWS-Refuges Division and therefore not completed.

Partners
None

Project Contact
Dick Birger, USFWS – Refuges

Funding Awarded
$275,000

Funding Spent
$0

Completion Date or Status
Not initiated and not completed

Documents/Products Produced
None

NEVADA DIVISION OF FORESTRY

Featured Project
Native Flora Propagation and Protection

Project Description
NDF will provide services pertaining to the protection and propagation of selected species of the native flora in Clark County. This project mostly consists of NDF hiring a Forester II to complete a variety of tasks in support of the Rare Plant Conservation Plan and the issuance of master permits for state-listed endangered species in Clark County.

Project Status
This project was funded for the 2001 – 2003 biennium; however, delays in contracting between Clark County and the Nevada Division of Forestry and delays in hiring the position has resulted in this project being extended to September 2, 2004, Funding has been provided to continue the position during the 2003 – 2005 biennium.

The Nevada Division of Forestry advertised a position of Forester II and filled that position in June 2003. The Forester II began compiling information for the creation of the Rare Plant Conservation Management Strategy in partnership with The Nature Conservancy. In addition, the Forester II began identifying and compiling documentation on the state-listed critically endangered flora that occur in Clark County in addition to the master permits that have been issued for these species in Clark County. Progress has stopped since the incumbent tendered his resignation in October 2003.

Partners
The Nature Conservancy

Project Contact
John Jones, Southern Regional Forester

Funding Awarded
$129,464

Funding Spent
$0

Completion Date or Status
September 2, 2004; and continuing through June 30, 2005 with funding provided in the 2003 – 2005 Biennium.

Documents/Products Produced
None to date

CLARK COUNTY DESERT CONSERVATION PROGRAM ADMINISTRATION

Featured Project
Administration of the Clark County Desert Conservation Program

Project Description
Clark County provides five (5) full time staff positions to administer and support the Desert Conservation Program. Staff includes a Program Administrator, Senior Management Analyst, Management Analyst II, Administrative Secretary, and an Office Specialist. Major staff responsibilities include managing a biennial project proposal review and recommendation process, preparing a programmatic biennial budget for Section 10, Section 7, and PLMA expenditures, performing contract administration during the implementation of recommended projects, collecting and managing Section 10 and Section 7 development and mitigation fees, facilitating numerous working groups, and hosting meetings of the IMC.

Project Status
During the subject biennium, the following major programmatic items were accomplished:

- Hosted IMC meetings, prepared meeting agendas and meeting minutes
- Completed the 2003 – 2005 biennial budget
- Initiated strategic plans for the Weeds and Public Information and Education Working Groups
- Implemented more robust and strict invoice review and approval procedures
- Clarified and expanded project reporting requirements to improve accountability
- Facilitated the development of an Adaptive Management Science Team

Project Contact
Lewis Wallenmeyer, Clark County Desert Conservation Program, (702) 455-3859

Funding Awarded
$1,191,965

Funding Spent
$1,191,965

Completion Date or Status
Ongoing

Documents/Products Produced
Quarterly financial reports
2001 – 2003 Biennium Report

PUBLIC INFORMATION AND EDUCATION

Featured Project
Public Information and Education Program

Project Description
The Clark County Desert Conservation Program Public Information and Education subcommittee met monthly to discuss and evaluate relevant programs.

Project Status
The following projects were continued or implemented in the 2001 – 2003 biennium through the Public Information and Education Program:

- Mojave Max Emergence Contest
- Mojave Max Education Program
- Hotline and toll-free numbers
- Mojave Max Says television advertisements
- Radio announcements
- Mojave Max Mascot appearances at local outreach events
- Participation with partners at Clark County Fair in Logandale
- Printing and distribution of previously developed products and materials such as: Desert News, Mojave Max stickers, rulers, bottle buddies, and zipper pulls
- Editing and finalization of Species Account Manual

Partners
BLM
Clark County School District
Conservation District of Southern Nevada
Desert Managers' Group
MRREIAC
NDOW
Nevada Division of Agriculture
NDF
Outside Las Vegas Foundation
Partners in Conservation
Red Rock National Conservation Area
Southern Nevada Home Builders Association
SNWA
Tortoise Group
NPS
USFWS
USDA-FS

Project Contact
Christina Gibson, Subcommittee Chair, Clark County

Funding Awarded
$278,300

Funding Spent
$296,575

Completion Date or Status
Completed; Independent Public Information and Education assessment will be complete by June of 2004.

Documents Produced
BROCHURES: Balancing species conservation with economic development and growth; Killer Weed, Tall Whitetop
BOOK: Species Account Manual (expected to be printed November, 2003).

DESERT TORTOISE FENCING WORKING GROUP

Featured Project
Fencing Program

Project Description
The Clark County Desert Conservation fencing working group met regularly to discuss and evaluate desert tortoise fencing priorities, monitoring and maintenance of existing fencing, funding and contracting options, and fencing recommendations.

Project Status

- On April 1, 2003, Clark County entered into an interlocal agreement with the Nevada Department of Transportation (NDOT) for construction of 16 miles of tortoise-proof fencing along SR 165
- The Fencing Working Group has continued to evaluate and re-prioritize the fencing priority list
- The Fencing Working Group developed a scope of work for a baseline inventory of all existing tortoise-proof fencing in Clark County. (Inventory to be completed next biennium)
- Future funding for fencing was requested through SNPLMA

Partners
BLM
NDOT
NDF
PIC
USFWS
USDA-FS
NPS

Project Contact
Phil Medica, Working Group Chair, United States Fish and Wildlife Service

Funding Awarded
$1,100,000

Funding Spent (& encumbered)
$804,000

Completion Date or Status

Fencing of SR165 expected to begin early in 2004

Baseline Inventory of tortoise-proof fencing expected to be complete by year end 2003

Documents Produced

Updated Fencing inventory list

SOUTHERN NEVADA WATER AUTHORITY

Featured Project
Tall Whitetop Control in the Las Vegas Wash

Project Description
This project was to conduct herbicide treatment of known infestations of tall whitetop (*Lepidium latifolium*) within the lower Las Vegas Wash in Fall 2002 and Spring 2003.

Project Status
The Section 10 funds were used to treat a total of 40 gross acres of tall whitetop. The fall treatment took place from October 1 to November 28, 2002. The spring treatment took place from April 7 to April 11, 2003. Two herbicides, Rodeo (Monsanto) and Escort (Dupont), were applied according to the location of tall whitetop in relation to surface water. Total infested and treated acres consisted of 2.427 acres, while the total gross acres covered amounted to 72.40 acres.

Partners
Lake Mead Exotic Plant Management Team

Project Contact
John Tennert, SNWA

Funding Awarded
$24,000

Funding Spent
$24,000

Spring 2003 Treatment

Completion Date or Status
Completed

Documents/Products Produced
Fall Treatment 2002, Lake Mead Exotic Plant Management Team, Tall Whitetop Project, Las Vegas Wash, Clark County, Nevada, December 22, 2002.
Spring Treatment 2003, Lake Mead Exotic Plant Management Team, Tall Whitetop Project, Las Vegas Wash, Clark County, Nevada, April 21, 2003.

MICHAEL CREATHBAUM

Featured Project
Boulder City Conservation Easement Law Enforcement

Project Description
This project consisted of providing law enforcement on the 85,000-acre Boulder City Conservation Easement.

Project Status
No citations were issued as a result of this project as Michael Creathbaum relied solely on public information and education tactics to obtain compliance from potential violators.

Partners
BLM
NPS
Boulder City Police Department

Project Contact
Michael Creathbaum

Funding Awarded
$141, 800

Funding Spent
$141,800

Completion Date or Status
Completed

Documents/Products Produced
Three (3) quarterly reports

LAS VEGAS SPRINGS PRESERVE

Featured Project
Poppy Seedbank Distribution Study

Project Description
Recommended mitigation measures on lands containing Las Vegas bearpoppy (*Arctomecon californica*) plants often include the removal of soil containing poppy seeds around poppy plants. Poppies are short-lived perennials with long-lived seeds, therefore the salvage of the seedbank has been assumed to be critical to the survival of a poppy population. However, little information is available regarding the amount of seed that ends up in the seedbank, the distribution of that seed in relation to poppy plants, and the viability of those seeds. This information would give us a better understanding regarding the amount of soil to remove during mitigation, the potential for salvaging seeds for germination studies and propagation, and the potential for encouraging recruitment of poppy plants from the seedbank.

Project Status
Seedbank samples from a population of poppies at the North Las Vegas Airport were collected during 2000. Approximately 200 soil samples were analyzed by the Seed Laboratory at Colorado State University during fall and winter 2002-03. Lab analysis consisted of determining the number and condition of seeds per unit of soil. Data will be summarized and a report prepared during 2004.

Partners
Clark County Department of Aviation

Project Contact
Dr. Von K. Winkel, Las Vegas Springs Preserve/Las Vegas Valley Water District

Funding Awarded
$10,000

Funding Spent
$4,000

Completion Date or Status
June 2004

Documents Produced
None

LAS VEGAS SPRINGS PRESERVE

Featured Project
Buckwheat Salvage/Transplant Trial

Project Description
The main objective of this trial was to determine the feasibility of salvaging Las Vegas buckwheat (*Eriogonum corymbosum* var. *glutinosum*) plants. Learning how to salvage these plants is important for the following reason. The LVSP requires Las Vegas buckwheat plants for a special rare plant community. Some of the plants in this landscape should be mature specimens. Due to the short timeframe before the LVSP opens in 2005, mature plants can only be obtained by salvaging plants in the wild. This trial will help to determine whether or not it is feasible to salvage buckwheat for the LVSP.

Salvaging may become an important option for mitigating Las Vegas buckwheat populations since this rare species will soon be listed by the State of Nevada. Information from this trial will help others to know whether or not it is feasible to mitigate by salvaging these plants. Knowledge is also needed regarding the germination and propagation of Las Vegas buckwheat. This knowledge could aid LVSP staff in propagating plants for landscapes in the LVSP and also be an option for mitigating Las Vegas buckwheat populations away from the LVSP. Monitoring the phenology of these plants and germinating seeds collected from them should provide opportunities to obtain this knowledge.

Project Status
The scientific approach for this trial was as follows. Sixty Las Vegas buckwheat plants were identified and tagged at the salvage location. These plants were then randomly assigned one of three salvage methods (tree spade, excavate and box, and excavate and bag). During February 2002, the plants were salvaged and transported to a growing bed behind the Desert Demonstration Gardens (DDG). The plants were randomly assigned to a location in the growing bed and then planted. The plants were then irrigated to maximize survival and monitored to measure survival, health, growth and phenology. Statistical tests will be performed on the data to determine which salvage method maximizes survival of Las Vegas buckwheat plants. The data will be summarized and a report prepared. Currently, only two plants out of the original 60 have died.

Partners
None

Project Contact
Dr. Von K. Winkel, Las Vegas Springs Preserve/Las Vegas Valley Water District

Funding Awarded	**Funding Spent**
$10,000	$10,000

Completion Date or Status
June 2004

Documents Produced
None

LAS VEGAS SPRINGS PRESERVE

Featured Project
Soil and Mycorrhizal Fungi Surveys

Project Description
Las Vegas bearpoppies are typically found on soils containing gypsum. In addition to gypsum and other salts, there may be other physical or chemical soil parameters that may be important to bearpoppy health and survival. To ensure that soils at the LVSP are adequate for salvaged poppies, it is important that soils at other known poppy habitats in Las Vegas Valley and possibly near Lake Mead be sampled and compared to soils at the LVSP.

Roots of Las Vegas bearpoppies and Las Vegas buckwheat may be colonized by mycorrhizal fungi. Many plant species have symbiotic relationships with these fungi. Indeed, without the associated fungi, some plant species may not persist. If Las Vegas bearpoppies and/or Las Vegas buckwheat were colonized with mycorrhizal fungi, it would be important to know whether or not soils at the LVSP sites also contain the same fungi.

To determine the physical and chemical characteristics of the soils and the presence of mycorrhizal fungi, LVSP biologists would collect soil samples from several bearpoppy and buckwheat habitats at the LVSP. These samples would be sent to a soils laboratory for analysis. Results from LVSP soils would be compared to results from the other sites to insure that the LVSP can support additional poppy and buckwheat plants.

Project Status
LVSP staff has met with scientists from the National Park Service and Natural Resources Conservation Service to organize a multiagency effort to sample poppy soils. Maps showing soil types and poppy populations have been produced and sample locations are being identified. Soils will be sampled during 2003-04 and analyzed for physical and chemical properties and mycorrhizal fungi.

Partners
NPS
BLM

Project Contact
Dr. Von K. Winkel, Las Vegas Springs Preserve/Las Vegas Valley Water District

Funding Awarded
$10,000

Funding Spent
$500

Completion Date or Status
June 2004

Documents Produced
None

LAS VEGAS SPRINGS PRESERVE

Featured Project

Las Vegas Bearpoppy and Buckwheat Germination Trials

Project Description

Research is needed to determine the germination requirements of the Las Vegas bearpoppy and Las Vegas Buckwheat. During past mitigation efforts, emphasis has been placed on transplanting poppies. However, few transplantation attempts have been successful. Knowledge of how to germinate Las Vegas bearpoppy seeds would provide more options for maintaining greater stability in LVSP and other poppy populations.

Information is also needed regarding the germination and propagation requirements of Las Vegas Buckwheat seeds. This information is important so that these plants can be propagated at the LVSP in the future. In addition, the LVSP is interested in adding to the body of knowledge concerning buckwheat seed germination and propagation so that populations of this rare species can be bolstered.

Seeds would be collected from local poppy and buckwheat populations and stored in a manner that would optimize their viability. A literature review would be conducted to determine the state of knowledge concerning germination of these two species and related species. Germination and propagation trials would then be conducted with the collected seed. Specific trials would depend upon previous work by other researchers and the lack of knowledge of seed germination and propagation.

Project Status

Las Vegas Buckwheat: A literature review was initiated during 2002. Seed was collected from salvaged buckwheat located at the LVSP nursery during 2002. During 2002, LVSP staff conducted pilot trials to determine the germination requirements of Las Vegas Buckwheat. Results indicated that this species germinated readily with no special treatments. Due to this preliminary data, no additional germination work will be conducted on this species.

Las Vegas Bearpoppy: A literature review was initiated during 2002. Seed was collected from salvaged poppies located at the LVSP nursery during 2001, 2002, and 2003. Researchers at Bitterroot Restoration have conducted germination studies for a variety of endangered species. We requested and they have submitted a proposal for conducting germination studies on the Las Vegas bearpoppy. A contract for germination and propagation studies will be awarded during 2003. A report of findings from this work will be distributed following the completion of work.

Partners
NPS
BLM

Project Contact
Dr. Von K. Winkel, Las Vegas Springs Preserve/Las Vegas Valley Water District

Funding Awarded
$20,000

Funding Spent (encumbered)
$15,000

Completion Date or Status
June 2004

Documents Produced
None

MUDDY RIVER RIPARIAN ENVIRONMENTAL IMPACT ALLEVIATION COMMITTEE

Featured Project
Muddy River Restoration

Project Description
The Muddy River environs between Warm Springs and Lake Mead are potential locations for several critical animal species. Five of the known threatened, endangered, or candidate wildlife species are indigenous to this area. They include the Moapa Dace, Virgin River Chub, White River Spring Fish, Moapa Riffle Beetle, and the Moapa Snail. Other threatened and endangered species such as the Yellow Billed Cuckoo and the Phainopepla are also in this area.

Tamarisk Invasion

Project Status
MRREIAC has been working on private lands since 1995. This project was mainly to eliminate noxious weeds and, in particular, the Tamarisk. This plant can take up 300 gallons of water per day through evapotranspiration, and excretes salt as a by-product, which is a contributor to the overall salt loading into the river system. MRREIAC has to date eliminated approximately 90 acres of salt cedar and has begun (the first year of five) the elimination of Russian Knapweed. The indices of success are the rate of regrowth of the Tamarisk which is less every year as the native species take over. Using goats, nearly one third of the Russian Knapweed was eliminated. The follow-up on this starts in October, and the Tamarisk project will continue as it has since 1995.

One Side Cleared With Restoration In Progress

Partners
Hidden Valley Dairy
Charlie and Vera Hester
South 15
UNR-BRRC
Caprine Restoration Services
Nevada Power
TNC
MVC-Lewis Family
USFWS
NDF
NDOW
UNLV
USFWS-Refuges

Some Like Knapweed, Some Like Tamarisk

Project Contact
Ann Schreiber, (702) 865-2040

Funding Awarded
$195,778

Funding Spent
$195,768

Completion Date or Status
Completed; approximately half of the tamarisk on the upper Muddy River is under control and the project is ongoing in the 2003 – 2005 Biennium.

Documents/Products Produced
Eight (8) quarterly reports and one (1) final project report

PARTNERS IN CONSERVATION

Featured Project
GPS Roads

Project Description
The following comprised this project's milestones and deliverables: work with BLM to finalize and field test data dictionary for GPS Roads project; conduct training sessions for volunteers; conduct practice sessions prior to in-field sessions with BLM, collect GPS data of Whitney Pockets, Gold Butte, Mormon Mesa, and all related and connected non-ACEC areas; work with NPS and BOR and other governmental agencies in an attempt to share GPS data and to provide connectivity on roads and maps where agency's boundaries meet; attend and report to Roads Working Group all northeast Clark County roads issues, prepare 'survey questionnaire' regarding rural residents' personal roads use; obtain approval for survey questionnaire, distribute questionnaire, prepare presentation materials and format for soliciting rural input; conduct at least five presentations, prepare workshop schedule and conduct at least one workshop, prepare workshop materials and format for soliciting rural input; attend Friends of Gold Butte meetings to solicit feedback regarding use and management of Whitney Pockets and input regarding access and roads; and prepare a summary report of the survey results regarding residents' personal roads use.

Project Status
PIC developed an extensive data dictionary to document routes, points, areas, and linear features. The route menu contains 30 attributes; the point menu contains 54 attributes; the area menu contains nine attributes; and the linear feature menu contains four attributes. The attributes were designed to capture as many human use/misuse actions as possible. PIC conducted over 20 training sessions and produced handouts and folders to accompany the training sessions. PIC conducted over ten practice sessions in preparation of doing field practice sessions and actual fieldwork with BLM.

PIC waited until the BLM hired an intern to assist and accompany PIC and selected volunteers; then PIC, the BLM intern, and volunteers began collecting GPS roads data. PIC prepared a 'survey questionnaire' regarding rural residents' personal roads use and received approval to distribute questionnaires and to begin collecting informal information from interested residents. PIC prepared a workshop format and prepared workshop materials. PIC conducted more than two workshops. PIC prepared a presentation, presentation format and presentation materials. PIC conducted more than five presentations. PIC attended all Friends of Gold Butte meetings, actively participated in discussing

issues, and solicited feedback from Friends of Gold Butte members. PIC requested and was granted a no-cost extension of this project in order for work to continue without interruption while waiting for PLMA monies to become available for the 2003-2005 biennium.

Partners
BLM
NPS
Bunkerville, Moapa, and Moapa Valley Town Advisory Boards
City of Mesquite
American Legion Post 75 of Moapa Valley
Virgin Valley Sunrise Rotary Club of Mesquite, NV
Friends of Gold Butte
Moapa Valley Rotary Club
Ace Hardware of Overton, NV
Southern Nevada Regional Trails Partnership
Moapa Valley Trails Subcommittee
Clark County Rural Town Services
Clark County School District in Moapa Valley and Virgin Valley.

Project Contact
Elise McAllister, Administrator,
Partners In Conservation

Funding Awarded
$225,000

Funding Spent
$160,081

Completion Date or Status
November 30, 2003. Ongoing in the 2003 – 2005 biennium.

Documents/Products Produced
Extensive GPS data, digital picture files corresponding to relevant data collection points, training and practice session handouts and folders, daily field notes, daily maps. on-going BLM maps of area, quarterly reports, verbal and/or written reports if requested, final reports, summary of survey results, logs of presentations and workshops, reports of each Friends of Gold Butte meeting, reports of each town board and city council meeting.

PARTNERS IN CONSERVATION

Featured Project
Whitney Pockets

Project Description
This project consists of the following milestones and deliverables: work with BLM to finalize and field test data dictionary for Whitney Pockets area, conduct training sessions for volunteers, conduct practice sessions prior to in-field sessions with BLM, work with BLM to develop direction and content for a Whitney Pockets website, prepare draft website for BLM approval, collect GPS data of Whitney Pockets, prepare 'survey questionnaire' regarding the use and management of Whitney Pockets, obtain approval for survey questionnaire, attend Friends of Gold Butte meetings to solicit feedback regarding use and management of Whitney Pockets, and prepare a summary report of the survey results regarding use and management of Whitney Pockets.

Project Status
PIC developed an extensive data dictionary to document routes, points, areas, and linear features. The route menu contains 30 attributes; the point menu contains 54 attributes; the area menu contains nine attributes; and the linear feature menu contains four attributes. The attributes were designed to capture as many human use/misuse actions as possible. PIC conducted over 20 training sessions and produced handouts and folders to accompany the training sessions. PIC conducted over ten practice sessions in preparation of doing field practice sessions and actual fieldwork with BLM. PIC researched current Whitney Pockets websites and Internet references and researched appropriate historical information for website. PIC prepared a rough draft website design for BLM approval and received approval to proceed with a website that mainly focuses on soliciting public participation, general historical statements and points of interest, and identifies, in a general way, current threats and impacts to Whitney Pockets. PIC waited until the BLM hired an intern to assist and accompany PIC and selected volunteers, and then PIC, the BLM intern, and volunteers began collecting GPS data regarding Whitney Pockets.

PIC prepared a 'survey questionnaire' regarding use and management of Whitney Pockets and received approval to distribute questionnaires and to begin to collect informal information from interested residents. PIC attended all Friends of Gold Butte meetings, actively participated in discussing issues, and solicited feedback from Friends of Gold Butte members. PIC requested and was granted a no-cost extension of this project in order for work to continue without interruption while waiting for PLMA monies to become available for the 2003-2005 biennium.

PIC attended the Nevada Site Steward Program workshop and training session to learn how to help protect sensitive cultural sites and to gain more knowledge about cultural sites in the Whitney Pockets area.

Partners
BLM
Bunkerville, Moapa, and Moapa Valley Town Advisory Boards
City of Mesquite
American Legion Post 75 of Moapa Valley
Virgin Valley Sunrise Rotary Club of Mesquite, NV
Friends of Gold Butte

Project Contact
Elise McAllister, Administrator, Partners In Conservation

Funding Awarded
$225,000 combined with the GPS Roads Project

Funding Spent
$160,081 (combined)

Completion Date or Status
November 30, 2003. All items will be completed except for some GPS data collection in the Whitney Pockets area which is associated and/or duplicated in the GPS Roads Project, and the final draft of the Whitney Pockets website might not be approved by the BLM. A summary report of the survey questionnaire can be compiled, but the survey questionnaire will continue during the PLMA 2003-2005 funding cycle to solicit as many comments as possible.

Documents/Products Produced
Extensive GPS data, training and practice session handouts and folders, daily field notes, daily maps. ongoing BLM maps of area, quarterly reports, verbal and/or written reports if requested, final reports, Whitney Pockets website, summary of survey results, reports of each Friends of Gold Butte meeting, reports of each town board and city council meeting.

PARTNERS IN CONSERVATION

Featured Project

Public Outreach for the Desert Conservation Program and Tortoise Protection Projects

Project Description

The project consists of the following milestones and deliverables: perform public outreach services; monitor tortoise habitats and assist with the MSHCP-approved tortoise protection projects; develop and administer safety meetings with volunteer organizations; develop and administer training sessions for volunteer organizations; administer, coordinate, and schedule delivery of education and informative materials; collect data related to all volunteer, educational, and conservation activities, analyze and summarize data collected; identify agencies contacted and topics discussed. Through accomplishing the above, 31,000 feet of tortoise fencing is installed.

Project Status

To date, 31,000 feet of desert tortoise fencing has been installed along I-15 from Carp/Elgin exit (#100) west toward Moapa on both sides of the freeway. Over 500 youth and adults have received presentations about the Desert Tortoise Fence Installation Project. Over 500 youth and adults have received educational information and handouts about the CCMSHCP, the desert tortoise, and the reason for installing tortoise fencing along busy highways in Clark County. Over 500 youth and adults have received installation instructions and handouts for installing tortoise fencing along I-15 from Carp/Elgin exit (#100) west toward Moapa. Over 500 youth and adults have received safety instructions and handouts to ensure that the installation of tortoise fencing will be done in a safe manner. Installed fencing has been monitored per permit requirements, during tortoise active seasons, and after any rainfall. To date, no installed tortoise fencing along I-15 has been compromised. Tortoise habitats on Mormon Mesa were measured and prepared for installing 31,000 feet of tortoise fencing. Additionally, 31,000 feet of installed tortoise fencing was inspected for proper installation. Logs of all training and safety meetings were maintained. Approximately 20 public relations events have been held with organizations that installed tortoise fencing and ‘big check’ presentations have been made to those organizations for their participation in the project.

Partners
BLM
Bunkerville, Moapa, and Moapa Valley Town Advisory Boards
City of Mesquite
Clark County
USFWS
Boy Scout Troops in Overton, Logandale, Moapa, Bunkerville, Mesquite, and Las Vegas
St. John's Catholic Church
Moapa Valley High School Future Farmer's of America
Moapa Valley High School Jazz Band and Ensemble Choir
Mesquite Boxing Club
Bunkerville Volunteer Fire Department
Moapa Valley High School Rodeo Club
Moapa Valley High School French Club
Moapa Valley High School Wrestling Team
Latter Day Saints Church Young Men and Women's Organizations from Overton, Logandale, Moapa, Bunkerville, and Mesquite

Project Contact
Elise McAllister, Administrator, Partners In Conservation

Funding Awarded
$90,000

Funding Spent
$56,250

Completion Date or Status
June 30, 2004. It is anticipated that the remaining 5,000 feet of tortoise fencing will be installed before December 31, 2003 and all the accompanying tasks and milestones necessary to accomplish the installation of 5,000 feet of tortoise fencing will also be finished.

Documents/Products Produced
Installation of 31,000 feet of tortoise fencing along I-15, photographs of installation of fencing, photographs of P/R presentations, logs of all safety sessions, logs of all training sessions, installation handouts, safety handouts, educational handouts, regular reports to the Fencing Working Group, quarterly reports, final reports.

SOUTHERN NEVADA ENVIRONMENTAL, INC.

Featured Project
Desert Tortoise Transfer and Holding Facility

Project Description
This project consists of operation and maintenance of the Clark County Desert Tortoise Transfer and Holding Facility (DTTHF). Responsibilities of SNEI include operating a desert tortoise hotline and County-wide pick-up service with a comprehensive call log and database. Responsibilities also include a disease screening program, data collection and tagging, keeping a comprehensive database of all incoming and outgoing tortoises, and care and feeding, as well as pen construction and maintenance.

Project Status
Incoming tortoises in the 2001 – 2003 biennium totaled 2,272. Throughout the biennium, there were no tortoises collected from a voluntary Section 10 clearance. Seven (7) tortoises were collected from Section 7 clearances throughout the biennium. Four (4) of the seven tortoises collected from Section 7 clearances were collected from the Las Vegas beltway project. In the biennium, 89 known wild tortoises entered the DTTHF.

Partners
BLM

Project Contact
Charles LaBar, (702) 248-5370

Funding Awarded	**Funding Spent**
$412,019	$412,171

Completion Date or Status
Completed June 30, 2003; ongoing in the 2003 – 2005 biennium

Documents Produced
Eight (8) Quarterly reports
2001 – 2003 Biennial Report, July 1, 2001 through June 30, 2003, Clark County Tortoise Transfer and Holding Facility, Desert Tortoise Conservation Center and Desert Tortoise Translocation Program, SNEI, August 26, 2003.

SOUTHERN NEVADA ENVIRONMENTAL, INC.

Featured Project
Desert Tortoise Translocation

Project Description
As part of the responsibilities outlined by Clark County and the MSHCP, SNEI continually prepares and releases qualified desert tortoises to the Large Scale Translocation Site (LSTS) as part of the University of Nevada, Reno/U.S. Geological Survey Desert Tortoise Translocation Study.

Project Status
SNEI has released over 4,000 tortoises from holding pens at the DTTHF and the Desert Tortoise Conservation Center (DTCC). SNEI released 1,252 tortoises at the LSTS during the 2001 – 2003 biennium. In September and October of 2001, SNEI released 768 tortoises to the LSTS. The remaining 484 tortoises were released for translocation in April 2002 and April/May 2003. Tortoises were not released in Fall 2002 due to permitting difficulties.

Partners
BLM
UNR-BRRC
USFWS
U. S. Geological Survey

Project Contact
Charles LaBar, (702) 248-5370

Funding Awarded	**Funding Spent**
$80,000	$27,440

Completion Date or Status
Completed June 30, 2003; ongoing in the 2003 – 2005 biennium

Documents/Products Produced
Eight (8) quarterly reports
2001 – 2003 Biennial Report, July 1, 2001 through June 30, 2003, Clark County Tortoise Transfer and Holding Facility, Desert Tortoise Conservation Center and Desert Tortoise Translocation Program, SNEI, August 26, 2003.

THE CONSERVATION FUND

Featured Project
Acquisition of Grazing Permits in Clark County

Project Description
This project consists of acquiring grazing allotments within Clark County as identified in the MSHCP.

Project Status
During the 2001 – 2003 biennium, Sand Hollow and Beacon grazing allotments were acquired. Reports of conveyance were filed on the Jensen water rights permits as well.

Partners
BLM

Project Contact
Christine Quinlan, (303) 444-4369

Funding Awarded
$122,300

Funding Spent
$80,338

Completion Date/Status
June 30, 2003

Documents/Products Produced
None

THE NATURE CONSERVANCY

Featured Project

Riparian Land Acquisition - Acquisitions and Exchanges, Protect Habitats, Protect Species

Project Description

TNC and partners continued work begun during the 1999-2001 biennium to implement the strategic conservation program of the Clark County MSHCP through permanent protection of critical riparian habitat. TNC worked closely with the BLM to help facilitate land exchanges to acquire riparian corridors within Southern Nevada. While the project area covered all of southern Nevada, emphasis was placed on the Muddy River and lower Meadow Valley Wash areas. TNC coordinated with other public and private conservation entities to ensure the most efficient use of time and resources.

Project Status/Accomplishments

In the last two years, working with willing sellers, nearly three miles of riparian corridor along the Muddy River has been or is about to be afforded permanent protection. In 2001 the Nevada Power's Perkins Ranch was acquired by BLM through efforts by TNC and The Conservation Fund. In 2002, the Alamo property was acquired by TNC. In late 2003, the S. Perkins Ranch will be acquired by TNC. The Alamo and S. Perkins properties were acquired with the financial assistance of Clark County and have both been nominated for acquisition through Southern Nevada Public Lands Management Act (SNPLMA). Substantial progress was made to facilitate two land exchanges in southern Nevada: the Bob Lewis exchange and the Coon Trust Property exchange. The Bob Lewis offered property included 1,641 acres of riparian land on Meadow Valley Wash and the Muddy River. The Coon Trust offered property contained 257 acres along the Muddy River. The exchanges were not completed following the BLM's determination that land exchanges were no longer a preferred way to dispose of public lands. TNC has continued to be in contact with these two owners to see if

there are other alternative opportunities. In late 2002, the owners of the Warm Springs Ranch agreed to have their property nominated for SNPLMA. TNC prepared the nomination for the 1,160-acre property situated along the upper Muddy River. TNC has been in contact with a number of other property owners along the Muddy River to explore property protection options. TNC continues to participate in the coalition of parties interested in the Muddy River.

Partners

Clark County DCP
BLM
USFS
USFWS
USGS
NDOW
MRREIAC
Partners in Conservation
TCF

Project Contact

Rob Scanland, TNC Reno Field Office

Funding Awarded
$ 209,125

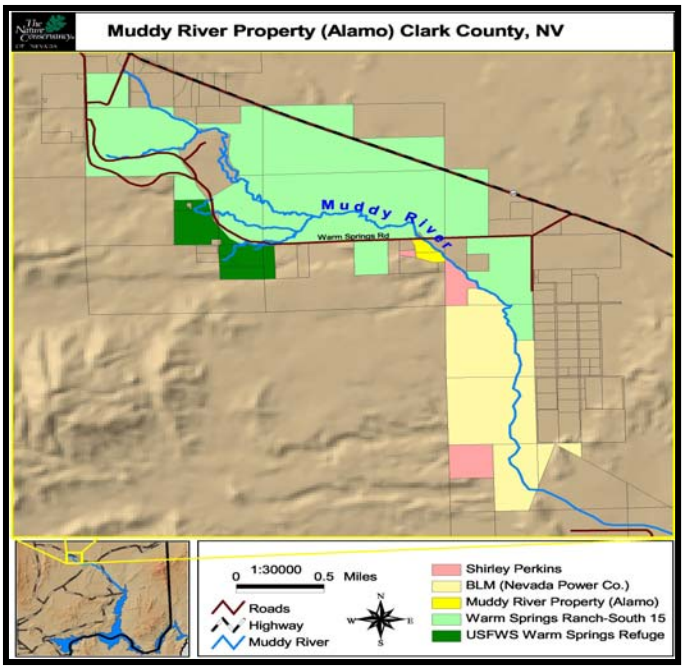
Funding Spent
$ 159,836.43

Completion Date or Status

S. Perkins Ranch acquisition to occur in November 2003. Landowner contact and opportunity assessment is ongoing.

Documents Produced

- 4th Draft Feasibility Report TNC-Robert C. Lewis et al - BLM Las Vegas Field Office
- SNPLMA Round 2 Nomination and approval - Nevada Power's Perkins Ranch
- SNPLMA Round 3 Nomination and approval – Alamo Property
- SNPLMA Round 3 Nomination and approval – S. Perkins Property
- SNPLMA Round 3 supplemental Nomination and approval – Warm Springs Ranch



SECTION 7 PROJECTS

The following section contains key information for each Section 7 project conducted during the 2001 - 2003 biennium. For the subject biennium, a total of four (4) agencies and contractors were awarded Section 7 funds for discrete projects totaling $1,012,100. Under the direction of the agencies and contractors enlisted, a total of seven (7) projects were funded and all seven (7) projects were completed.

Federal agencies awarded funds include:

- U. S. Department of Interior, Bureau of Land Management (BLM)
- U. S. National Park Service (NPS)

State agencies awarded funds include:

- Nevada Division of Forestry (NDF)

Others:

- Southern Nevada Environmental, Inc. (SNEI)

SECTION 7 PROJECTS PER CONTRACTOR

Bureau of Land Management

Project	Section 7 Funding Awarded	Project Status
Upland Restoration	$325,000	Completed
Fencing – Cattleguards	$50,000	Completed
Total	**$375,000**	**Actual: $375,000**

National Park Service

Project	Section 7 Funding Awarded	Project Status
Burro Removal	$33,000	Completed
Plant Production	$50,600	Completed
Road Maintenance	$73,500	Completed
Total	**$157,100**	**Actual: $157,097**

Nevada Division of Forestry

Project	Section 7 Funding Awarded	Project Status
Desert Tortoise Fencing	$400,000	Completed
Total	**$400,000**	**Actual: $49,641**

Southern Nevada Environmental, Inc.

Project	Section 7 Funding Awarded	Project Status
Desert Tortoise Conservation Center	$80,000	Completed
Total	**$80,000**	**Actual: $80,000**

BUREAU OF LAND MANAGEMENT

Featured Project
Restoration

Project Description
BLM continued habitat restoration projects on low elevation sites. Priority was given to habitats for covered species such as desert tortoise and bearpoppy. Efforts were concentrated in Piute Valley, Gold Butte, and Red Rock National Conservation Area. Restoration projects included roads/trails and abandoned mine sites.

Project Status
Seventy restoration projects were completed this biennium: 68 were linear disturbances (closed roads or illegal ways) and two were exploratory mine scrapes. The 70 projects completed totaled 127 miles of linear disturbance, of which eight miles were planted, and 13.5 acres of mine scrape restored. An interrelational restoration database was created which links information on the restoration sites with their respective pictures and picture descriptions. The creation of this database has greatly improved BLM's ability to browse, organize, quantify, and reference all restoration data. Datasheets were created, based on the database format, which will ensure that all the information necessary is collected with each new disturbance found and each repeat site visit.

Before

After

Partners
Southern Nevada Restoration Team (BLM, NPS, USDA-FS, USFWS-Refuges)

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$325,000

Funding Spent
$325,000; Approximately $196,000 was expended on labor from Environmental Careers Organization, with an additional $20,000 spent on two eight-person crews from the Nevada Conservation Corps. Vehicle costs, equipment, supplies, travel, and administrative overhead utilized the remainder of the budget.

Completion Date or Status
Completed

Documents/Products
Relational database of results
GIS coverage of current restoration
GIS coverage of 1997 disturbance flyover

BUREAU OF LAND MANAGEMENT

Featured Project
Cattleguards

Project Description
Purchase cattleguards for high-priority desert tortoise areas.

Project Status
BLM has purchased 15 cattleguards and Nevada Department of Transportation (NDOT) will install them as part of Phase II of the US Highway 95 (US95) road widening project. BLM will provide environmental compliance and tortoise monitoring. One of the sites is located along US95 and the remaining 14 are located on the south side of Nelson road. The cattleguards will be delivered to the NDOT material site off Highway 164 (Nipton Road Material Site). Two cattleguards were cleaned out at US95 and Christmas Tree Pass Road and at US95 and Nelson Road. BLM provided tortoise monitors for monitoring heavy equipment during the activity.

Cattleguard needed at US95 – mile marker 37

Cattleguard on Nelson Road before cleaning

Partners
NDOT

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$50,000

Funding Spent
$50,000

Completion Date or Status
Completed; NDOT will provide a schedule of installation.

Documents/Products
GIS coverage of cattleguard installation sites

SECTION 7 PROJECT ACCOMPLISHMENTS

NATIONAL PARK SERVICE

Featured Project
Burro Removal

Project Description
Burros are removed using a variety of live-capture methods to control their numbers. Captured burros are transferred to the BLM for adoption through their wild horse and burro adoption program.

Partners
BLM

Project Contacts
Ross Haley, Lake Mead NRA

Funding Awarded
$33,000

Funding Spent
$33,000

Completion Date or Status
Although burro removal projects are ongoing to control both numbers and distribution, all obligations associated with the 2001-2003 biennium have been completed. During the biennium there were a total of 105 burros removed from the Lake Mead NRA. The majority of these animals were captured by herding them with a helicopter into a trap. Other methods used this biennium included capturing with a corral trap, roping, and one animal was captured by hand when it became mired in mud along the lakeshore.

Documents Produced
None

NATIONAL PARK SERVICE

Featured Project
Plant Material Production for Interagency Restoration Program

View of two added irrigation stations supporting Creosote Bush and Brittle Bush, with 3,450 SF greenhouse range in the background.

Project Description
Restoration of Desert Tortoise habitat and other special status species habitat will require the use of native plants usually not available from local nurseries. By 2001, the National Park Service had a small nursery and native plant grow-out area. This project increased those facilities in size and augmented the irrigation system to enable the NPS to provide native plants to the USDA-FS, USFWS, BLM, and NPS for restoring impacted habitats. The NPS has developed methods for germinating and growing many Mojave Desert species. The Lake Mead NRA staff has been involved in propagating, growing, planting, and maintaining native plants used in numerous successful restoration projects within the recreation area boundaries.

Project Status
Shade structure expansion, headhouse construction, greenhouse bench installation, office handicap ramp installation, and four new outside irrigation stations were built during this time. In addition, over 23,000 trees, shrubs, grasses and wetland plants were propagated for NPS and partner/cooperator restoration projects. They included the following species: Fremont Cottonwood, Goodding's Willow, Coyote Willow, Desert Willow, Honey Mesquite, Screwbean Mesquite, Catclaw Acacia, Beavertail Cactus, Cholla Cactus, Sacatone Grass, Saltgrass, Bursage, Brittlebush, Desert Senna, Indigo Bush, Creosote Bush, Baccharis, Bulrush, and Yerba Mansa.

Partners
BLM
USFWS
USDA-FS
LVSP
Clark County Parks and Community Services
Community College of Southern Nevada
NDF

Nevada Cooperative Extension Service
SNWA
Federal Highway Administration
Las Vegas Wash
City of Boulder City Wetlands
NPS Concessionaires

Project Contact
Alice C. Newton, Resource Management Specialist, 702-293-8977, alice_corrine_newton@nps.gov.

Funding Awarded
$50,600

Funding Spent
$50,600

Completion Date/Status
All milestones and deliverables were accomplished as of June 30, 2003.

Documents/Information Produced
None; deliverables were nursery upgrades and plant material production only

SECTION 7 PROJECT ACCOMPLISHMENTS

NATIONAL PARK SERVICE

Featured Project
Road Maintenance, Barrier Installation, and Signs

Project Description
Illegal use of off-highway vehicles has increased in the recreation area. Legal routes should be better designated with proper signs and illegal access points must be barricaded. Impassable areas in designated roads should be repaired so visitors do not avoid these difficult spots by driving around them into pristine desert. Impacted areas must be raked and plant material installed to discourage further illegal use. It is anticipated that illegal off-highway use will continue as visitation increases in the recreation area. It is critical that routes be designated, illegal access points barricaded, and impassable spots repaired to protect undisturbed desert areas from future impacts.

This project accomplished a portion of these activities by using youth work groups such as Nevada Conservation Corps, Northern Arizona Conservation Corps, Environmental Careers Organization, and Student Conservation Association. The NPS augmented this project funding with additional funds, technical support, supervision, and use of existing tools and facilities.

Nevada Conservation Corps members install post and cable barriers near the terminus of Lake Mead's Approved Road 111 in the Overton Arm.

Northern Arizona Conservation Corps members work to restore an abandoned and closed road near Government Wash.

Project Status
Over the 2001 – 2003 biennium the Lake Mead Restoration Crew worked in the Overton Beach area, Gold Butte, Northshore Road corridor, Echo Bay/Stewarts Point area, Redstone, Callville Bay area, Nelsons Landing, Cottonwood Cove area, and the Newberry Mountains. They treated 117,667 linear feet (22.29 miles) of off-road vehicle tracks and illegal roads, encompassing 33.5 acres of disturbance, and installed and maintained 1,320 plants and 21,526 linear feet (4.1 miles) of barrier.

This effective habitat protection and restoration program helped to maintain and protect public access to public lands by reducing and mitigating damage to sensitive resources.

Partners
BLM

Project Contact
Alice C. Newton, Resource Management Specialist, 702-293-8977, alice_corrine_newton@nps.gov.

Funding Awarded
$73,500

Funding Spent
$73,497

Completion Date/Status
All milestones and deliverables were accomplished as of June 30, 2003.

Documents/Information Produced
Maps of areas treated

NEVADA DIVISION OF FORESTRY

Featured Project
Desert Tortoise Fencing

Project Description
This project consisted of installing high-priority desert tortoise fencing at the direction of the Desert Tortoise Fencing Working Group.

Project Status
NDF completed approximately 12 miles of fencing during the 2001 – 2003 biennium.

Partners
Desert Tortoise Fencing Working Group

Project Contact
John Jones, Southern Regional Forester, NDF

Funding Awarded
$400,000

Funding Spent
$49,641

Completion Date or Status
Completed

Documents/Products Produced
Twelve (12) miles of desert tortoise fencing

SOUTHERN NEVADA ENVIRONMENTAL, INC.

Featured Project
Desert Tortoise Conservation Center

Project Description
This project consists of operating and maintaining the Desert Tortoise Conservation Center (DTCC). Responsibilities include maintenance of desert tortoise pens and care and feeding of the BLM tortoises, as well as receiving, caring for, and watering of salvaged plants from various entities contracted by the BLM. SNEI is also assisting with researchers from several organizations.

Project Status
Throughout the 2001 – 2003 biennium, SNEI assisted in the organization, care, and maintenance of approximately 1,000 desert tortoises in support of projects by the BLM, Smithsonian Institution, UNR-BRRC, Georgia Southern University, and the San Diego Zoo Center.

Partners
BLM

Project Contact
Charles LaBar, (702) 248-5370

Funding Awarded
$80,000

Funding Spent
$80,000

Completion Date or Status
Completed June 30, 2003

Documents/Products Produced
Eight (8) quarterly reports
2001 – 2003 Biennial Report, July 1, 2001 through June 30, 2003, Clark County Tortoise Transfer and Holding Facility, Desert Tortoise Conservation Center and Desert Tortoise Translocation Program, SNEI, August 26, 2003.

PLMA PROJECTS

The following section contains key information for each PLMA project conducted during the 2001 – 2003 biennium. For the subject biennium, a total of six (6) agencies and contractors were awarded PLMA funds for discrete projects totaling $4,648,334. Under the direction of the agencies and contractors enlisted, a total of 22 projects were funded, 12 were completed, six (6) research projects are ongoing in the 2003 – 2005 biennium, two (2) projects have been extended, one (1) project was combined with another, and one (1) project was neither initiated nor completed.

Federal agencies awarded funds include:

- U. S. Department of Interior, Bureau of Land Management (BLM)
- U. S. National Park Service (NPS)
- U. S. Department of Agriculture - Forest Service (USDA - FS)
- U. S. Fish and Wildlife Service (USFWS)

Others:

- The Nature Conservancy (TNC)
- University of Nevada, Reno - Biological Resources Research Center (UNR-BRRC)

PLMA PROJECTS PER CONTRACTOR

Bureau of Land Management

Project	PLMA Funding Awarded	Project Status
Wild Horse, Burro Herd Management	$325,000	Completed
Field Monitoring, Plant Inventories	$90,000	Completed
GIS Monitoring and Analysis	$250,000	Completed
Bat Inventory	$90,000	Extended through March 2004
Total	**$755,000**	**Actual: $725,000**

National Park Service

Project	PLMA Funding Awarded	Project Status
Plant Inventories	$161,000	Completed
Wildlife Surveys	$287,180	Completed
Data Collection	$115,048	Completed
Total	**$563,228**	**Actual: $422,418**

U. S. Department of Agriculture, Forest Service

Project	PLMA Funding Awarded	Project Status
Environmental Education	$50,000	Completed
Inventory/Monitoring Species of Concern	$90,000	Completed
Inventory/Monitoring Recreational Use	$162,670	Completed
Total	**$302,670**	**Actual: $157,364**

U. S. Fish and Wildlife Service

Project	PLMA Funding Awarded	Project Status
Upper Muddy River Restoration and Land Management Plan	$76,616	Combined with Muddy River Watershed Assessment
Desert NWR Plant Community	$50,000	Not initiated; not completed
Total	**$126,616**	**Actual: $0**

PLMA PROJECTS PER CONTRACTOR

The Nature Conservancy

Project	PLMA Funding Awarded	Project Status
Muddy River Watershed Assessment	$260,820	Partially Completed; Extended through June 30, 2005
Total	**$260,820**	**Actual: $46,027 through 6/30/03**

University of Nevada, Reno – Biological Resources Research Center

Project	PLMA Funding Awarded	Project Status
Spatial analysis-database - GIS	$272,171	Ongoing
Indictors and indicator species	$680,000	Ongoing
Biological considerations and rural roads management	$520,000	Completed
AMP workshops	$40,000	Completed
Individual species	$79,990	Ongoing
Muddy River	$170,401	Completed
Red Rocks To The Summit	$300,000	Ongoing
Marginal species	$89,999	Ongoing
Adaptive management of desert tortoise management	$820,000	Ongoing
Total	**$2,640,000**	**Actual: $1,313,037**

BUREAU OF LAND MANAGEMENT

Featured Project
Bat Inventory

Project Description
BLM worked with partners to determine abandoned mine closure schedules. Sites that could potentially be closed were located and surveyed for bat presence/absence. Those that appeared to have good potential for bats were surveyed more intensively and/or recommended for future surveys. Mines that were documented to have significant bat use were evaluated for the installation of bat gates.

Project Status
A grand total of 255 site evaluations for bats were completed for the 2001-2003 biennium. The results of the evaluations are as follows: 129 mines were found to be simple mines with no bat habitat potential; 126 mines were found to be complex and required intensive bat surveys. Of the 126 complex mines discovered, 11 were recommended for the installation of bat gates. The BLM requested and was granted a no-cost extension of this project to accommodate an additional round of spring surveys.

Partners
NV Mining Association
NV Division of Minerals
NV Department of Wildlife

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$90,000

Funding Spent
$60,000

Completion Date or Status
Additional surveys in Spring 2004

Documents/Produced

O'Farrell, Michael. 2002. Abandoned Mine Bat Survey, Hardy Mine, Clark County, NV.

O'Farrell, Michael. 2002 Abandoned Mine Bat Survey, Desert Queen Well Shafts, Clark County, NV

Sherwin, R.E. 2002. Results of Surveys to Determine the Use of Abandoned Mines by Bats in the Goodsprings Reclamation Project, Goodsprings, NV; GIS coverage of abandoned mine surveys

BUREAU OF LAND MANAGEMENT

Featured Project
Field Monitoring and Plant Inventory

Project Description
BLM will monitor ecological trends in key areas and map forage utilization in herd management areas (HMA) where conflict between grazers and covered species exists. BLM will also conduct plant surveys for covered and evaluation species, for which we need more information to assess the distribution and stressors of such species. Low-elevation covered species will be the focus of surveys.

Project Status
Forage utilization was conducted across 700,000 acres. This information will help BLM understand where heavy use is occurring in order to set limits on horse and burro numbers and protect habitat for covered and evaluation species. Utilization, water availability, and herd census information showed that key areas within Red Rocks, Johnnie, and Muddy Mountains HMAs were sufficiently impacted to trigger an emergency gather of horses. The trend studies were not completed because the control exclosures required to compare with the impacted areas were not constructed. BLM will provide the funding for these exclosures. The recent plant surveys have expanded our knowledge on the distribution and relative abundance of four MSHCP plant species. A total of 150,000 acres were surveyed in White Basin, Bitter Spring Valley, and Las Vegas. Five populations of Las Vegas Buckwheat were mapped. Approximately 6,600 plants were documented in those populations. The total area in which the buckwheat occurs is approximately 250 acres. One population each of both sub-species of two-toned penstemon was found in the Las Vegas Valley. The Las Vegas Field Office collected seed from five special status plant species. BLM expended almost all of the Plant Monitoring/Inventory PLMA funds on the plant inventories alone. Utilization studies were performed largely with BLM funding.

Partners
None

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$90,000

Funding Spent
$90,000

Completion Date or Status
Utilization and plant surveys were completed. When the monitoring exclosures are constructed in 2003-2004, trend studies will be initiated and paid for with BLM funding.

Documents/Products
GIS coverage of plant surveys
GIS coverage of forage utilization for Jean Lake

BUREAU OF LAND MANAGEMENT

Featured Project
Ecological Inventory of the
Spring Mountain Ecosystem

Project Description
The expanded ecological assessment totals 930,000 acres, including all of the Spring Mountains National Recreation Area (330,000 acres) and 600,000 acres of adjacent BLM lands. BLM and USDA-FS worked together to merge two ecological assessment methodologies and establish a standard protocol.

Typical blackbrush site on BLM and USDA-FS Lands

Project Status
Thirty plots on BLM lands, representing 200,000 acres, were selected for vegetation and production data collection. Of these, seven were adjacent to established soil pits. NRCS completed 80,000 acres of Order 3 soil survey on FS lands. Field crews completed 19 plots so far, and will complete all 30 by December 2003. The crew will also complete at least 20 sites on FS lands. An Access database was constructed to hold the data for the survey. This project will continue over the next two years to assess a total of 933,000 acres.

Typical creosote-bursage site on BLM land.

Partners
Natural Resources Conservation Service
U.S. Geological Survey, Biological Resources Division
USDA-FS, Spring Mountains National Recreation Area
NDOW

Project Contact
Jim Hurja, USDA-FS, Spring Mountain National Recreation Area
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$325,000

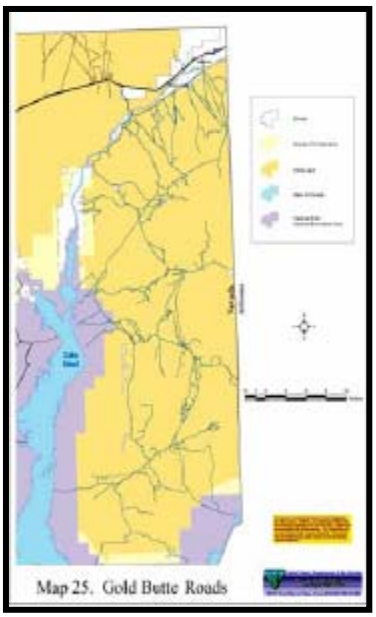
Funding Spent
$325,000

Completion Date or Status
BLM requested and was granted a change in scope of work to reflect the expanded project and a no-cost extension for Phase I to December 31, 2003 to accommodate vegetation and production data collection and data entry.

Documents/Products Produced
GIS coverage of soil pit sites
GIS coverage of vegetation plot sites

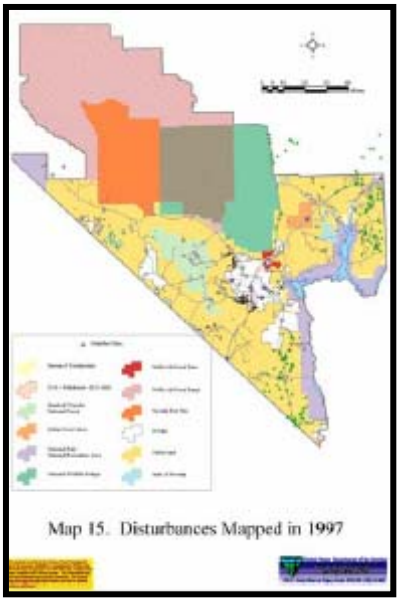
BUREAU OF LAND MANAGEMENT

Featured Project
Monitoring and GIS


Map 25. Gold Butte Roads

Project Description
BLM will track all surface disturbances (including wildfire) and projects proposed or constructed in Desert Tortoise ACECs through the use of GIS. All on-the-ground activities will be digitized from maps or GPS data. This will enable monitoring as to whether tortoise habitat are improving and continuing to be degraded. All other data elements such as designated roads and trails will also be monitored. BLM will provide digitized maps to other federal and state resource management agencies and institutions as may be needed from time to time. All other resource data such as wild horse and burro monitoring data; spring location and condition; ESI data; and any data that will be useful to the MSHCP Adaptive Management Program will be digitized on GIS. This effort will also cover USDA-FS needs at the same level. All pertinent information will be transferred to the UNR-BRRC.

Project Status
The GIS contractor supported all MSHCP-related projects, assisted PIC in mapping roads in Gold Butte, and continued to provide support for documenting disturbance in critical desert tortoise habitat.


Map 15. Disturbances Mapped in 1997

Partners
PIC and the rural communities

Project Contact
Gayle Marrs-Smith, BLM Las Vegas Field Office

Funding Awarded
$250,000

Funding Spent
$250,000

Completion Date or Status
Completed

Documents/ Products Produced
GIS coverage of roads in Gold Butte

NATIONAL PARK SERVICE

Featured Project
Rare Plant Inventory and Monitoring, Alien Plant Inventory

Project Description
This project has four major components: 1) the ongoing mapping of the Las Vegas Bearpoppy in Lake Mead NRA; 2) monitoring of three MSHCP covered plant species listed as Critically Endangered by the state of Nevada; 3) inventory of other rare plants of interest to Clark County MSHCP; and 4) mapping of alien invasive plants in Lake Mead NRA.

Project Status
After an extreme drought year of 2002, the spring of 2003 was a good year for inventory and monitoring. The Sandy Cove dunes were surveyed and mapped for Threecorner milkvetch (*Astragalus geyeri var. triquetrus*) and the survey for Sticky buckwheat (*Eriogonum viscidulum*) was implemented. Seven transects for Las Vegas bearpoppy (*Arctomecon californica*) were monitored and a new transect at Stewart's Point was set up. A survey for the Virgin River thistle (*Cirsium virginensis*) in Lake Mead NRA was completed, and a survey of the Black Mountains, Lake Mead NRA, Clark County, started. A list of rare and sensitive plants of Lake Mead NRA was prepared. Alien plants were a major focus, and over 500,000 Sahara mustard (*Brassica tournefortii*) plants from Lake Mead NRA were mapped and removed. A series of tests and experiments were begun on Sahara mustard. These tests and observations revealed abundant information about this highly invasive alien plant that will be useful for control work in the future.

Cirsium virginensis

Partners
BLM
North Las Vegas Airport
Nellis Air Force Base
UNLV

Las Vegas bearpoppy

Project Contact
Elizabeth Powell, NPS, Lake Mead National Recreation Area

Funding Awarded
$161,000

Funding Spent
$161,000

Completion Date or Status
Although some projects are ongoing in nature, all projects have final reports submitted.

Documents Produced
Bangle, Dianne. 2003. Checklist of Vascular Plants of the Black Mountains, Lake Mead National Recreation Area, Clark County, Nevada and Plant Collection Data. Unpublished Manuscript. 10 pages.
Bangle, Dianne. 2003. Status Report for Virgin River Thistle (*Cirsium virginensis*) in Lake Mead National Recreation Area. Unpublished Manuscript. 16 pages.
Powell, E. 2003. List of Rare and Uncommon Native Plants of Lake Mead National Recreation Area. Unpublished document. 10 pages.
Powell, E. 2002. Las Vegas Bearpoppy Transect Monitoring Data for Year 2002. Unpublished manuscript. 2 pages.
Powell, E. 2003. Summary of Las Vegas Bearpoppy Transect Monitoring Data - Year 2003. Unpublished manuscript. 3 pages.
Powell, E. 2003. Report on Sticky Buckwheat (*Eriogonum viscidulum*) Monitoring, 2003, Lake Mead National Recreation Area. Unpublished manuscript. 10 pages.
Powell, E. 2003. Report on 2003 Monitoring of Threecorner Milkvetch (*Astragalus geyeri var. triquetrus*) on Sandy Cove, Lake Mead National Recreation Area. Unpublished manuscript. 10 pages.
Powell, E. 2003. A Comparison of Soil and Locations of Las Vegas Bearpoppy Populations at Lake Mead National Recreation Area. Unpublished manuscript. 9 pages.

NATIONAL PARK SERVICE

Featured Project
Wildlife Surveys and Monitoring

Project Description
As part of the wildlife management program at Lake Mead National Recreation Area, NPS biologists conducted surveys and monitoring for birds, bats, desert tortoises, relict leopard frogs, and other amphibians. For birds, management included annual counts of wintering bald eagles, surveys for southwestern willow flycatchers, monitoring of peregrine falcon nesting sites, and operation of a banding station as part of the nationwide Monitoring Avian Productivity and Survivorship (MAPS) program. For bats, activities included conducting inventories in selected areas, monitoring known populations of rare species, and installing bat gates to protect at-risk habitats. For the desert tortoise, biologists monitored two square-kilometer study plots each year. For amphibians, biologists monitored populations of the relict leopard frog and its habitat and conducted surveys for this species and other amphibians at springs throughout the park.

Project Status
Wintering bald eagle counts occurred in January of each year of the biennium. In 2002, 79 bald eagles were counted, the highest number ever recorded in the Park. In 2003, 68 bald eagles were counted, a total second only to that of the previous year. Surveys for southwestern willow flycatchers were conducted on the Virgin River and at the Overton Wildlife Management Area (OWMA). Migrating individuals were detected on the Virgin River in 2002, but there was no evidence of nesting at the survey site. No willow flycatchers were detected at OWMA. Although the species has been known to breed at this site in the past, the area was damaged by fire in 2001, and most of the suitable habitat was eliminated. Ten known peregrine falcon nesting sites (five on Lake Mohave, four on Lake Mead, and one in the River Mountains) were monitored in 2002. Seven of these sites were found to be occupied. Pairs were seen at three sites, while single individuals were observed at the other four. In 2003, eight of these ten sites were found to be occupied. Pairs were seen at six, and single individuals at the other two. In addition, two new nesting pairs were found on Lake Mead in 2003. The MAPS banding station was moved to the northern end of the park just west of the Virgin River after the original site was destroyed by fire in 2001. In 2002, 101 birds representing 21 different species were captured. In 2003, the number of captures dropped to 61 and included 18 different species. Covered species captured at this banding station include blue grosbeak, Bell's vireo, and willow flycatcher.

Biologists monitored tortoises on the River Mountains Plot and the Government Wash Plot in 2002, and on the Bitter Springs Plot and Road 58 Plot in 2003. Eleven tortoises were found on the River Mountains Plot, nine of which were handled and marked. Five of these were new captures while the others were recaptures of tortoises marked in previous years. No live tortoises were found on the Government Wash Plot, although four had been marked on this plot in previous years. Ten tortoises were found on the Bitter Springs Plot, one of which was a recapture from a previous year. Eight tortoises were found on the Road 58 Plot, one of which was a recapture from a previous year. Locations of tortoises, burrows, and shell remains were recorded with GPS and entered into the park's GIS. Four bat gates were installed at the Copper Mountain Mine Group to prevent disturbance to habitat by uncontrolled human access. Surveys for bats were conducted at the Copper Mountain Mine Group, Homestake Mine, Katherine Access Mine, Reid Tunnel, Rogers Spring, Joker Mine, Empire Mine, Dangl Mine, and Dupont Mine complex. California leaf-nosed bats were found at the Homestake Mine, Katherine Access Mine, Reid Tunnel, and Dupont Mine complex. Yuma myotis were found in Joker Mine and Empire Mine. No bats were present in the Dangl Mine at the time of survey. Surveys for relict leopard frogs and other amphibians were conducted at Blue Point Spring, Rogers Spring, Corral Spring, Gnatcatcher Spring, and Bighorn Spring.

Partners
University of Nevada Las Vegas
NDOW
Arizona Game and Fish Department
Institute for Bird Populations

Project Contacts
Ross Haley, Lake Mead NRA
Mike Boyles, Lake Mead NRA

Funding Awarded
$287,180

Funding Spent
$215,382

Bat gate installed at Copper Mountain Mine

Completion Date or Status
Although many of the projects are ongoing in nature, all obligations associated with the 2001-2003 biennium have been completed.

Documents Produced

Boyles, Mike. 2002. Monitoring avian productivity and survivorship at Lake Mead National Recreation Area. Great Basin Birds 5:51-54.

NATIONAL PARK SERVICE

Featured Project
Data Collection and Analysis for MSHCP Development

Project Description
The Lake Mead NRA GIS office was expanded with the addition of a GIS technician and new equipment. GIS base and resource data sets were updated, reprojected, and documented. New data collection and management procedures were developed.

Project Status/Accomplishments
Approximately 60 percent of base GIS and 40 percent of resource GIS data sets have been updated and documented for the 2001-2003 biennium. New data management and data quality procedures have been implemented. Data collection and management has been improved. Numerous maps have been produced for data presentation and public outreach.

Partners
Harry Reid Center for Environmental Studies, University of Nevada, Las Vegas.

Project Contact
Mark Sappington and Kent Turner, NPS, Lake Mead National Recreation Area

Funding Awarded
$115, 048

Funding Spent
$86,286

Completion Date or Status
Work will continue into the 2003-2005 biennium with the updating and documenting of the remaining GIS base and resource data sets along with new data mining efforts of historical data and conversion of this legacy data to electronic formats.

Documents/Products Produced
Over 200 maps were produced for planning, resource monitoring, disturbance assessment, resource management, public outreach, and law enforcement. In addition, the GIS technicians assisted with the preparation of the Draft GIS Data Management Plan for Lake Mead National Recreation Area (Sappington 2003).

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

Featured Project
Interpretation/Environmental Education Program

Project Description
This project assisted the NRA staff to initiate a program providing information to new and repeat visitors about recreating in the Spring Mountains NRA, and activities in which to participate during their visit. Informational kiosks were placed in three locations including the Mt. Charleston Hotel, Mt. Charleston Lodge, and the Las Vegas Ski and Snowboard Resort.

Kiosk at Mt. Charleston Lodge

Project Status
Work completed included preparing the project plan, installing several information signs, finalizing five trail brochures, and an education page in the Southern Nevada Almanac published.

Partners
This project was worked in partnership with the MSHCP Public Information and Education Working Group plus the three other land-managing federal agencies.

Project Contact
Robbie McAboy, Recreation Officer, (702) 515-5403

Funding Awarded
$50,000

Funding Spent
$24,963

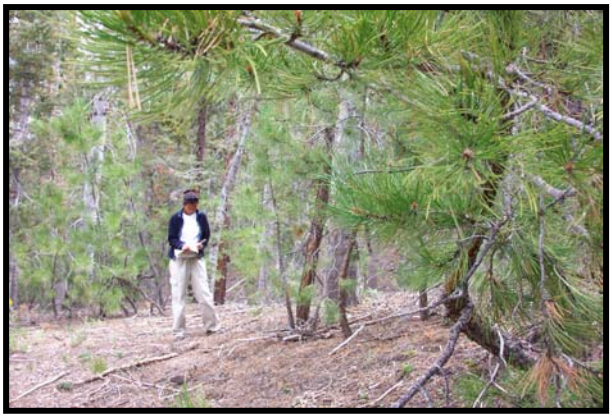
Completion Date or Status
Completed

Documents/Products Produced
Brochures for Bonanza Trail, Cathedral Rock, Trail Canyon Trail, Robbers' Roost Trail, and Griffith Peak Trail.

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

Featured Project
Inventory and Monitoring Species of Concern

Project Description
This was an MSHCP development project providing inventory and monitoring per the MSHCP EIS Conservation Action Item USFS (23-36), which prescribes monitoring of numerous species of concern and their habitat to provide information for the development of Clark County's MSHCP Adaptive Management Plan and to provide the federal land manager with science-based information.



Joan Lai, Nevada Conservation Corps, Surveys for Rough Angelica

Project Status
The project included monitoring for rare plants at 49 sites within the Spring Mountains NRA, incorporating habitat within approximately 25,000 acres of the NRA. Numerous new populations were discovered and documented. Long-term trend monitoring for Clokey Eggvetch and Rough Angelica was completed, utilizing protocols developed by the USFWS.

Part of the monitoring included high-elevation plant communities where alpine habitat was completed during 2001 and bristlecone habitat during 2002. Spring-fed high-elevation habitat monitoring was conducted in 2003.

Partners
There were many partners working with the Forest Service staff throughout the development and implementation of this project including USFWS, NDOW, TNC, University of Nevada, Las Vegas, Nevada Conservation Corps, and others. Botrychium surveys and inventory within the Spring Mountains NRA were conducted by Dr. Donald Farrar, Iowa State University.

Project Contact
Heather Hundt, Wildlife Biologist, (702) 515-5421

Funding Awarded
$90,000

Funding Spent
$45,666

Completion Date or Status
Completed

Documents/Products Produced
Progress Report, Clokey eggvetch monitoring, Spring Mountains NRA, May 9, 2003
2003 USFS Rare and Sensitive Floristic Surveys in the SMNRA
Progress Report, High-Elevation Plant Community Monitoring in the Spring Mountains NRA, March 25, 2003
Butterfly Investigations in the Spring Mountains, Nevada, 2001

Matt Flores, Nevada Conservation Corps, admires one of the many butterfly species in the Spring Mountains

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

Featured Project
Inventory and Monitoring Recreation Use

Project Description
This project was intended to provide recreation expertise to mitigate impacts of take as outlined in the Clark County MSHCP. The project was to provide inventory and monitoring of the impacts of recreational uses on the species of concern on a consistent basis.

Project Status
A volunteer wilderness ranger program was organized and several off-duty Las Vegas Metropolitan Police Department police officers volunteered and patrolled wilderness areas. An inventory protocol was developed to map dispersed campsites, forming a baseline from which to monitor recreational impacts.

Several long-term projects were initiated using funds provided through this agreement. Over the past two years, valuable baseline data has been collected which will allow the Forest Service to more actively monitor use in the Spring Mountains National Recreation Area. Integrating release of information about these resource protection projects has been the environmental education and interpretation initiative. A public relations expert was contracted who developed a program plan helping managers prioritize requirements. Implementation of the plan started with information kiosks located in facilities in the NRA, plus an education page advocating gentle resource use and signs providing visitors information about which plants and animals are sensitive and suggesting behaviors to help endemic species survive. Education and information will continue to flow from the Spring Mountains NRA staff to people using the forest.

Partners
BLM
Volunteers

Project Contact
Robbie McAboy, Recreation Officer, (702) 515-5403

Funding Awarded
$162,670

Funding Spent
$86,735

Completion Date or Status
Complete

Documents/Products Produced
Spring Mountains National Recreation Area, Dispersed Concentrated Use Area Monitoring Action Plan – Phase 1

U. S. FISH AND WILDLIFE SERVICE

Featured Project
Upper Muddy River Restoration and Land Management Plan

Project Description
This project was combined with the Muddy River Watershed Assessment project being conducted by TNC.

Project Status
Not applicable

Partners
Not applicable

Project Contact
Not applicable

Funding Awarded
$76,616

Funding Spent
$0

Completion Date/Status
Not applicable

Documents/Products Produced
Not applicable

U. S. FISH AND WILDLIFE SERVICE

Featured Project
Desert NWR Plant Community

Project Description
This project was neither initiated nor completed.

Project Status
Not applicable

Partners
Not applicable

Project Contact
Not applicable

Funding Awarded
$50,000

Funding Spent
$0

Completion Date/Status
Not applicable

Documents/Products Produced
Not applicable

THE NATURE CONSERVANCY

Featured Project
Muddy River Watershed Assessment

Project Description
This project consists of developing and writing a comprehensive Muddy River watershed assessment that will address restoration and land management issues on the Moapa Valley National Wildlife Refuge and elsewhere on the Muddy River.

Project Status
The start of this project was delayed due to contractual issues between Clark County and TNC. The project kicked off in May 2002 with a public workshop. The project is currently focused on completing a geomorphic assessment. Once completed, TNC will hold a second public workshop and develop an integrated science plan.

Partners
USFWS

Project Contact
Louis Provencher, TNC

Funding Awarded
$260,820

Funding Spent
$46,027

Completion Date/Status
Extended through June 30, 2005

Documents/Products Produced
Quarterly reports

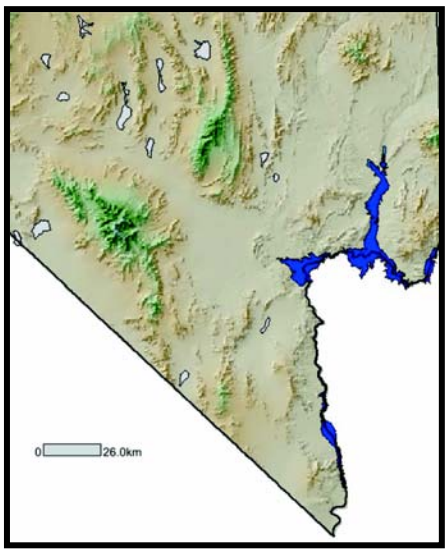
UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Spatial Analyis, Database and GIS

Project Description

The goal of this project is to create a functional digital database of biological resources and their locations in Clark County. The BRRC is developing a consolidated database that can be queried by request (for sensitive data) and queried over the web (for general distribution, management, and planning data). To the extent possible, all data are put into GIS format for visual effectiveness and GIS analyses. The AMP database and associated spatial analyses provide a scientific basis for decision making, elevating decisions from guesses and politically motivated prescriptions to decisions influenced by objective criteria. This project was also assigned responsibility for the technical aspects of implementation monitoring or keeping track of the implementation of projects conducted as part of the MSHCP. The SADG lab is responsible for managing an electronic database of the implementation data that is accessible via the world-wide web. The database is being made as user friendly as possible, including reports useful to the IMC, agencies, the County, scientists, and the public.

Project Status



The BRRC has established a lab that serves the common needs of agency personnel and scientists working on MSHCP projects as well as County personnel. This common facility allows close collaboration and cross-pollination of data, analyses, and ideas. This facility has been critically important to the spatial analysis project, the indicators project, and the biological evaluation of habitat associated with the rural roads project, as well as other projects conducted under the MSHCP. This lab has been furnished to house all sophisticated equipment necessary to conduct GIS analyses. Pertinent information from agencies will be archived at this site so that any agency or scientist can "crosswalk" data from several sources. The BRRC

has a commitment from the USFWS that when their agency moves to new office facilities, their formula for office space needs will include the needs of the BRRC.

Progress on the Implementation Monitoring project is ongoing. This project is necessarily a product of contributions from the BRRC and the SADG project, and with the Clark County managers of the MSHCP. The skeleton of the database, and its interface to the internet, is complete, but it is constantly evolving according to the needs of the County, USFWS, and the IMC.

Partners
Clark County
All land-management agencies

Project Contact
C. Richard Tracy, BRRC

Funding Awarded
$272,171

Funding Spent
Not tracked per project

Completion Date or Status
Completed; ongoing at the direction of the IMC

Documents Produced
Numerous maps, a list of which is available from UNR-BRRC GIS

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Indicators*

Project Description

Project Status

Partners

Project Contact

Funding Awarded
$680,000

Funding Spent
Not tracked per project

Completion Date or Status

Documents Produced

* The Clark County Desert Conservation Program did not receive a report from the Biological Resources Research Center on the status of this report. Please contact Dr. Richard Tracy at (775) 784-1925 for more information regarding this project.

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Biological Basis for Rural Road Management

Project Description

There have been both adverse and positive biological effects hypothesized as a result of roads, but there has been little systematic research in the ecosystems present in Clark County that support any such hypotheses. Available data and analysis are not sufficient to support management actions. This ongoing component of the AMP is attempting to evaluate the biological effects of roads, and to relate those effects to the degree of use and condition of the roads studied and the species of plants and wildlife present. Evaluation of potential negative biological impacts caused by roads must be balanced by the positive social and economic value of roads. If the roads can be categorized according to their impacts on biota, they can be evaluated for management (e.g., closure and rehabilitation, fencing, managed as recreation roads, etc.) in attempts to balance biological and human costs and benefits. The BRRC will be responsible for providing biological data that can be used by the IMC and management agencies in making decisions on rural roads management.

Project Status

This project partially overlaps with indicator species activities in scope and approach. Roads provide a quantifiable disturbance gradient. Indicator species topics - such as sampling schedules, methods, vegetation sampling methods, site characterization, and definition of the disturbance gradient and experimental variables - apply directly to work on evaluation of rural roads issues. Clark County has based a significant portion of its mitigation for take of tortoises on private lands on this finding and has undertaken an aggressive program to retrofit highway range fences with tortoise barriers. As part of the AMP, we have conducted a review

and analysis of existing data and studies on road impacts on tortoises. The work to be done during the two biennia represents only the essential first steps of this component, including mapping roads, mapping vegetation with respect to roads, evaluating intensity of use of selected roads, gathering data on microclimate and edaphic effects of roads, and review of existing data. It also includes monitoring tortoise fencing and developing a database on problem locations for fence maintenance.

Partners
CCSN
USFWS

Project Contact
C. Richard Tracy
Ron Marlow

Funding Awarded
$ 520,000

Funding Spent
Not tracked per project

Completion Date or Status
Completed with the exception of completing analyses for publication.

Documents Produced
Manuscripts are currently being prepared for publication

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Working Groups/Workshops

Project Description
The need for exchange of technical information among MSHCP participants has been clear since the plan's inception. Workshops were initially convened focusing on key species groups, including amphibians, bats, birds, and butterflies, and key habitats and other geographic areas, including springs and seeps, the Spring Mountains, and the Muddy River. Attempts to engage the cross-cutting challenge of weed eradication led Clark County to shift from informing the HCP with workshops to establishing ongoing working groups.

Project Status
The BRRC initiated weeds and springs working groups, with leadership transferred subsequently to the University of Nevada Cooperative Extension, and Southern Nevada Water Authority/Desert Research Institute, respectively. The BRRC with USFWS encouraged an ongoing rare plant group to become an MSHCP working group, and both have hosted meetings of researchers working on the Muddy River. Working groups on birds, relict frog, roads, and law enforcement are consistently attended by BRRC personnel. Participants in all the above working groups have sought or are seeking required scientific input from the UNR-BRRC on next biennium proposals that require technical amendment.

Partners
All Agencies
USFWS

Project Contact
Dennis Murphy, BRRC

Funding Awarded
$ 40,000

Funding Spent
Not tracked per project

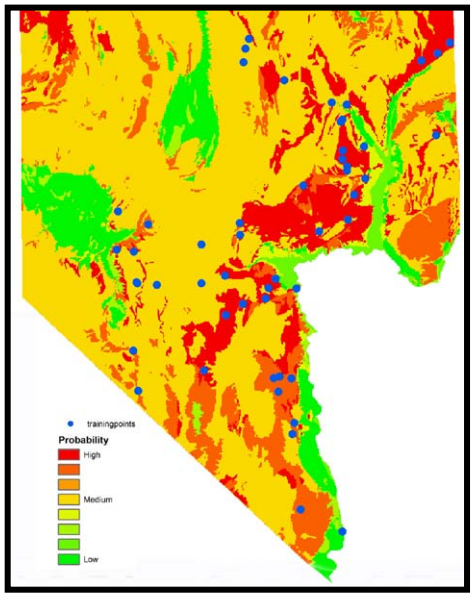
Completion Date or Status
Completed

Documents Produced
Several web documents on the UNR-BRRC website

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Individual Species

Project Description
The MSHCP on Covered Species collated the current knowledge basis for the plan. Of course, that knowledge base was not entirely complete, but the plan was to expand the knowledge base as part of the process. The Plan has also set as one of its goals the continual reassessment of Evaluation and Watch List species to provide conservation benefits to as many species as require them. Students from the University of Nevada and experts have been surveying the published literature, unpublished reports, field notes of experts, museum records, and the collective knowledge of experts or other sources and prepared status reports for evaluation species and other species of concern. Additionally, the MSHCP has as a stated goal to gain the necessary knowledge to change the status of some species from "Evaluation" or "Watch list" to "Covered." The BRRC has been studying one of the most sensitive and secretive species in Clark County to assess what would be necessary to elevate the Gila monster to "Covered" status.



Project Status
The BRRC has developed several supporting reference databases containing in excess of 1,800 documents (published and gray literature) for species listed in the MSHCP. More than 1,000 of those documents are for the desert tortoise. The database has a live search engine, and can be searched by Author, Year, Title, Journal, Scientific name, and Taxon. The literature was originally compiled in Endnote databases, while the development of the references database was underway. The database is now completed and online, and the Endnote databases are in the process of conversion to the online format. The BRRC has developed a prototype of a location database that will be used to identify the geographic location of each

project in the 2003 biennium. The database consists of an interactive "clickable" map that will enable each user to specify the location of their project county-wide. In addition to the location the maps also have an underlying land-ownership database wherein the associated landowners can be selected from a known list for each geographic region. This location format was designed to be compatible with the "BRRC biodiversity atlas" (available online at http://www.brrc.unr.edu/) which is a live interactive mapping database running in ArcIMS. This will allow eventual live mapping of the MSHCP database information.

For Gila monster, the UNR-BRRC has developed a GIS-based habitat suitability model. The UNR-BRRC has completed a radio-tracking study of Gila monsters in state park property in Clark County. This project has located more Gila monsters than any single study previously in Nevada history. The UNR-BRRC has assessed the extent to which Gila monsters move about in their environments, and we know what features are required in Gila monster habitat. The UNR-BRRC knows home-range sizes, and what is required for thermal refuge. In short, the UNR-BRRC now knows what is needed in a Gila monster conservation strategy.

Partners
Valley of Fire State Park

Project Contact
C. Richard Tracy, UNR-BRRC

Funding Awarded
$79,999

Funding Spent
Not tracked per project

Completion Date or Status
Ongoing at direction of USFWS

Documents Produced
Modeling monster habitat: Using GIS to predict *Heloderma suspectum*. Annual meetings of the Society for Integrative and Comparative Biology, Toronto, ON, Canada, 2003.

Geographic variation in the Gila monster, *Heloderma suspectum*. Annual meetings of the Society for Integrative and Comparative Biology, Anaheim, CA, 2002.

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Muddy River

Project Description
In an effort to inform a more effective program of tamarisk eradication and riparian ecosystem rehabilitation, data on the distribution and abundance of native plants, birds, and butterflies are gathered. Areas dominated by native riparian vegetation, areas of mixed native vegetation and tamarisk, and monocultures of tamarisk are assessed for plant and animal richness and diversity. The goal of the effort is to describe a weed eradication and ecosystem restoration strategy at spatial and temporal scales appropriate to sustain current biodiversity on the Muddy River and enhance it over time.

Project Status
The project is completed. From May 2000 through September 2002 (30 months, including both wet and dry periods), butterflies were sampled twice monthly at 85 sites. In May and June 2001, birds were sampled repeatedly at 33 sites. Vegetation was characterized in the spring and summer of 2001. Species richness of plants and availability of nectar had strong effects on species richness of resident butterflies. Volume of vegetation had a strong effect on species richness of birds (breeding birds and all species of birds). Species composition of both butterflies and birds among sites

was more similar when species composition of plants was more similar. Areas of high native plant richness often had significant invasion by tamarisk. Results strongly suggest that eradication efforts be circumscribed in areas, be carried out using means that serve to maximize retention of native vegetation, and be followed immediately with outplanting of replacement vegetation.

Partners
Great Basin Bird Observatory
Monash University (Melbourne, Australia)
Nevada State Museum
Community College of Southern Nevada
Stanford University

Project Contact
Dennis Murphy, University of Nevada

Funding Awarded
$ 170, 401

Funding Spent
Not tracked per project

Completion Date or Status
Completed

Documents Produced
Fleishman, E., D.D. Murphy, T. Floyd, N. McDonal, and J. Walters. 2002. Characterization of riparian bird communities in a Mojave Desert watershed. Great Basin Birds 5:38–44.

Fleishman, E., N. McDonal, R. Mac Nally, D.D. Murphy, J. Walters, and T. Floyd. 2003. Effects of floristics, physiognomy, and non-native vegetation on riparian bird communities in a Mojave Desert watershed. Journal of Animal Ecology 72:484–490.

Fleishman, E., R. Mac Nally, and D.D. Murphy. In review. Relationships between non-native plants, diversity of plants and butterflies, and adequacy of spatial sampling. Biological Journal of the Linnean Society.

Mac Nally, R., E. Fleishman, and D.D. Murphy. In review. Influence of temporal scale of sampling on detection of relationships between invasive plants, plant diversity, and butterfly diversity. Conservation Biology.

Austin, G.T., B. Boyd, and D.D. Murphy. Unpublished ms. Evaluation of the butterfly fauna on the Muddy River: spatial and temporal patterns in a desert riparian community.

Fleishman, E., D.D. Murphy, D. Sada, and J. Nachlinger. Unpublished ms. Nestedness of terrestrial and aquatic species in a desert riparian community in response to vegetation and climatic trends.

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Red Rocks to the Summit (RRTTS)

Project Description

The project develops an explicit information base upon which prioritization of spring and spring-fed riparian zone management and restoration actions can be based. Information on species richness and abundance of native and non-native plants, butterflies, and benthic invertebrates is gathered from subsets of previously catalogued and evaluated springs. Data on resource use by feral equids are collected. Relationships among physical characteristics, levels of disturbance (both resulting from natural processes and feral equids), and native and invasive species will be assessed. Outcomes will assist planners in replacing the current ad hoc selection of springs for management action with a better guide to spring selection and application of best management practices.

Project Status

Data have been gathered for plants, butterflies and benthic invertebrates. Preliminary assessments of patterns of spring use by horses have been conducted. The new data, along with previously generated data sets, are being analyzed to identify distribution patterns of native and non-native plants at select springs in the Spring Mountains. Nestedness analyses are being carried out to establish whether native or non-native species exhibit predictable presence/ absence patterns, which can be used to rank springs for prioritized management attention. The relationship between plant and animal species richness is being

analyzed in an effort to assess the impacts on spring communities from invasive plant species. A spring condition assessment tool, which relies on limited ecological information, is being developed. Results from these analyses will be available before the end of the year.

Partners
Desert Research Institute
Mills College
Nevada State Museum and Historical Society
Stanford University
TNC
BLM
USDA-FS

Project Contact
Dennis Murphy, BRRC

Funding Awarded
$ 300,000

Funding Spent
Not tracked per project

Completion Date or Status
Ongoing

Documents Produced
Sada, D., E. Fleishman, J. Nachlinger, and D.D. Murphy. Unpublished manuscript. Metrics of ecological condition in desert riparian communities and their application to land-use planning.

Austin, G.T., B. Boyd, E. Fleishman, and D.D. Murphy. Unpublished manuscript. Obligate and facultative use of springs by resident and migratory butterflies in an isolated Mojave Desert mountain range.

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Marginal Species

Project Description

This project was developed in response to a direct request for help from BLM. BLM is responsible for managing various mesquite and catclaw woodlands and the birds that use them, particularly phainopepla, which is a Covered Species under the Plan. Several species included in the Plan as Covered or Evaluation Species (e.g., phainopepla, summer tanager, blue grosbeak, Arizona Bell's vireo) are highly vagile, and they are also at the margins of their geographic distributions. Definition of success for conservation actions may be elusive for these species. Investigation is necessary to define what can be expected as a best response to conservation actions for these marginal species.

The BRRC has used the phainopepla as a model for definition of these difficult species. Phainopeplas are not present on BLM lands in the Las Vegas District in all years. Additionally, this species depends upon mistletoe berries for food, and mistletoe fruiting is a phenomenon that varies from year to year and place to place due to natural conditions. Currently, this variability confounds understanding of the effects of management actions.

Project Status
The BRRC has learned that Phainopeplas use the majority of sites infected with mistletoe for at least a short time period in most years. Each year, some sites are used only in the winter, while others are used mostly in the spring. Phainopepla occupancy and abundance are positively correlated with mistletoe production, and to some degree, the presence of large riparian trees. The correlation with mistletoe may help explain why in some years, phainopeplas are more abundant in the area south of Las Vegas. Breeding success is variable among sites and years, and may not be entirely predicted by berry abundance. Breeding success in catclaw acacia sites may be more variable than in mesquite sites. While phainopeplas' occupancy of a site during the breeding season may depend on mistletoe production (and perhaps past breeding success), the clutch size, number of nests/pair, and fledging success appear to be influenced also by spring weather and predation intensity, among other factors. In many instances, phainopeplas had better breeding success in a given site in years when the density was low than when it was high. The temporal and spatial variability in phainopepla abundance and breeding success indicate that phainopepla management plans and actions cannot focus solely on a few sites, but must encompass a wide range of mistletoe-infected catclaw acacia and mesquite sites throughout Clark County and neighboring counties. These plans must also incorporate the possibility that over the longer term, the spatial distribution of mistletoe could change considerably.

Partners
USGS
USFWS
BLM

Project Contact
C. Richard Tracy, BRRC

Funding Awarded
$ 89,999

Funding Spent
Not tracked per project

Completion Date or Status
Complete except for preparing manuscripts

Documents Produced
None to date

UNIVERSITY OF NEVADA, RENO - BIOLOGICAL RESOURCES RESEARCH CENTER

Featured Project
Tortoise Monitoring

Project Description
The project is a continuation of the desert tortoise monitoring research program, and is an implementation of the USFWS's desert tortoise monitoring program. This project implements the desert tortoise monitoring protocol developed by UNR-BRRC, the researchers (David Anderson and Ken Burnham) at the USGS Cooperative Research Unit at Colorado State University, and a former USGS collaborator (Phil Medica) using the program, DISTANCE. The protocol was developed by UNR-BRRC and adopted by the Management Oversight Group Technical Advisory Committee (MOG-TAC) and the USFWS Desert Tortoise Coordination Office.

Project Status

Rangewide desert tortoise density monitoring began in the spring of 2001. The Clark County monitoring effort began in 1995 with research into monitoring efficacy. A workshop to train, calibrate and assess tortoise-monitoring field workers was held in Las Vegas in March 2001 and again in 2002 and 2003. Tortoise monitoring efforts were evaluated in September and October of 2001, 2002 and 2003. Critical evaluation of monitoring results and experiments to improve monitoring techniques were incorporated into the subsequent years training and monitoring protocols. This project (monitoring, research on monitoring efficacy and training of range-wide monitoring field personnel) is continuing

Partners
USGS
USFWS
University of Redlands

Project Contact
Ron Marlow, BRRC

Funding Awarded
$609,500

Funding Spent
Not tracked per project

Completion Date or Status
Ongoing at direction of FWS

Documents Produced
Anderson, D.R. , K. P. Burnham, B.C. Lubow, l. Thomas, P.S. Corn, P.A. Medica, and R.W. Marlow. 2001. Field trials of the line distance method applied to estimation of desert tortoise abundance. Journal of Wildlife Management 65(3):583-597.

LAND DISTURBANCE AND FINANCIAL SUMMARY

Land Disturbance

In cooperation with the cities of Henderson, North Las Vegas, Boulder City, Mesquite and the Nevada Department of Transportation, Clark County tracks land disturbance through permitting processes within each entity's jurisdiction. In summary, 18,900 acres were disturbed from February 1, 2001 (the effective date of the MSHCP) through June 30, 2003, which is slightly over what was projected during the subject time period (see Land Disturbance Report on page 110 for detail).

Fees and Sources of Funds

Clark County has been designated as the administrator of the DCP and of the funds received from various sources on behalf of itself, the cities located within Clark County, and the Nevada Department of Transportation.

The conservation activities described and reported herein were funded through three funding sources. Funds are generated from mitigation fees paid to Clark County for disturbance of non-federal lands and are referred to as Section 10 funds. Funds are also generated from remuneration fees required by federal agencies. These fees are paid to Clark County for disturbance of desert tortoise habitat located on federal lands and are referred to as Section 7 funds. Funds paid to Clark County at the direction of the Secretary of Interior and pursuant to the provisions of the Southern Nevada Public Lands Management Act of 1998 are generated from the sale of lands within Clark County that are managed by the BLM.

In summary, during the 2001 – 2003 biennium, Clark County generated $13,130,627 from the collection of mitigation fees and accrued interest on Section 10 funds. Clark County collected $3,363,102 in mitigation fees for Section 7 funds and Clark County was awarded $4,648,334 in PLMA funds.

Expenditure of Funds

Section 10 funds are used for administration of the DCP and for implementation projects based upon the recommendations of the IMC and are approved by the Clark County Board of Commissioners BCC) and the USFWS. Section 7 funds are used specifically for desert tortoise projects at the sole direction of the USFWS. PLMA funds are used for MSHCP development projects as recommended by the IMC, the BCC and the USFWS and as approved by the PLMA Executive Committee and the Secretary of the Interior.

In summary, Clark County expended a total of $5,620,769 in Section 10 funds administering and implementing the DCP in the subject biennium. Of that total, $4,428,813 was spent on professional services contracts with partner agencies and contractors to implement conservation actions in Clark County and $1,191,965 was spent on administration of the DCP.

Clark County expended $1,312,030 in Section 7 funds. Of that total, 1,262,226 was spent on professional services contracts for the protection of desert tortoise

as directed by the USFWS, $39,465 was spent on refunds, and $10,338 was spent on investment expenses.

Clark County expended $2,663,846 on PLMA projects. Of that total, all of the funds were spent on professional services contracts for projects that contribute to the development of the MSHCP.

Required Section 10 Expenditures

Clark County's Adjusted Required Expenditures for the 2001 – 2003 biennium was $4,265,400. Clark County does not receive conservation credit for professional services contracts with the firms Selzer, Ealy, Hemphill and Blasdel, LLC or Budd-Falen Law Offices. Subtracting the non-credit expenditures, Clark County spent $2,695,373 in Section 10 funds to administer and implement the DCP in 2001-2002 and $2,555,018 in 2002 - 2003.

The total Section 10 expenditures for which Clark County receives conservation credit in the 2001 – 2003 biennium was $5,250,391.

The following tables contain the details of the revenues generated and expenditures made during the 2001 – 2003 biennium.

CLARK COUNTY HABITAT CONSERVATION PROGRAM
LAND DISTURBANCE REPORT
2001 - 2003 BIENNIUM

REPORTS SUBMITTED BY:	Henderson	North LV	Boulder City	Mesquite	Las Vegas	CC Building	CC PW	NDOT	REFUNDS	TOTALS
July 2001	329.04	104.55	0	0	27.9	188.81	10.97	0		661.27
August	31.796	46.811	0.18	0	184	170.91	7.01	0		440.707
September	43.75	49.67	0	0	65.69	167.9	7.933	0		334.943
October	99.06	81.21	2.1	0	58.66	470.56	37.43	0		749.02
November	111.78	23.71	0.54	0	93.06	288.78	20.419	0		538.289
December	24.96	34.89	0.19	0	129.8	219.33	6.55	0		415.72
January 2002	133.06	55.98	0	0	101.76	254.39	38.7	0		583.89
February	200.95	60.72	5.51	0	53.835	245.88	17.59	0		584.485
March	45.42	13.77	0	0	166.96	400.76	52.685	0		679.595
April	24.87	668.97	0	0	187.58	260.45	7.387	0		1149.257
May	264.27	86.37	0	0	240.018	307.1	66.62	0		964.378
June 2002	21.720	0.500	0	0	149.780	531.140	5.540	0	-17.03	691.650
Subtotal:	1,330.68	1,227.15	8.52	0.00	1,459.04	3,506.01	278.83	0.00	-17.03	7,793.20
Projected - 2001-2002 (actual [7,793.2 acres] is 105.06% of annual projection [7,418 acres])										7,418.00
July 2002	11.75	51.51	0.4	18.27	115.93	232.95	10.263	0		441.073
August	61.305	48.96	3.45	0	195.98	213.96	11.25	0		534.905
September	87.375	75.53	0.48	93	158.83	185.72	7.663	11.4		619.998
October	236.86	51.75	8.66	0	243.587	288.75	4.24	0		833.847
November	62.81	378.87	0	6.84	180.76	141.95	17.6	0		788.83
December	147.35	92.03	1.18	44.4	53.35	233.9	12.41	0		584.62
January 2003	84.63	181	0	2	182.59	237.01	95.05	0		782.28
February	14.07	588.16	4.79	22	104.11	222	5.993	0		961.123
March***	66.74	236.51	1.61	3.8	29.08	191.51	38.81	2.52		570.58
April	229.31	106	1.36	0.76	104.99	259.04	7.57	0		709.03
May	24.61	51.77	0.29	1.61	93.81	262.04	30.177	0		464.307
June 2003	392.06	119.34	0.81	28.67	39.2	149.07	9.413	0	-12.43	726.133
Subtotal:	1,418.87	1,981.43	23.03	221.35	1,502.22	2,617.90	250.44	13.92	-12.43	8,016.73
Projected - 2002-2003 (actual [8,016.73 acres] is 99.1% of annual projection [8,092 acres])										8,092.00
TOTAL 01-02	1,330.68	1,227.15	8.52	0.00	1,459.04	3,506.01	278.83	0.00	-17.03	7,793.20
TOTAL 02-03	1,418.87	1,981.43	23.03	221.35	1,502.22	2,617.90	250.44	13.92	-12.43	8,016.73
TOTAL BIEN	2,749.55	3,208.58	31.55	221.35	2,961.26	6,123.91	529.27	13.92	-29.46	15,809.93
CARRY FWD	328.23	399.71	33.17	89.49	505.22	1,665.23	62.4	6.85	0.00	3,090.30
GRAND TOTAL	3,077.78	3,608.29	64.72	310.84	3,466.48	7,789.14	591.67	20.77	-29.46	18,900.23

CLARK COUNTY DESERT CONSERVATION PROGRAM
SECTION 10 EXPENDITURES
2001 - 2003 BIENNIUM

Acct.	Category	Jul.-01 Sep.-01	Oct. -01 Dec. -01	Jan. -02 Mar. -02	Apr.-02 Jun.-02	Jul.-02 Sep.-02	Oct. -02 Dec. -02	Jan. -03 Mar. -03	Apr.-03 Jun.-03	Sub-Total Fy.01/02	Sub-Total Fy.02/03	Total Bien. 2001/2003
5000	Salaries	$ 33,534	$ 43,271	$ 25,910	$ 47,068	$ 41,851	$ 65,631	$ 56,872	$ 78,825	$ 149,783	$ 243,180	$ 392,963
6000	Benefits	$ 10,946	$ 13,258	$ 8,833	$ 12,339	$ 13,110	$ 20,406	$ 19,856	$ 24,886	$ 45,376	$ 78,257	$ 123,633
7010	Office Supplies	$ 90	$ 966	$ 72	$ 1,246	$ -	$ 80	$ 1,838	$ 1,413	$ 2,374	$ 3,331	$ 5,706
7020	Groceries	$ -	$ 1,780	$ 2,040	$ 1,650	$ 972	$ 1,820	$ 628	$ 2,834	$ 5,470	$ 6,254	$ 11,724
7030	Operating Supplies	$ 560	$ 1,293	$ 527	$ 14,160	$ 570	$ 377	$ 1,016	$ 1,233	$ 16,540	$ 3,196	$ 19,736
7060	Small Equipment	$ -	$ -	$ 1,107	$ 1,384	$ -	$ -	$ -	$ 2,765	$ 2,491	$ 2,765	$ 5,256
7110	Auto	$ 35	$ 379	$ 109	$ 162	$ 94	$ 241	$ 129	$ 274	$ 685	$ 738	$ 1,423
7120	Equipment/Facility Renta	$ -	$ -	$ 854	$ -	$ -	$ -	$ 1,838	$ -	$ 854	$ 1,838	$ 2,692
7140	Telephone	$ (25)	$ 346	$ 871	$ 668	$ 230	$ 221	$ 216	$ 266	$ 1,861	$ 933	$ 2,794
7160	Insurance	$ -	$ -	$ 1,782	$ -	$ -	$ -	$ 1,797	$ -	$ 1,782	$ 1,797	$ 3,579
7210	Professional Services	$ 635,335	$ 671,143	$ 619,266	$ 580,094	$ 318,143	$ 464,304	$ 527,571	$ 432,956	$ 2,505,839	$1,742,974	$ 4,248,813
7240	Equipment Maintenance	$ -	$ -	$ -	$ 324	$ -	$ -	$ -	$ -	$ 324	$ -	$ 324
7250	Postage	$ 7	$ 507	$ 32	$ 97	$ 32	$ 85	$ 27	$ 114	$ 643	$ 258	$ 900
7260-7270	Travel and Training	$ -	$ 1,360	$ 350	$ 2,493	$ -	$ 1,570	$ 2,661	$ 1,241	$ 4,203	$ 5,472	$ 9,676
7280	Printing & Advertising	$ 7,722	$ 1,870	$ 4,792	$ 30,445	$ 5,531	$ 3,598	$ 11,455	$ 19,697	$ 44,829	$ 40,282	$ 85,111
7310	Dues, Subscriptions, …	$ -	$ -	$ 359	$ 341	$ -	$ 206	$ 817	$ 590	$ 700	$ 1,613	$ 2,313
7330	Fees, Licenses & Permits	$ -	$ -	$ 600	$ -	$ -	$ -	$ -	$ -	$ 600	$ -	$ 600
7340	Refunds	$ 252	$ 2,263	$ 4,647	$ 4,169	$ 710	$ -	$ 4,048	$ 2,079	$ 11,331	$ 6,836	$ 18,167
8010	Land	$ -	$ -	$ -	$ 92,849	$ 577,510	$ -	$ -	$ -	$ 92,849	$ 577,510	$ 670,359
8030	Fencing	$ -	$ -	$ 15,000	$ -	$ -	$ -	$ -	$ -	$ 15,000	$ -	$ 15,000
	Total:	$ 688,456	$ 738,437	$ 687,151	$ 789,490	$ 958,754	$ 558,539	$ 630,770	$ 569,173	$ 2,903,534	$2,717,235	$ 5,620,769

CLAKR COUNTY DESERT CONSERVATION PROGRAM
SECTION 10 EXPENDITURES
2001 - 2003 BIENNIUM

Entity	Jul.-01 Sep.-01	Oct. -01 Dec. -01	Jan. -02 Mar. -02	Apr.-02 Jun.-02	Jul.-02 Sep.-02	Oct. -02 Dec. -02	Jan. -03 Mar. -03	Apr.-03 Jun.-03	Sub-Total Fy.01/02	Sub-Total Fy.02/03	Total Bien. 2001/2003
Henderson	$ 198,644	$ 174,068	$ 124,251	$ 244,334	$ 41,709	$ 49,926	$ 302,258	$ -	$ 741,296	$ 393,894	$ 1,135,190
North Las Vegas	$ 63,564	$ 99,858	$ 52,580	$ 423,269	$ 55,317	$ 69,979	$ 682,035	$ -	$ 639,270	$ 807,331	$ 1,446,601
Boulder City	$ 1,599	$ 1,427	$ 4,253	$ 3,056	$ 2,195	$ 6,777	$ 849	$ -	$ 10,335	$ 9,821	$ 20,156
Mesquite	$ 1,345	$ -	$ 228	$ -	$ 10,080	$ 54,912	$ 18,013	$ -	$ 1,572	$ 83,005	$ 84,577
Las Vegas	$ 116,550	$ 119,609	$ 186,656	$ 424,878	$ 171,468	$ 320,749	$ 173,671	$ -	$ 847,692	$ 665,887	$ 1,513,579
Clark County	$ 307,704	$ 559,152	$ 550,958	$ 641,802	$ 351,221	$ 380,167	$ 433,938	$ -	$ 2,059,616	$ 1,165,326	$ 3,224,942
N.D.O.T.	$ -	$ -	$ -	$ -	$ 6,270	$ -	$ -	$ -	$ -	$ 6,270	$ 6,270
Total Excluding Interest:	**$ 689,404**	**$ 954,113**	**$ 918,924**	**$ 1,737,340**	**$ 638,260**	**$ 882,510**	**$ 1,610,764**	**$ -**	**$ 4,299,781**	**$ 3,131,534**	**$ 7,431,315**
Interest	$ 620,393	$ 600,684	$ 467,522	$ 398,377	$ 812,365	$ 497,251	$ 425,247	$ -	$ 2,086,976	$ 1,734,863	$ 3,821,839
Total:	**$ 1,309,797**	**$ 1,554,798**	**$ 1,386,445**	**$ 2,135,717**	**$ 1,450,626**	**$ 1,379,761**	**$ 2,036,011**	**$ -**	**$ 6,386,757**	**$ 4,866,397**	**$ 11,253,154**

CLARK COUNTY DESERT CONSERVATION PROGRAM
SECTION 10
PROFESSIONAL SERVICES EXPENDITURES
2001 - 2003 BIENNIUM

Agency/Entity	Contract/PO Amount	7/01 - 9/01	10/01 - 12/01	1/02 - 3/02	4/02 - 6/02	7/02 - 9/02	10/02 - 12/02	1/03 - 3/03	4/03 - 6/03	Subtotal FY 01/02	Subtotal FY02/03	Total Biennium 2001/2003
Aztec Environmental	24,000				5,218.50				6,472.50	5,218.50	6,472.50	11,691.00
Mark Blair	24,000						24,000.00			0.00	24,000.00	24,000.00
Budd-Falen Law Offices**	109,000	50.40	7,246.26	26,577.48	8,941.74		12,351.75	21,546.46	8,874.23	42,815.88	42,772.44	85,588.32
Bureau of Land Management	840,000		210,000.00		210,000.00		185,000.00			420,000.00	185,000.00	605,000.00
Michael Buschelman	42,770	1,464.50	8,079.75	1,222.50	340.00			877.00	1,090.50	11,106.75	1,967.50	13,074.25
Michael Creathbaum	141,800	17,725.00	17,725.00	35,450.00	17,725.00	17,725.00		35,450.00		88,625.00	53,175.00	141,800.00
Flamingo Pet Clinic	9,000		540.00			180.00	180.00	100.00	2,020.00	540.00	2,480.00	3,020.00
Catering		1,059.15	1,045.00	switched to different account						2,104.15	0.00	2,104.15
Clark County Fund Expense		8,143.29	9,980.58	9,967.53	7,435.79					35,527.19	0.00	35,527.19
Great Basin Bird Observatory	20,000	20,000.00								20,000.00	0.00	20,000.00
HDR Engineering	24,000				6,063.34	238.83				6,063.34	238.83	6,302.17
Hermi Hiatt	6,000							3,915.00	1,998.00	0.00	5,913.00	5,913.00
Jones & Stokes	50,000				10,436.50	11,909.86	9,244.91	3,408.73	6,167.97	10,436.50	30,731.47	41,167.97
Las Vegas Valley Water District	45,000	20,781.36								20,781.36	0.00	20,781.36
Matteson Media Group	212,921		24,000.00	42,000.00	31,803.02		20,195.00	53,731.00	28,906.66	97,803.02	102,832.66	200,635.68
Mountain Vista Animal Hospital	6,000			2,760.00	1,365.00					4,125.00	0.00	4,125.00
MRREIAC	195,778		22,925.12	26,136.43	24,990.89	13,054.14	17,528.16	23,812.58	67,310.91	74,052.44	121,705.79	195,758.23
National Park Service	551,750			135,625.00	67,812.00	3,378.00	67,812.00	141,496.00	135,624.00	203,437.00	348,310.00	551,747.00
Nevada Division of Forestry	360,000	14,140.09								14,140.09	0.00	14,140.09
North Las Vegas Animal Hospital	10,000	5,785.00	2,500.00							8,285.00	0.00	8,285.00
Partners in Conservation	330,000	21,450.00	23,931.00	10,200.00	31,700.00	15,000.00		60,350.00	33,450.00	87,281.00	108,800.00	196,081.00
Red Rock Interpretive Association	22,500						20,500.00		2,000.00	0.00	22,500.00	22,500.00
Selzer, Ealy, Hemphill & Blasdel**	300,000	17,234.31	25,574.88	59,951.11	62,584.33	28,250.43	38,295.09	21,809.98	31,088.77	165,344.63	119,444.27	284,788.90
Simpson's Photography									25.00	0.00	25.00	25.00
Southern Nevada Environmental	492,019	52,407.90	53,756.91	51,502.32	59,257.45	103,004.64	51,502.32		51,657.32	216,924.58	206,164.28	423,088.86
Steve-N-Kids	10,080				1,445.00		195.00		2,395.00	1,445.00	2,590.00	4,035.00
The Conservation Fund	122,300		45,643.75		218.50					45,862.25	0.00	45,862.25
The Nature Conservancy	209,125	428.30	30,000.00		32,756.44	6,292.53	17,500.00	19,909.16	15,000.00	63,184.74	58,701.69	121,886.43
USDA - Forest Service	461,440			173,040.00		115,360.00		141,165.00	31,875.00	173,040.00	288,400.00	461,440.00
USDA - Wildlife Services	67,500	33,750.00				33,750.00				33,750.00	33,750.00	67,500.00
U S Geological Survey	283,202	136,942.78								136,942.78	0.00	136,942.78
University of Nevada, Las Vegas	241,546	20,119.87	-16,361.19							3,758.68	0.00	3,758.68
University of Nevada, Reno	571,794	88,404.45	42,870.07	10,590.56						141,865.08	0.00	141,865.08
University of Nevada, Reno AMP	1,150,000	165,459.50	151,676.35	24,243.38						341,379.23	0.00	341,379.23
Utah State University	12,000								7,000.00	0.00	7,000.00	7,000.00
SUBTOTAL		625,345.90	661,133.48	609,266.31	580,093.50	348,143.43	464,304.23	527,570.91	432,955.86	2,475,839.19	1,772,974.43	4,248,813.62
less non-credit expenditures**	409,000	17,284.71	32,821.14	86,528.59	71,526.07	28,250.43	50,646.84	43,356.44	39,963.00	208,160.51	162,216.71	370,377.22
TOTAL OF CREDIT EXPENDITURES		$608,061.19	$628,312.34	$522,737.72	$508,567.43	$319,893.00	$413,657.39	$484,214.47	$392,992.86	$2,267,678.68	$1,610,757.72	$3,878,436.40

** MSHCP does not earn credits for these expenditures

CLARK COUNTY DESERT CONSERVATION PROGRAM
SECTION 7 REVENUES
2001 - 2003 BIENNIUM

Month	Amount
July, 2001	$128,524.90
August, 2001	5,302.86
September, 2001	93,047.97
October, 2001	22,522.61
November, 2001	113,404.02
December, 2001	5,161.55
Subtotal for 2001	**$367,963.91**
January, 2002	$141,719.64
February, 2002	81,205.48
March, 2002	12,755.61
April, 2002	83,631.96
May, 2002	195,438.37
June, 2002	12,824.58
July, 2002	16,003.59
August, 2002	2,002,192.92
September, 2002	65,264.56
October, 2002	81,429.12
November, 2002	40,063.20
December, 2002	16,856.79
Subtotal for 2002	**$2,749,385.82**
January, 2003	$24,885.13
February, 2003	24,926.90
March, 2003	69,859.38
April, 2003	114,488.54
May, 2003	5,189.83
June, 2003	6,402.24
Subtotal for 2003	**$245,752.02**
Total Revenues: 2001 - 2003	**$3,363,101.75**

CLARK COUNTY DESERT CONSERVATION PROGRAM
SECTION 7 EXPENDITURES
2001 - 2003 BIENNIUM

DATE	CONTRACTOR	NOTES	AMOUNT	TOTALS
	Section 7 Refunds		$ 39,465.19	
	Fund Expend: Investment Expns		$ 10,338.80	
11/13/01	BLM		$ 93,750.00	
11/27/01	USGS		$ 60,000.00	
01/25/02	NPS	P. O. 169421	$ 39,275.00	
01/31/02	NDF	Inv. 4983	$ 2,668.97	
01/31/02	NDF	Inv. 4872	$ 3,553.42	
01/31/02	NDF	Inv. 4856	$ 8,416.60	
01/31/02	NDF	Inv. 4866	$ 10,427.71	
02/14/02	UNR	final billing 99-01 AMP contract	$ 549,500.00	
03/18/02	NDF	Inv. 4990	$ 879.12	
04/04/02	NDF		$ 2,398.30	
04/10/02	USGS		$ 31,310.00	
04/23/02	So. Nevada Environmental		$ 2,244.87	
06/04/02	So. Nevada Environmental		$ 9,683.36	
07/09/02	NPS		$ 19,637.00	
07/09/02	BLM		$ 93,750.00	
	So. Nevada Environmental	correct miscoding from S10 to S7	$ 153,333.18	
		SUBTOTAL FY 2001-2002		$ 1,130,631.52
	Section 7 Refunds		none	
07/18/02	So. Nevada Environmental		$ 10,000.00	
08/12/02	So. Nevada Environmental	correct miscoding (01-02)	$ 30,000.00	
09/18/02	NPS		$ 19,588.00	
09/18/02	NPS		$ 49.00	
09/19/02	NDF		$ 2,095.15	
09/25/02	So. Nevada Environmental		$ 10,000.00	
10/18/02	NDF	Inv. #5790	$ 2,122.85	
12/12/02	So. Nevada Environmental	#4190	$ 10,000.00	
12/12/02	NDF	#5976	$ 1,907.62	
12/17/02	NDF	#5983	$ 752.74	
12/19/02	BLM		$ 81,250.00	
01/15/03	NDF	#6781	$ 1,464.96	
02/05/03	NDF	#5993	$ 5,649.35	
03/18/03	NDF	#6829	$ 3,404.43	
03/25/03	NDF	#5997	$ 1,169.69	
03/25/03	NPS	LAME 01-4B	$ 10,450.00	
04/10/03	SNEI	#4215	$ 10,000.00	
07/17/03	NPS	LAME 01-5B	$ 10,450.00	
07/17/03	NPS	LAME 01-6B	$ 36,126.00	
07/31/03	NDF	#6855	$ 2,730.57	
		SUBTOTAL FY 2002-2003		$ 249,210.36
06/03/03	NPS Inv. #LAME 01-7A paid by S7 funds in error (should have been S10 funds)			($67,812.00)
		TOTAL 2001-2003 BIENNIUM		$ 1,312,029.88

CLARK COUNTY DESERT CONSERVATION PROGRAM
SECTION 10
PIE SUBCOMMITTEE EXPENDITURES
2001 - 2003 BIENNIUM

Project	Date	Amount
Mojave Max Emergence Contest (Matteson Media Group and Steve-N-Kids)		
Mojave Max Emergence Contest (MMG) -02	January/02	$32,000.00
PSA Campaign (MMG) -02	Jan-July/02	$62,000.00
Mojave Max Mascot Appearances-02	April/02	$1,705.00
Mojave Max Emergence Contest-02	August/02	$3,803.00
Mojave Max Emergence - Radio Ads - 03	March/03	$10,000.00
Mojave Max Emergence T.V. Ads - 03	March/03	$20,000.00
Mojave Max Emergence - 03	March-Jun/03	$95,018.66
Mojave Max Mascot Appearances-03	Jun-03	$2,595.00
	Total	$227,121.66
Clark County In-House		
Mojave Max Brochure	February/02	$1,959.00
Mojave Max Stickers	February/02	$1,438.00
Mojave Max Stickers	May/02	$1,438.00
Hotline & Toll-Free # - 02	June/02	$300.00
Mojave Max Stickers	July/02	$1,438.00
Mojave Max Stickers	Jan/03	$2,414.00
Mojave Max Tortoise Patrol Cards	Jan/03	$786.00
Mojave Max Tour Brochure	Jan/03	$1,553.00
Weed brochure	March/03	$1,089.00
Balancing Species Conservation	March/03	$1,199.00
Recreational Opportunity brochure (b&w copies)	April/03	$39.00
Mojave Max thank you letter	May/03	$98.00
Hotline & Toll-Free # - 03	June/03	$300.00
	Total	$14,051.00
Mojave Max Education Program (Red Rock Interpretive Association)		
Mojave Max Education Program - 03	Sept/03	$20,500.00
Mojave Max Education Program, start-up - 04	July/03	$2,000.00
	Total	$22,500.00
Clark County Fair		
2 Fair Booths - 02	March/02	$686.00
6 Fair Booths - 03	March/03	$1,838.00
	Total	$2,524.00
KNPR		
Mojave Max Almanac, Ads, & Database - 02	Feb/02	$1,000.00
Mojave Max Almanac, Ads, & Database - 03	Mar/03	$4,500.00
	Total	$5,500.00
Products (Monarch Promotions, The Premium Network, Crown Trophy)		
Products - litter bags (Monarch)	August/01	$4,350.00
Products - bottle buddies, zipper pulls, wooden nickels, sun shades	June/03	$6,387.73
	Total	$10,737.73
Miscellaneous (Transfer West Duplicating, Skydance Studios, Species Guide, Weeds Seminar)		
VHS copies - 02	August/02	$328.00
Red Rock Sign (Skydance Studios)	August/01	$2,800.00
Weeds Seminar Reimbursement (Trinko & Lund)	January/02	$350.00
Species Guide Editing (Hiatt)	Sept/01-Mar/03	$10,413.00
Species Guide Photos	May/03	$250.00
	Total	$14,141.00
Grand Total		$296,575.39

CLARK COUNTY DESERT CONSERVATION PROGRAM
SECTION 10
DESERT TORTOISE FENCING PROGRAM EXPENDITURES
2001 - 2003 BIENNIUM

Budget Allocated from 01-03 Biennium	$800,000
Carryover Budget from 99-01 Biennium	$300,000
TOTAL ALLOWABLE EXPENDITURES for BN 01-03	**$1,100,000**

Expenditures for BIENNIUM 01-03(July 1, 2001 - June 30, 2003)		
Partners in Conservation	Construction, Feb - 02	$15,000
Tiberti	Fencing Materials, Mar - 02	$13,000
Nevada Division of Forestry	Construction	$49,641
Mark Blair	Trenching	$24,000
Partners in Conservation	North Area Construction (02-03)	$54,000
TOTAL BIENNIUM 01-03		**$125,911.00**
Encumbered BIENNIUM 01-03		
Nevada Department of Transportation	Construction of 16 miles on SR 165	$525,000
Nevada Division of Forestry	Retrofitting, repair of various fences.	$150,359
TOTAL		**$678,089**
TOTAL ENCUMBERED AND EXPENDED		**$804,000**
Approximate miles of fencing installed in 2001-2003 biennium		
CONTRACTOR	**MILES COMPLETED**	**FEET REPAIRED**
PIC	6	200
NDF	12	4,000

CLARK COUNTY DESERT CONSERVATION PROGRAM
PLMA EXPENDITURES
2001 - 2003 BIENNIUM

Agency	Project	MSHCP Funds Awarded	10/1/01 - 12/31/01	1/1/02 - 3/31/02	4/1/02 - 6/30/02	7/1/02 - 9/30/02	10/1/02 - 12/31/02	1/1/03 - 3/31/03	4/1/03 - 6/30/03	Funds Spent
BLM										
	Wild Horse, Burro Herd Mgmt	$325,000		$81,250	$40,625			$162,500	$40,625	$325,000
	Field Monitoring, Plant Invent.	$90,000		$22,500	$11,250	$11,250	$11,250	$22,500	$11,250	$90,000
	GIS Monitoring and Analysis	$250,000		$62,500	$31,250	$31,250	$31,250	$62,500	$31,250	$250,000
	Bat Inventory	$90,000		$22,500	$11,250			$13,125	$13,125	$60,000
		$755,000		$188,750	$94,375	$42,500	$42,500	$260,625	$96,250	$725,000
NPS										
	Plant Inventories rare, alien	$161,000	$40,250	$20,125	$20,125	$20,125	$20,125	$20,125	$20,125	$161,000
	Wildlife Surveys, Monitoring	$287,180	$71,795	$35,897	$35,897	$35,897	$35,897	$35,897	$35,897	$215,382
	Data Collection, Analysis	$115,048	$28,762	$14,381	$14,381	$14,381	$14,381	$14,381	$14,381	$86,286
		$563,228	$140,807	$70,403	$70,403	$70,403	$70,403	$70,403	$70,403	$422,418
UNFWS										
(TNC)*	Muddy River Assessment	$260,820					$13,712	$9,078	$23,237	$46,027
USDA-FS										
	Environmental Edu. Program	$50,000					$8,558	$4,706	$11,699	$24,963
	Invent/Monitor Species of Con	$90,000				$13,704	$19,050	$11,541	$1,371	$45,666
	Invent/Monitor Recreation Use	$162,670			$30,353	$2,765	$5,442	$24,273	$23,902	$86,735
		$302,670			$30,353	$16,469	$33,050	$40,520	$36,972	$157,364
UNR										
	AMP Program	$2,640,000	$81,057	$161,725	$296,764	$277,203	$328,649	$248,696	D/N bill	$1,394,094
	TOTAL	$4,521,718	$221,864	$420,878	$491,895	$406,575	$488,314	$629,322	$226,862	$2,744,903

CLARK COUNTY DESERT CONSERVATION PROGRAM
EXPENDITURES AND CREDITS
2001 - 2003 BIENNIUM

BIENNIUM	FISCAL YEAR 1	ORIGINAL BASE AMOUNT 2	CREDIT ADJ AMT 3	ADJ BASE AMT 4	CPI ADJ AMT 5	ADJUSTED REQUIRED EXPENDITURES 6	ACTUAL EXPENDITURES 7	CPI CURR JUNE 8	CPI ADJ FACTOR 9	CREDIT 10	REM-AINING YEARS 11	CREDIT EARNED PER YEAR 12	TOTAL CREDIT EARNED 13
1	**99/00**	**$2,050,000**	**0**	**$2,050,000**	**$0**	**$2,050,000**	**$3,582,129**	**N/A**	**0**	**$1,532,129**	**29**	**$52,832**	*$52,832*
	00/01	**$2,050,000**	**$52,832**	**$1,997,168**	**$0**	**$1,997,168**	**$3,985,744**	**N/A**	**0**	**$1,988,576**	**28**	**$71,021**	*$123,853*
2	**01/02**	**$2,050,000**	**$123,853**	**$1,926,147**	**$199,705**	**$2,125,852**	**$2,695,373**	**179.9**	**0.1037**	**$569,521**	**27**	**$21,093**	*$144,946*
	02/03	**$2,050,000**	**$144,946**	**$1,905,054**	**$241,930**	**$2,139,548**	**$2,555,018**	**183.7**	**0.1270**	**$415,470**	**26**	**$15,980**	*$160,926*
3	**03/04**	**$2,050,000**	***$160,926***	***$1,889,074***	***$231,788***	*$2,120,863*	*$2,120,863*	*183*	*0.1227*	*$0*	**25**	*$0*	*$160,926*
	04/05	**$2,050,000**	*$160,926*	*$1,889,074*	*$278,146*	*$2,167,220*	*$2,167,220*	*187*	*0.1472*	*$0*	**24**	*$0*	*$160,926*
4	**06/07**	**$2,050,000**	*$160,926*	*$1,889,074*	*$324,504*	*$2,213,578*	*$2,213,578*	*191*	*0.1718*	*$0*	**23**	*$0*	*$160,926*
	07/08	**$2,050,000**	*$160,926*	*$1,889,074*	*$370,861*	*$2,259,936*	*$2,259,936*	*195*	*0.1963*	*$0*	**22**	*$0*	*$160,926*
5	**08/09**	**$2,050,000**	*$160,926*	*$1,889,074*	*$417,219*	*$2,306,293*	*$2,306,293*	*199*	*0.2209*	*$0*	**21**	*$0*	*$160,926*
	09/10	**$2,050,000**	*$160,926*	*$1,889,074*	*$463,577*	*$2,352,651*	*$2,352,651*	*203*	*0.2454*	*$0*	**20**	*$0*	*$160,926*
6	**10/11**	**$2,050,000**	*$160,926*	*$1,889,074*	*$509,934*	*$2,399,009*	*$2,399,009*	*207*	*0.2699*	*$0*	**19**	*$0*	*$160,926*
	11/12	**$2,050,000**	*$160,926*	*$1,889,074*	*$556,292*	*$2,445,366*	*$2,445,366*	*211*	*0.2945*	*$0*	**18**	*$0*	*$160,926*
7	**12/13**	**$2,050,000**	*$160,926*	*$1,889,074*	*$602,650*	*$2,491,724*	*$2,491,724*	*215*	*0.3190*	*$0*	**17**	*$0*	*$160,926*
	13/14	**$2,050,000**	*$160,926*	*$1,889,074*	*$649,007*	*$2,538,082*	*$2,538,082*	*219*	*0.3436*	*$0*	**16**	*$0*	*$160,926*
8	**14/15**	**$2,050,000**	*$160,926*	*$1,889,074*	*$695,365*	*$2,584,439*	*$2,584,439*	*223*	*0.3681*	*$0*	**15**	*$0*	*$160,926*
	15/16	**$2,050,000**	*$160,926*	*$1,889,074*	*$741,722*	*$2,630,797*	*$2,630,797*	*227*	*0.3926*	*$0*	**14**	*$0*	*$160,926*
9	**16/17**	**$2,050,000**	*$160,926*	*$1,889,074*	*$788,080*	*$2,677,155*	*$2,677,155*	*231*	*0.4172*	*$0*	**13**	*$0*	*$160,926*
	17/18	**$2,050,000**	*$160,926*	*$1,889,074*	*$834,438*	*$2,723,512*	*$2,723,512*	*235*	*0.4417*	*$0*	**12**	*$0*	*$160,926*
10	**18/19**	**$2,050,000**	*$160,926*	*$1,889,074*	*$880,795*	*$2,769,870*	*$2,769,870*	*239*	*0.4663*	*$0*	**11**	*$0*	*$160,926*
	19/20	**$2,050,000**	*$160,926*	*$1,889,074*	*$927,153*	*$2,816,227*	*$2,816,227*	*243*	*0.4908*	*$0*	**10**	*$0*	*$160,926*
11	**20/21**	**$2,050,000**	*$160,926*	*$1,889,074*	*$973,511*	*$2,862,585*	*$2,862,585*	*247*	*0.5153*	*$0*	**9**	*$0*	*$160,926*
	21/22	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,019,868*	*$2,908,943*	*$2,908,943*	*251*	*0.5399*	*$0*	**8**	*$0*	*$160,926*
12	**22/23**	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,066,226*	*$2,955,300*	*$2,955,300*	*255*	*0.5644*	*$0*	**7**	*$0*	*$160,926*
	23/24	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,112,584*	*$3,001,658*	*$3,001,658*	*259*	*0.5890*	*$0*	**6**	*$0*	*$160,926*
13	**24/25**	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,158,941*	*$3,048,016*	*$3,048,016*	*263*	*0.6135*	*$0*	**5**	*$0*	*$160,926*
	25/26	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,205,299*	*$3,094,373*	*$3,094,373*	*267*	*0.6380*	*$0*	**4**	*$0*	*$160,926*
14	**26/27**	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,251,657*	*$3,140,731*	*$3,140,731*	*271*	*0.6626*	*$0*	**3**	*$0*	*$160,926*
	27/28	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,298,014*	*$3,187,089*	*$3,187,089*	*275*	*0.6871*	*$0*	**2**	*$0*	*$160,926*
15	**28/29**	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,344,372*	*$3,233,446*	*$3,233,446*	*279*	*0.7117*	*$0*	**1**	*$0*	*$160,926*
	29/30	**$2,050,000**	*$160,926*	*$1,889,074*	*$1,390,730*	*$3,279,804*	*$3,279,804*	*283*	*0.7362*	*$0*	**0**	*$0*	*$0*

bold = actual
script = estimated

CONCLUSION

During the 2001 – 2003 biennium, three basic categories of work were funded, including MSHCP development and implementation projects and desert tortoise protection projects. Federal, state, and local agencies, along with nonprofit organizations and private contractors, received Section 10, Section 7 and PLMA funding for conservation projects aimed at addressing priorities outlined in the MSHCP.

During the 2001 – 2003 biennium, a total of 14 agencies and contractors were awarded Section 10 funds for discrete projects. Under the direction of the agencies and contractors enlisted, a total of 29 projects were funded, 22 projects were completed, six (6) projects have been extended, and one (1) project was neither initiated nor completed.

Clark County's Adjusted Required Expenditures for the 2001 – 2003 biennium was $4,265,400. After subtracting two non-credit expenditures, Clark County receives credit for spending $5,250,391 in Section 10 funds administering and implementing the DCP.

For the subject biennium, a total of four (4) agencies and contractors were awarded Section 7 funds for discrete projects totaling $1,012,100. Under the direction of the agencies and contractors enlisted, a total of seven (7) projects were funded and all seven (7) projects were completed. Clark County expended $1,312,030 in Section 7 funds. Of that total, $1,262,226 was spent on professional services contracts for the protection of desert tortoise as directed by the USFWS, $39,465 was spent on refunds, and $10,338 was spent on investment expenses.

Clark County was awarded $4,648,334 in PLMA funds. A total of six (6) agencies and contractors were awarded PLMA funds for discrete projects totaling $4,648,334. Under the direction of the agencies and contractors enlisted, a total of 22 projects were funded, 12 were completed, six (6) research projects are ongoing in the 2003 – 2005 biennium, two (2) projects have been extended, one project was combined with another and one (1) project was neither initiated nor completed. Clark County expended $2,663,846 on PLMA projects. Of that total, all of the funds were spent on professional services contracts for projects that contribute to the development of the MSHCP.

The Clark County Desert Conservation Program respectfully submits this report to the Board of County Commissioners and the United States Fish and Wildlife Service as required in Section 2.12.1 of the MSHCP and reaffirms its commitment as a steward of the plan and the DCP.

APPENDIX I

CLARK COUNTY DESERT CONSERVATION PROGRAM IMPLEMENTATION AND MONITORING COMMITTEE

The organizations/agencies and the individuals who have been nominated/appointed by their respective groups to serve on the Clark County Desert Conservation Program's Implementation and Monitoring Committee are as follows:

	Organization/Agency	Name
1.	U.S. Fish and Wildlife Service	Cynthia Martinez
2.	Bureau of Land Management	Gayle Marrs-Smith
3.	National Park Service	Ross Haley
4.	U. S. Geological Survey	Todd Esque
5.	Nevada Division of Wildlife	Brad Hardenbrook
6.	Nevada Division of Forestry	John Jones
7.	Nevada Department of Transportation	Julie Ervin-Holoubek
8.	Nevada Department of Agriculture	Thomas Smigel
9.	U. S. Forest Service	Susan Barrow
10.	Southern Nevada Water Authority	Holly Johnson
11.	Clark County	Lewis Wallenmeyer
12.	City of Las Vegas	Lori Wohletz
13.	City of North Las Vegas	Jan Schweitzer
14.	City of Henderson	Shelly Labay
15.	City of Boulder City	Steve Koon
16.	City of Mesquite	Kurt Sawyer
17.	Partners in Conservation (northeast County rural interests)	Elise McAllister
18.	Representative of mining interests	Ron Schreiber
19.	Representatives of Off-Highway Vehicle (OHV) interests	Don Dayton
20.		Mark Trinko
21.	Southern Nevada Home Builders Association	Julene Haworth
22.	The Nature Conservancy	Janet Bair
23.	University of Nevada, Reno	C. Richard Tracy
24.	Moapa Town Advisory Board	Ann Schreiber
25.	Conservation District of Southern Nevada	John Hunt
26.	Sierra Club	Jane Feldman
27.	The Conservation Fund	Michael Ford
28.	Red Rock Audubon Society	Hermi Hiatt
29.	Greater Las Vegas Association of Realtors	David Donovan
30.	Searchlight Town Advisory Board	Steve Ferrand

APPENDIX II

The following represents an update on the status of projects that were outstanding during the 1999 – 2001 biennium.

Nevada Division of Wildlife - Chuckwalla Study

A draft report was submitted to Clark County on May 16, 2003. Principal investigators Dr. Edmund Brodie and Mr. Paul Ustach presented the draft report to the IMC on April 23, 2003. In addition, Dr. Brodie and Mr. Ustach received written comments on the draft report from Mr. Phil Medica of the USFWS, Mr. Brad Hardenbrook and Ms. Christy Klinger of the NDOW.

The final draft was received on June 12, 2003.

University of Nevada, Las Vegas - Desert Tortoise Survivorship Study

The final report has not been submitted by UNLV. Clark County will continue to encourage UNLV to complete the final report and submit it to Clark County.

University of Nevada, Las Vegas – Palmer's Chipmunk Study

The final report has not been submitted by UNLV. Clark County and the USFWS will continue to encourage UNLV to complete the final report and submit to Clark County and the USFWS.

Las Vegas Valley Water District/UNLV – Desert Pocket Mouse Study

The final report on the population ecology and demography of the desert pocket mouse were submitted to Clark County in October 2002. The final report on the genetics portion of this project has not been submitted by UNLV. Clark County will continue to encourage UNLV to complete the final report and submit it to Clark County.

Great Basin Bird Observatory – NV Breeding Bird Atlas

As was reported in the 1999 – 2002 biennium report, the Atlas was submitted to University of Nevada Press for publication in early 2004. Clark County will continue to monitor the publication of the Nevada Breeding Bird Atlas to ensure it is published.

Donald Sada, Ph.D. – Restore and Reintroduce Springsnails and Develop Monitoring Protocol

The final monitoring protocol was completed and included in the draft 2003 Springs Conservation Management Strategy.

APPENDIX III

This following report was prepared by Southern Nevada Environmental, Inc. (SNEI) and it outlines the progress, achievements and trends associated with the operation and maintenance of the Desert Tortoise Transfer and Holding Facility, the Desert Tortoise Conservation Center and the Desert Tortoise Translocation Program during the 2001 – 2003 biennium.

2001-2003 Biennial Report

July 1, 2001 through June 30, 2003

Clark County Desert Tortoise Transfer and Holding Facility,

Desert Tortoise Conservation Center &

Desert Tortoise Translocation Program.

Submitted To:

Lewis Wallenmeyer
Clark County Multiple Species
Habitat Conservation Plan Administrator
Clark County Government Center
500 South Grand Central Parkway
Las Vegas, Nevada 89155-1712

By

SNEI-Nevada.
6295 McLeod Drive, Suite 1
Las Vegas, Nevada 89120

August 26, 2003

Table of Contents

Section 1: Introduction

This report prepared by SNEI-*Nevada* illustrates the progress, achievements, and trends associated with the operation and management of the Clark County Desert Tortoise Transfer and Holding Facility (DTTHF), the operation and maintenance of the Desert Tortoise Conservation Center (DTCC), and the desert tortoise Translocation Program.

Since February 1993, SNEI has been contracted by Clark County to operate and manage the DTTHF. The transfer facility responsibilities of the DTTHF include operating a desert tortoise hotline and county wide pickup service with a comprehensive call log and database. The hotline and pickup service is operated 365 days a year from 6 AM to 6 PM. The holding facility responsibilities of the DTTHF include a disease screening program, data collection and tagging, keeping a comprehensive database of all incoming and outgoing tortoises, care and feeding, as well as pen construction and maintenance. SNEI prepares and submits monthly comprehensive reports for the DTTHF to Clark County and the Implementation and Monitoring Committee (IMC) of the Clark County Multiple Species Habitat Conservation Plan (MSHCP).

Since July of 1997 SNEI has been contracted by Clark County to operate and maintain the DTCC. SNEI has maintained the DTCC and its more than 300 tortoises throughout the last three bienniums (1997-2003). SNEI's responsibilities include providing care for the Bureau of Land Management tortoises, maintaining the DTCC main building, landscaping, research pens, irrigation system, well system, receiving salvaged plants from contractors, as well as care and watering of salvaged plants. Biological duties also include assisting, organizing and monitoring other maintenance work and repairs under the auspices of the BLM and various contractors

Since February of 1997, SNEI's has been contracted by Clark County for the preparation and release of qualified tortoises to the Large Scale Translocation Site (LSTS) as part of the University of Nevada – Reno (UNR), U.S. Geological Survey (USGS) Desert Tortoise Translocation Study. SNEI's responsibilities include gathering qualified tortoises from DTTHF and DTCC pens, external tagging, notching, recording measurements, transporting tortoises to predetermined release sites, watering tortoises prior to release, releasing tortoises, documenting release sites using a global positioning system (GPS), and keeping a comprehensive data base of all translocation activities. Monthly comprehensive reports are prepared and submitted for Translocation to Clark County and the IMC.

Section 2: Clark County Desert Tortoise Transfer and Holding Facility

2 Introduction

SNEI has been contracted to operate and manage the Clark County Desert Tortoise Transfer and Holding Facility (DTTHF) since February of 1993. For almost 11 years, SNEI has been operating the desert tortoise hotline and pickup service as well as the

desert tortoise temporary holding facility. Biologists have received, cared for, and maintained over 11,000 desert tortoises. Much of the data and information contained in this report is comprehensive. By analyzing data collected throughout the last five MSHCP biennium periods, SNEI has identified trends and patterns. This information provides a realistic understanding of how programs, procedures, and protocols are working. This section of the report outlines the data collected and methods used by SNEI in managing the DTTHF. Conclusions and recommendations to the IMC pertaining to each program or subsection are provided in Section 5, Conclusions and Recommendations.

2.1 Desert Tortoise Transfer and Holding Facility Incoming Tortoises

Incoming tortoises in the 2001-2003 biennium totaled 2,272. This is a slight decrease compared to 2,682 in the 1999-2001 biennium, and 2,697 in the 1997-1999 biennium, although a significant increase compared to 1,568 in the 1995-1997 biennium and 1,131 in the 1993-1995 biennium (FIGURE 1 – Desert Tortoises Collected by DTTHF during Biennium Periods 1993-2003, page 30). In the last five biennium periods the number of incoming tortoises has stabilized at an average of slightly fewer than 2,075 tortoises per biennium. The majority of tortoises entering the DTTHF were of unknown origin collected by the hotline and pickup service.

Throughout the 2001-2003 biennium, there were no tortoises collected from a voluntary Section 10 clearance. Seven (7) tortoises were collected from Section 7 clearances throughout the 2001-2003 biennium period. Four (4) of the seven tortoises collected from Section 7 clearances were collected from the R4-Detention Basin project. The remaining three (3) tortoises were collected from the Las Vegas Beltway project. In the 2001-2003 biennium 89 known wild tortoises entered the DTTHF.

The age class breakdown for incoming tortoises during the 2001-2003 biennium is 39% adult (888), 6% sub-adult (140), 16% juveniles (364), and 39% hatchlings and yearlings (870) (FIGURE 2. Desert Tortoises Collected by Age Class during 2001-2003 Bienniums, page 31). Figure 2 takes a closer look at the seasonal pattern of incoming tortoises by age class. The most significant observation in Figure 2 is the late summer, early fall influx of incoming hatchlings. The majority of hatchlings enter the DTTHF through the pick up service in August, September and October. This pattern is consistent with periods when tortoise eggs are hatching. Incoming adult, sub-adult and juvenile tortoises demonstrate a similar trend and follow a more temperature dependent pattern.

Since the creation of the DTTHF, incoming tortoises of all categories have continued to follow a distinct seasonal pattern (FIGURE 3. Desert Tortoises Collected by Biennium Periods 1993-2003, page 32). Few tortoises are collected in the winter months (6%) between November 1st and February 28th, with large numbers of tortoises having been collected in spring, summer and fall months (94%) between March 1st and October 31st. Peak collection months include April, May and June, as well as August, September, and October. The 2001-2003 biennium followed this seasonal pattern. (FIGURE 4. DTTHF Incoming Desert Tortoises Collected via Countywide Pickup Service per, page 33). This predictable seasonal pattern is temperature dependent with the majority of tortoises being

collected when daily high temperatures reach between 85 and 105 degrees F. Tortoise collection in March and July are usually relatively light in comparison to other non-winter months. March in Southern Nevada is usually cool with daily high temperatures rarely reaching 85 degrees F. July is typically hot with daily high temperatures commonly exceeding 105 degrees F.

Over the last five biennium periods the sex ratio of incoming tortoises has varied between categories. Desert tortoises begin to show secondary sex characteristics at approximately 18 to 25 years of age or approximately 180 to 200 mm Mean Carapace Length (MCL). For the purpose of this report a tortoise that is of unknown sex is too young to sex by visual inspection. The pool of incoming desert tortoises over the last five biennium periods display a sex ratio of 0.68 : 1.0, females to males respectively (FIGURE 5. DTTHF Incoming Desert Tortoises Classified by Sex 1991-2003, page 34). On a percentage basis 20% are female, 27% are male, and 53% are unknown sex (FIGURE 6. DTTHF Sex Ratio of Cumulative Incoming Tortoises 1991-2003, page 35). Looking specifically at presumed wild incoming tortoises from 1991-2003 the sex ratio changes to approximately 1.0 : 0.72, females to males respectively (FIGURE 7. DTTHF Incoming Presumed Wild Tortoises by Sex Class 1991-2003, page 36). On a percentage basis 37% are female, 27% are male, and 36% are unknown sex (FIGURE 8. DTTHF Sex Ratio of All Presumed Wild Between 1991-2003, page 37). This data demonstrates a considerable difference in the sex ratios between wild tortoise populations in the Las Vegas Valley and the incoming tortoises of unknown origin collected by the pickup service.

2.1.1 Accepting Unwanted Pet Desert Tortoises

As directed by the IMC, SNEI has been receiving unwanted pet desert tortoises since October 1996. Of the 2,272 tortoises picked up by the hotline service in the 2001-2003 biennium, 824 (36%) were pets given up by their owner. In the 1999-2001 biennium 1,056 of 2,562 tortoises (41%) were pets given up by their owner compared to the 1997-1999 biennium in which 909 of 2,581 tortoises (35%) were pets given up by their owner. In the 1995-1997 biennium 289 of 1,377 tortoises (21%) were pets given up by their owner. The 1995-1997 biennium numbers above reflect only 9 months (October 1996 to June 1997) of accepting unwanted pets (FIGURE 9. DTTHF Desert Tortoises Collected via Hotline Service 1993-2003, page 38).

Owners that wish to give up hatchlings or small juveniles are asked to either physically separate mated pairs or give up one of the mated pair to prevent further generation of hatchlings. Most pet owners are willing to comply with the donation of one adult in addition to the juveniles. Occasionally owners have refused to comply with this protocol; therefore tortoises were not collected by the pickup service. A sizeable increase in abandoned pet pickups was noticed within the 2001-2003 biennium. Pet tortoises were occasionally left abandoned in yards and adjacent areas, in which case the new owners or tenants would call the pickup service to collect them. Often pet owners give up multiple pet tortoises. It is not unusual to receive more than 20 tortoises from a single pet owner. Pet owners turning in more than 20 tortoises usually have multiple generations produced by the same mated pair or trio. Usually these multiple tortoise submissions are dropped off at the SNEI office or handled with a single pickup.

Photo 1- Wild adult desert tortoise (*Gopherus agassizii*) collected on a construction site in the Las Vegas Valley. Photo taken by Charles La Bar.

Additionally, SNEI biologists commonly receive calls from elderly pet owners who can no longer physically or financially care for their pets.

2.1.2 Wild Desert Tortoises

The implementation of Desert Conservation Plan (DCP) in August 1995 and new optional tortoise removals on private lands has resulted in a drastic reduction of wild Section 10 clearance tortoises entering the DTTHF. Throughout the 2001-2003 biennium, no tortoises were received from an optional Section 10 clearance. Only one (1) tortoise was received from an optional Section 10 clearance in the 1999-2001 biennium. This number was down significantly from the 416 wild tortoises collected during the 1993-1995 biennium when Section 10 clearances on private lands were mandatory. Although some of these wild tortoises are collected by concerned citizens and turned in to the pickup services or possibly kept as pets. However, the vast majority of these wild tortoises are believed to be killed via incidental take.

A few wild tortoises are still turned in to the DTTHF by concerned citizens. These non-clearance wild tortoises are collected by the countywide pickup service. Some of these tortoises are collected by well meaning citizens prior to the onset of construction or during construction. Others wander into new development sites from areas of once

Photo 2- Dead wild adult male desert tortoise (*Gopherus agassizii*) found adjacent to a construction site in a heavy equipment tire track. This tortoise is an example of an incidental take. Photo taken by Charles La Bar in August of 2001.

suitable habitat. Often it is difficult to distinguish these tortoises from escaped pets. Some people will deliberately withhold information on the exact location tortoises were discovered out of fear of prosecution by law enforcement.

Only seven (7) wild tortoises were received from formal Section 7 clearances in the 2001-2003 biennium. In the 1999-2001 biennium, only seven (7) wild tortoises were received from formal Section 7 clearances. All of these animals came from the Las Vegas Beltway project. In the 1997-1999 biennium 42 wild tortoises were received from formal Section 7 clearance. Thirty-nine of these wild Section 7 tortoises were received from the Las Vegas Beltway project. Only two (2) wild tortoises were received from formal Section 7 clearances in the 1995-1997 biennium (FIGURE 10. Wild Desert Tortoises Entering DTTHF from Section 10 and Section 7 Clearances, page 39).).

2.1.3 Progeny Generated at the DTTHF

In the 2001-2003 biennium 102 progeny were found in pens at the DTTHF compared to 106 progeny found in the 1999-2001 biennium. Only ten (10) progeny were found in the 1997-1999 biennium, 81 found in the 1995-1997 biennium, and 110 found in the 1993-1995 biennium. This increase in progeny can be attributed to adult females being maintained at the DTTHF during the egg-laying seasons. Many adult females were held

as select study animals for researchers such as the University of Nevada - Reno (UNR) and U.S. Geological Service (USGS) density study at the DTCC. Additionally translocation efforts to release qualified tortoises to the LSTS (Large Scale Translocation Site) were held to a minimum and delayed by permitting difficulties during the 1999-2001 and 2001-2003 biennium periods. In previous years, most adult females were transferred to adoption programs, research, or released at the LSTS via translocation before they could lay eggs in holding at the DTTHF.

Since early 1993, SNEI has implemented procedures to reduce the number of progeny generated at the DTTHF. Adult female tortoises are kept physically separated from adult male tortoises whenever possible. The only exception to this occurs when the DTTHF approaches its maximum holding capacity. Occasionally, the DTTHF will reach maximum capacity when translocation is postponed or when SNEI is directed to store large numbers of tortoises for upcoming research projects. Some of the progeny that were generated during the 2001-2003 biennium could have resulted from female tortoises being fertilized prior to entering the DTTHF. It should be noted however, that female desert tortoises are known to exhibit sperm storage and may lay fertile eggs up to three (3) years after copulation thus reducing the effectiveness of any progeny mitigation at the DTTHF.

2.1.4 Non-Desert Tortoises

In addition to the native desert tortoise, there are many exotic species of turtles and tortoises found in Southern Nevada. At least three introduced species of turtles are believed to be established in Southern Nevada including the Texas spiny softshell turtle (*Apalone spinifera ssp.*), the red-eared slider (*Trachemys scripta elegans*), and possibly the Sonoran mud turtle (*Kinosternon sonoriense*). Texas spiny softshell turtles, red eared sliders, and other exotics are relatively common in ponds and lakes of city and county parks, state parks, national recreation areas, naturally occurring and manmade washes, golf courses and residential subdivisions. Examples of these species can be found in bodies of water including Sunset Park, Lorrenzi Park, Floyd Lamb State Park, Lake Mead, Lakes Las Vegas, the Lakes, Desert Shores, TCP Summerlin, Angel Park Golf Course, the Las Vegas Wash, Bonnie Springs, and many more.

In addition to the many established species of reproducing exotics in Southern Nevada there are several species of turtles and tortoises that are not established that have entered Clark County through the pet trade. This species list includes, but is not limited to, Russian tortoises (*Testudo horsfieldii*), Texas tortoises (*Gopherus berlandieri*), gopher tortoises (*Gopherus polyphemus*), Egyptian tortoises (*Testudo kleinmanni*), African spurred tortoises (*Geochelone sulcata*), red footed tortoises (*Geochelone carbonaria*), and yellow footed tortoises (*Geochelone denticulata*). The list of turtle species includes ornate box turtles, western box turtles, three toed box turtles (*Terrapene ssp.*), eastern painted turtles (*Chrysemys picta ssp.*), Sonoran mud turtles (*Kinosternon sonoriense*), snapping turtles (*Chelydra serpentina*), map turtles (*Graptemys ssp.*), Asian box turtles (*Cuora ssp.*), and side neck turtles (*Pelusios ssp.*). These animals often escape or are released and found crossing roads, sidewalks, and yards.

Photo 3- Russian tortoise (*Testudo kleinmanni*) collected by the countywide pickup service. Russian tortoises are common in local pet shops. However, wild populations are in decline. Photo by Charles La Bar.

SNEI has implemented a series of protocols to identify non-desert tortoise hotline callers prior to pickup. SNEI's biologists routinely screen hotline callers with a series of questions designed to determine if the caller is requesting the pickup of a desert tortoise or a non-desert tortoise species. These questions include questions about size, shape, color, webbed feet, pointed noses, carapace pattern, elephantine limbs, colored facial striations or limb striations, hinged plastrons, etc.

Hotline callers usually fall into one of four categories; (1) callers who determine they do have a desert tortoise, (2) callers who determine they do not have a desert tortoise, (3) callers who can not determine what they have, and (4) callers who prevaricate about having a desert tortoise so the pickup service will respond and take it off of their hands. Therefore, SNEI has established outlets for incoming non-desert tortoises that can be used before or after a non-desert tortoise pickup has occurred. Currently there are four main outlets for these animals. They are; (1) the caller keeps the non-desert tortoise species, and is advised on care and how to get care information, (2) the caller is referred to the Southern Nevada Turtle and Tortoise Club, (3) an SNEI employee gives it a good home, or (4) SNEI keeps a list of persons, mostly hotline callers, and biologists that wish to give a turtle or tortoise a good home.

Photo 4- Box turtles (Terrapene spp.) collected by the countywide pickup service. SNEI biologists have given these box turtles a good home. Photo by Charles La Bar.

SNEI keeps records of both callers and pickups of non-desert tortoises (FIGURE 11. DTTHF Non-Desert Tortoises Collected 1993-2003, page 40). These pickups consist mostly of a variety of species of North American box turtles (*Terrapene ssp*.) (30%), red-eared sliders (*Trachemys scripta elegans*) (18%), and Russian tortoises (*Testudo horsfieldii*) (16%) (FIGURE 12. Percentage of DTTHF Non-desert Tortoises Collected during 1993-2003 Bienniums, page 41). The "Other turtles and tortoises" category shown in Figure 12 is a conglomeration of miscellaneous exotic species. Many of these were kept by the finder or directly referred to the Southern Nevada Turtle and Tortoise Club. There were 51 other turtles and tortoises collected or accepted by the pickup service that were identified to species. Of these 50 animals 18% were spiny softshell turtles (*Apalone spinifera ssp.*), 14% were western painted turtles (*Chrysemys picta belli*), 18% were Texas tortoises (*Gopherus berlandieri*), and 20% were African spur-thighed tortoises (*Geochelone sulcata*). The remaining 30% of other turtles and tortoises are broken down on figure 13 (FIGURE 13. DTTHF Breakdown of Known Other Turtles and Tortoises Identified Throughout 1991-2003 N=50, page, 42).

2.2 Transfer and Holding Facility Outgoing tortoises

Tortoises leave the DTTHF through translocation, research, adoption, returned pets, natural death, and euthanasia. In the 2001-2003 biennium 6% were transferred to USFWS approved research projects, 56% were translocated, 2% were adopted, 1% returned to owners, 15% died of various causes, and 20% were euthanized (FIGURE 14. DTTHF Outgoing Tortoises for 2001-2003 Biennium by Category, page 42)

2.2.1 Desert Tortoise Adoptions

There were 38 adoptions in the 2001-2003 biennium. Of these, 14 tortoises were adopted by the Tortoise Group and 24 were adopted by the Reno Tur-Toise Club (RTC). In the 1999-2001 biennium there were 59 adoptions (Tortoise Group n = 18, RTC n = 41). In the 1997-1999 biennium there were 99 adoptions (Tortoise Group n = 22, RTC n = 77). In the 1995-1997 biennium there were 208 adoptions (Tortoise Group n = 41, RTC n = 167) (FIGURE 15. DTTHF Outgoing Tortoises Adopted for Biennium Periods 1993-2003, page 44). This relatively low number of adoptions in the 1999-2001 and 2001-2003 bienniums is a result of the decrease in demand for pet tortoises. In Southern Nevada, many tortoises are available from various pet owners or citizens who find tortoises and do not contact the pickup service. Although several members of the public invest a valid interest in tortoise adoptions groups, they do not take the effort to create landscape changes that are suitable to Tortoise Group requirements for adoption.

Since 1993 the Tortoise Group has requested primarily adult tortoises for their adoption program (FIGURE 16. Tortoise Group Adoptions by Age Class 1993-2003, page 45). The majority of adult tortoises requested for adoption were female (FIGURE 17. Tortoise Group Adoptions by Sex 1993-2003, page 46). This trend of adopting adult female tortoises is attributed to the fact that adult females are less aggressive, allowing adopters to have multiple tortoises without fighting. The MSHCP program has not funded the Tortoise Group's adoption program since 1995.

Since 1993 the RTC has requested primarily adult tortoises for their adoption program (FIGURE 18. Reno Tur-Toise Club Adoptions by Age Class 1993-2003, page 47). The RTC has requested slightly more than 50% of the total adoptions to be females (FIGURE 19. Reno Tur-Toise Club Adoptions by Sex 1993-2003, page 48). Unlike the Tortoise Group, the RTC's primary adoption function was to give relief to the DTTHF. Prior to 1997 when translocation was not an option, the RTC was the primary outlet for hundreds of incoming tortoises. RTC's adoption area is 350 miles outside of suitable desert tortoise habitat where it is far to cold for escaped tortoises to survive. RTC's goal was to place as many tortoises as possible to help DTTHF make space for incoming tortoises. The sex and age classes adopted by RTC were largely dependent on what was available at the DTTHF. The RTC's adoption program was fully funded in the 1995-1997 biennium, partially funded in the 1997-1999 biennium, and was not funded in the 1999-2003 biennium periods.

Desert tortoise adoption has become less of a priority since the implementation of the translocation program in the spring of 1997. Tortoise disposition priorities have shifted towards research and translocation and away from adoption. Even with the shift in disposition priorities the tortoise adoption programs receive all requested tortoises from the DTTHF. However, the main priority of the DTTHF is to provide research animals for USFWS approved research projects. Most research and adoption programs request a higher percentage of adult female tortoises. This can be attributed to the fact that adult tortoises have a higher survivability rate than tortoises with a mean carapace length of >180 mm. Also, adult female tortoises exhibit less aggressive behavioral characteristics making them more suitable for research studies with restricted accommodations.

2.2.2 Returned Pets to Owners

Owners of escaped pet tortoises that are collected by the hotline service are usually welcome to reclaim their pets. Most are eager to pick up escaped pet(s) at SNEI's corporate office as well as making the necessary landscape and housing changes to prevent any further escapes. If pet tortoises are found to be habitual escapees or are found to live in apartment complexes or any other improper habitat, SNEI does not return the animal. However, only a small fraction of pet owners will call looking for their pet tortoise(s). Only 25 escaped pets were returned to their owners in the 2001-2003 biennium. In the 1999-2001 biennium 32 escaped pets were returned, in 1997-1999 biennium 37 escaped pets were returned to their owners. In the 1995-1997 biennium 26 escaped pets were returned to their owners.

2.2.3 Animals to Research

One of the priorities of the DTTHF is to provide animals for USFWS approved research projects. Throughout the 2001-2003 biennium 152 ELISA positive tortoises were released to research entities such as the University of Nevada-Reno (UNR), Georgia Southern University, San Diego Zoo-Center of Reproduction for Endangered Species (CRES), Red Rock Conservation Area, as well as others. The DTTHF released 125 ELISA positive and URTD symptomatic tortoises on two separate occasions for a UNR URTD transmission related research project. Dr. C. Richard Tracy, Dr. Ronald Marlow, and David Hyde (graduate student-UNR) received 50 research animals on 11/13/2002 as well as a second subset of research animals on 7/24/2003 (n = 75).

Additionally, animals were transferred to Dr. David C. Rostal and Dr. Valentine Lance with the direction of the Center for Reproduction of Endangered Species. . Rostal and Lance requested six (6) ELISA positive desert tortoises on 2/24/2003 to aid in obtaining tissue samples for the isolation and analysis of digestive enzymes, fibroblast isolation and culture, as well as blood samples a for a mycoplasma study at the University of Florida.

On 10/11/2002, the Red Rock Conservation Area requested a subset (n = 9) of ELISA positive research animals that were previously slated for euthanasia. This subset of tortoises were freeze dried following euthanasia and used for educational purposes at the Red Rock Visitor Center.

ELISA positive animals (n = 12) were also transferred to Dr. Johnson, D.V.M. under the direction of the National Veterinary Conference on 11/13/2003. These research animals were used for teaching purposes in Reno, Nevada.

Photo 5-Malnourished desert tortoise (*G. agassizii*)collected by countywide pickup service. Notice the concave carapace, long claws, and yellow overall color. The carapace of this specimen was soft to touch and pliable. This tortoise was likely kept in doors in a terrarium and fed lettuce. Photo by Ryan Hewitt.

2.2.4 Animals Died, Euthanized, and Missing

In the 2001-2003 biennium period 214 tortoises at the DTTHF died of unknown causes. Of the 214 that died of unknown causes, 92% (n = 197) were hatchlings and yearlings, 2% (n = 5) were juveniles, 1%(n = 3) were sub-adults, and 4% (n = 9)were adults (FIGURE 20. DTTHF Desert Tortoises that Died of Unknown Causes 2001-2003, page 49). Biologists believe these hatchling and yearling tortoises were victims of drastic changes in ambient temperatures, malnutrition and poor care prior to entering the DTTHF, and an increased mortality rate in hatchling and yearling age classes. The majority of deceased tortoises were found in the spring of 2002 and 2003 when SNEI biologists were collecting tortoises from the holding pens for spring translocation.
A total of three (3) hatchling and yearling desert tortoises at the DTTHF were found dead as a result accidentally turning over in the sun throughout the 2001-2003 biennium period.

Photo 6- This juvenile desert tortoise (*G. agassizii*) with rear section missing was mauled by a dog and turned in alive to the countywide pickup service. This animal was euthanized for grievous injuries. Photo by Ryan Hewitt.

Throughout the 2001-2003 biennium period, 26 tortoises were humanely euthanized by a veterinarian for grievous injuries. One (1) tortoise died at the veterinarian clinic. This grievous injury occurred prior to pick-up and the animal died before euthanasia occurred. In the 1999-2001 biennium there were 35 tortoises were euthanized for extreme malnutrition or other medical problems. Improper care or neglect of pet tortoises that leads to extreme malnutrition and a variety of medical problems is responsible for the majority of animals in need. Throughout this period, 375 tortoises were euthanized for receiving a positive or suspect ELISA test for URTD (FIGURE 22. DTTHF Desert Tortoises Euthanized by Reason 2001-2003, page 51).

In the 2001-2003 biennium eight (8) tortoises were declared missing. Of the missing tortoises 50% (n = 4) were hatchlings and yearlings and 50% (n = 4) were juveniles (FIGURE 21. DTTHF Missing Tortoises by Age Class 2001-2003, page 50). No sub-adults or adults were discovered missing at the DTTHF. Predation by ravens, coyotes, kit foxes, wood rats, red racers, fire ants, raptors, and road runners is believed to be primary source of the missing hatchlings and juveniles. Direct predation by wood rats, red racers, fire ants, and common ravens has been observed and documented at the DTCC.

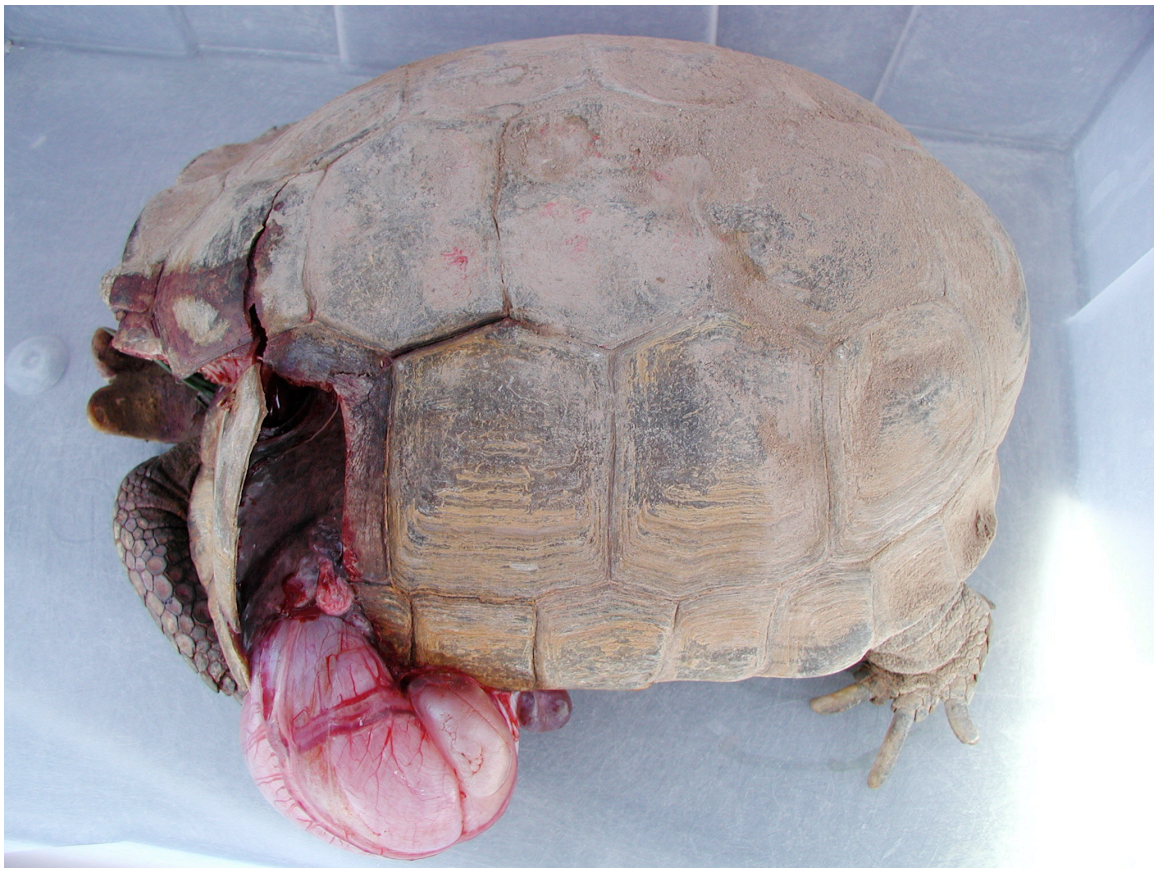


Photo 7- This desert tortoise (*G. agassizii*) was struck by a motor vehicle and turned in alive to the countywide pickup service. This animal was euthanized for grievous injuries. Photo by Ryan Hewitt.

2.3 ELISA Testing of Incoming Tortoises

SNEI continues to subject all visually asymptomatic incoming tortoises to ELISA testing for URTD. Throughout the 2001-2003 biennium 88% (n = 1,999) of the incoming tortoises were subjected to the ELISA test. The remaining 12% (n = 273) of incoming tortoises that did not receive ELISA testing were euthanized for injuries, extreme malnutrition, or health problems; immediately returned to owner; or died before testing took place. Approximately 23% (n = 465) of incoming tortoises tested positive or suspect and were euthanized. Approximately 77% (n = 1535) tested negative and were placed into holding for research, translocation, and adoption. Tortoises coming in between October 31st and May 15th were held in quarantine pens until they could be tested eight to ten weeks into the active season.

ELISA data collected supports the theory that older tortoises are more likely to be exposed to URTD and elicit a positive or suspect ELISA result. Looking at the ELISA results by age class approximately 35% (n = 1,298) adults, 9% (n = 112) sub-adults, 14% (n = 180) juveniles, and 11% (n = 231) hatchlings and yearlings test positive or suspect for ELISA testing (FIGURE 23. ELISA Results by Age Class 1995-2003, page 52). Male tortoises (36%, n = 209) have a slightly higher frequency of positive and suspect

Photo 8 – SNEI biologist Ryan Hewitt collected a blood sample via brachial vienupuncture to be processed by SNEI biologists and shipped to the University of Florida for ELISA testing. Photo by Sharon Whitaker.

results than do female tortoises (33%, n = 126) (FIGURE 24. ELISA Results by Sex Class 1995-2003, page 53). Approximately 22% (n = 1,666) of known pet tortoises entering the DTTHF exhibit an ELISA positive or ELISA suspect test result. (FIGURE 25. ELISA Results of Known Pet Tortoises by Age Class, page 54).
Throughout the last five MSCHP biennium periods, 48% (n = 144) adults, 30% (n = 24) sub-adults, 34% (n = 35) juveniles, and 22% (n = 6) hatchlings and yearlings exhibit ELISA positive or ELISA suspect test results (FIGURE 26. ELISA Results of Presumed Wild Tortoises by Age Class, page 55). The vast majority of these presumed wild tortoises have been collected in the Las Vegas Valley. Wild tortoises collected from additional locations in Clark County have demonstrated dissimilar results. Field samples collected at the LSTS prior to translocation in 1996 produced results suggested 97% negative and 3% suspect with no positive results (n = 30). This data supports the hypothesis that wild desert tortoise populations in the Las Vegas Valley exhibit a higher percentage (41%, n = 209) of ELISA positive and ELISA suspect animals than populations sampled from additional areas in Clark County.

The ELISA test administered to incoming tortoises is significant in reducing the transmission of URTD to healthy tortoises. SNEI biologists have noticed a significant decrease in the number of symptomatic tortoises found in holding pens at the DTTHF. Prior to implementing ELISA testing for all incoming tortoises, biologists regularly found

symptomatic tortoises in holding pens. Since testing implementation, less than six (6) symptomatic tortoises are found in holding pens annually. Adult and sub-adult tortoises are usually kept singly or in pairs. Juveniles and hatchlings are often kept several to a pen. Infected tortoises housed with multiple animals are likely to infect an entire pen. Additionally, workers at the facility could inadvertently spread URTD from pen to pen with routine care and maintenance. Animals slated for adoption, translocation, or un-controlled research should be ELISA negative to prevent the spread of URTD within wild and captive populations. The USFWS requires that tortoises entering adoption programs be ELISA negative. The only approved outlet for tested ELISA positive or ELISA suspect tortoises is through USFWS approved research projects.

Photo 9- Desert tortoise (G. agassizii) in holding at the Desert Tortoise Conservation Center (DTCC). SNEI biologists are caring for over 300 BLM desert tortoises at the DTCC. Photo by Charles La Bar.

Section 3: Desert Tortoise Conservation Center Projects

3.0 Introduction

SNEI has been contracted by Clark County to operate and maintain the Desert Tortoise Conservation Center (DTCC) since July of 1997. With the support of the Bureau of Land Management and Clark County, SNEI has successfully maintained the DTCC and its more than 300 tortoises throughout the last three MSCHP biennium periods (1997-2003).

3.1 DTCC Responsibilities

Biological responsibilities include the maintenance of desert tortoise pens, DTCC main building, landscaping, research pens, irrigation system, well system, care and feeding of the BLM tortoises, as well as receiving, caring, and watering of salvaged plants from various entities contracted by the BLM. Additional responsibilities include assisting, organizing, and monitoring maintenance work and repairs for the DTCC. SNEI has assisted and coordinated with researchers from the Smithsonian Institute, University of Nevada-Reno (UNR), U.S. Geological Survey-Biological Resources Division (USGS), San Diego Zoo-Center for Reproduction of Endangered Species (CRES), Georgia Southern University (GSU), and University of California-Las Angeles (UCLA).

Currently, the DTCC assists in organization of approximately 425 research animals for the Smithsonian Institute. These research animals are rotated through the facility for various study trials. SNEI provides care and maintenance for a small subset (n = 100) of the Smithsonian Institute research animals. Once tortoises are transferred to research entities, care and maintenance of the study animals becomes the sole responsibility of the researcher.

Responsibilities of the DTCC also include organization, care, and maintenance for approximately 260 animals for the Bureau of Land Management and Smithsonian Institute. This number includes 105 adult, 10 sub-adult, and 20 juvenile desert tortoises that are not presently involved in a research study for the BLM. The majority of adult tortoises were ELISA tested in 1996 and produced ELISA negative results.

SNEI is currently caring for 40 adult and 125 juvenile desert tortoises for Dr. David C. Rostal with the collaboration of Georgia Southern University and the San Diego Zoo-Center for Reproduction of Endangered Species for a long-term URTD research project at the DTCC and analysis of ELISA positive tortoises.

Throughout the 2001-2003 biennium periods, SNEI organized and cared for approximately 150 ELISA positive and URTD symptomatic tortoises for a UNR URTD transmission related research project. Biologists assisted Dr. C. Richard Tracy, Dr. Ronald Marlow, and David Hyde (graduate student-UNR) in setting up holding pens, burrow construction, and transfer of research animals. During the summer of 2003, biologists conducted weekly inspections of research holding pens as well as outlying

Photo 10- Over the years the DTCC has become a materials storage facility for many entities. Some of the materials are being stored for projects that are in progress, however much of the stockpiled material is just being stored at the DTCC. Photo by Charles La Bar.

fencing areas to remove any wild desert fauna caught in the small-gauge fencing around the perimeter of research pens. During the biennium, DTCC was responsible for care and maintenance of these research animals as well as tortoise pen sanitation and repair once research animals were transferred to the care of UNR.

3.2 DTCC Projects

In fall 2001 SNEI biologists Michelle McDermott and Kristen Bardeen observed two small wild fires within a wash approximately 100 meters east of the DTCC. The fire was immediately extinguished by SNEI personnel before the department could arrive. An insignificant amount of habitat was disturbed by both fires. Fire was thought to be caused by anthropogenic causes. Biologists notified the BLM and documented the potential criminal intent along adjacent areas of the DTCC. A very small amount of undisturbed desert was affected by fire.

Throughout the 1999-2001 biennium, an increase in rodent populations resulted in damage to the pump house and BLM trailer. Additionally, evidence of predation by wood rats on hatchling tortoises in the DTTHF holding pens was recorded. Two hatchling carcasses were found in a wood rat nest in the summer of 2001. Biologists have continued to battle wood rat and deer mice infestations. Conventional snap traps

and glue traps have proven ineffective in controlling the infestations. In fall of 2001, with the approval of BLM, SNEI contracted Terminix to implement a zinc phosphate baiting program. In June of 2001, Darren Williams of the Department of Agriculture's Animal Control Division conducted a pest inspection of the DTCC. In his report submitted to the IMC, recommendations were made to use a zinc phosphate baiting program. This program does not pose a secondary poisoning threat to other animals coming in contact with poisoned rodents. The use of the BLM trailer was terminated throughout the 2001-2003 biennium due to unhealthy conditions caused by excess rat and mouse excrement. Concurrently, the pump house was cleaned up using respirators, hand tools, and a bleach solution. The pump house is currently in a usable condition, and will be maintained with the implementation of the baiting program. Other buildings at the DTCC do not appear to be in jeopardy of infestation.

Over the years the DTCC has become a storage facility for many entities. The stockpiling of excess materials was a contributing factor to wood rat infestation identified by Darren Williams of Animal Damage Control in the report submitted to the IMC. BLM biologist, Beth Tomica, has inventoried and mapped the stockpiled materials and has been arranging the disposal of some of the unusable materials. Biologists have cleaned up material storage areas located near holding pens and moved those materials to this centralized material storage area. Storing excessive materials at the DTCC is contrary to the primary function of the facility. Finding a new place to stockpile materials would aid in keeping wood rat and other predator populations under control at the DTCC.

In 2003, the Occupational Safety and Health Administration (OSHA) inspected the DTCC and surrounding research areas and made recommendations for the BLM trailer to be removed due to excessive health risks caused by asbestos presence and rodent infestation and excrement. As a result of OSHA's recommendations, the BLM trailer was broken-down and removed by the DTCC in spring 2003. A new tortoise holding building was constructed at the DTCC to provide a suitable holding structure. This permanent structure included amenities such as air-conditioning, concrete flooring, and locking doors. This structure was completed in 2002 to improve conditions for all incoming tortoises entering the DTCC.

In February and March 2003, three (3) occasions of vandalism were observed at the DTCC. Assailants cut and entered the perimeter fence twice on the south side and once on the east side of the DTCC. Assailants entered the facility after business hours during a three week period at the center and stole approximately $5,000.00 of tools, chemicals, and equipment stored at the DTCC for maintenance and research purposes. Various entities were notified of the DTCC vandalism including the Bureau of Land Management's Ranger Task Force as well as the Las Vegas Metropolitan Police Department. In response the Las Vegas Metropolitan Police investigated and documented all three vandalism occurrences. Serial numbers and exact descriptions of missing items were specified for the BLM and LV Metropolitan Police Department to aid in ascertaining assailants. Upon request by the BLM and Clark County, SNEI organized consultations on the cost of installation of a monitoring and surveillance security system

at the DTCC. Estimations from three (3) different installation and monitoring companies were provided to the BLM. SNEI is currently waiting on a final decision from the BLM to proceed with installation of a surveillance system.

Section 4 Translocation Study

4.0 Introduction

As part of the responsibilities outlined by Clark County and the MSCHP, SNEI continually prepares and releases qualified desert tortoises to the Large Scale Translocation Site (LSTS) as part of the University of Nevada-Reno, U.S. Geological Survey Desert Tortoise Translocation Study. SNEI has released over 4,000 tortoises from holding pens at the DTTHF and DTCC. In spring 1997 the translocation program initially selected three release sites in Southern Nevada to serve as appropriate desert tortoise habitat for translocated animals. These release sites include the Bird Springs Valley, Lake Mead National Recreation Area, and the Large Scale Translocation Site (LSTS).

Currently, the translocation effort is focused primarily on releasing tortoises held at the DTTHF that meet the criteria for translocation as outlined by the USFWS and the Clark County MSCHP. Approximately 1,037 desert tortoises enter the DTTHF annually. With this large number of incoming animals, approximately 900 tortoises must be translocated annually to ensure adequate space for incoming tortoises. To qualify for translocation, a tortoise must produce a negative ELISA test result and pass a visual inspection for symptoms of URTD. Blood samples are collected from all incoming tortoises entering the DTTHF in an effort to eliminate the transfer of the Upper Respiratory Tract Disease (URTD) in wild and captive populations of desert tortoises within the Las Vegas Valley. Samples are collected and processed by SNEI biologists and express shipped to the University of Florida where the testing takes place. ELISA tests are conducted weekly by experienced research technicians at the University of Florida. A negative ELISA result indicates that a tortoise has not been exposed to URTD. The translocation of ELISA negative tortoises is believed by USFWS to be a minimal threat to the spread of URTD. Currently Clark County is permitted by USFWS to release only ELISA negative tortoises.

4.1 Bird Springs Valley Releases

No tortoises were released in Bird Springs Valley Study area during the 2001-2003 biennium. The total number of tortoises transferred from the DTTHF and released in the Bird Springs Valley study area is 76 in Spring 1997 and Winter 1998.

4.2 Lake Mead National Recreation Area Releases

No tortoises were released in the Lake Mead National Recreation Area study site during the 2001-2003 biennium. The total number of tortoises transferred from the DTTHF and released in the Lake Mead study area is 30 in January 1998.

4.3 Large Scale Translocation Site (LSTS) Releases

SNEI has participated in the translocation study since its inception in spring 1997. Since then, SNEI has released over 4,000 desert tortoises. Mostly hatchlings, yearlings, (40%, n = 1,739) and adults (32%, n = 1,401) were released to the LSTS (Figure 27. Desert Tortoises Released for Translocation to LSTS by Age Class for each MSCHP Biennium, page 56). The majority of adult tortoises released by SNEI were males (Figure 28. Desert Tortoises Released for Translocation to LSTS by Sex, page 57) due to the fact that adult female tortoises are in demand by research and adoption programs. Total numbers of desert tortoises participating in the Translocation Study will vary by age class and sex throughout each biennium depending on ELISA negative tortoises that are available in holding at the DTTHF.

SNEI released 1,252 tortoises at the LSTS during the 2001-2003 biennium as part of the ongoing Desert Tortoise Translocation Study. In September and October of 2001 SNEI released 768 tortoises to the LSTS. The remaining 484 tortoises were released for translocation in April of 2002 (n = 106) and April/May of 2003 (n = 378). Tortoises were not released in the fall of 2002 due to permitting difficulties. This delay in the translocation program is partially responsible for the increased number of hatchlings generated at the DTTHF during the 2001-2003 biennium. The total number of tortoises participating in the Translocation Study for each biennium is dependent upon USFWS permitting, total number of qualified tortoises available, and holding requirements from the DTTHF. Throughout the last four biennium periods (1995-2003), SNEI has released a total of 4,049 desert tortoises to the LSTS for translocation. During the 1999-2001 biennium 779 tortoises were released at the LSTS. During the 1997-1999 biennium 1,724 tortoises were released compared to only 300 tortoises being released in the 1995-1997 biennium.

Section 5 Conclusions and Recommendations

5.0 Introduction

In this section SNEI will make conclusions and recommendations based on the data collected for each subsection reported on in sections 2, 3, and 4 of this report. These recommendations and conclusions will appear in the same order as they are presented in this report.

5.1 DTTHF Incoming Tortoises Conclusions and Recommendations

In the last six years, the mean number of incoming tortoises has stabilized at slightly fewer than 2,700 tortoises per biennium. The majority of tortoises entering the DTTHF were of unknown origin collected by the hotline and pickup service.

Procedures for implementing protocols for incoming tortoises have been developed over they last 11 years under the direction of the Clark County MSCHP, BLM, and USFWS.

These protocols continue to function well. The subsections of section 5.1 will specifically discuss the conclusions and recommendations applicable to each category of incoming tortoises.

5.1.1 Accepting Unwanted Pet Desert Tortoises Conclusions and Recommendations

Accepting unwanted pet desert tortoises solves several problems faced by Clark County, USFWS, BLM, Redrock National Recreation Area, NDOW, National Park Service, Lake Mead National Recreation Area, the Tortoise Group, and other agencies and entities associated with the Clark County MSHCP. This program has five main objectives; (1) provide a legal controlled outlet for pet owners who either no longer want their pet(s) or can no longer care for their pet(s), (2) separate breeding groups of tortoises to minimize mass generation of hatchlings, and inform pet owners of the problems associated with captive breeding of desert tortoises, (3) reduce the overall numbers of pet tortoises in Clark County with a goal of reducing the burden of future pet tortoise issues, (4) reduce the number of unwanted pets being released into the wild without the benefit of disease screening or control of release location, and (5) field the volume of telephone calls that would undoubtedly be forwarded to Clark County, USFWS, BLM, NDOW, and the Tortoise Group without this program.

This service provides a legal and accessible outlet for pet owners who either no longer want their pet(s) or no longer able to provide care for their pet(s). This program is designed to reduce the number of tortoises that are "disposed of" by well-meaning but unknowledgeable members of the public. Often these animals are given to friends and family who may be unaware of the proper care of desert tortoises. The other alternative for the disposal of unwanted pets is releasing the animals into the desert. Not only is the animal in danger of being released in an inappropriate habitat type but wild tortoises nearby could be exposed to URTD or other diseases and parasites from the released pet. Due to the relatively high incidence of URTD and other diseases and parasites in captive tortoises, there is a greater potential risk of wild tortoise populations becoming infected by released pets.

SNEI concludes that the benefits of accepting unwanted pet desert tortoises are consistent with the goals and objectives of the Clark County MSHCP. This program gives the IMC, USFWS, and administrators of the MSHCP input in the disposition of unwanted pet tortoises. Without this program, problems associated with unwanted pet tortoises in Southern Nevada will grow at an alarming rate. There aforementioned problems will be accompanied by an increase in diseased tortoises that are released into the wild as well as the associated detrimental effects. SNEI strongly recommends the hotline and pickup service continue to deal proactively with the problem of unwanted pet desert tortoises and continue to implement this program.

5.1.2 Wild Tortoises Conclusions and Recommendations

The implementation of the Desert Conservation Plan (DCP) in August 1995 and the associated optional tortoise surveys and removals on private lands has resulted in a drastic reduction of wild Section 10 clearance tortoises entering the DTTHF. Throughout the 2001-2003 biennium periods, no tortoises were collected from an optional Section 10 clearance. Only (1) one tortoise was received from an optional Section 10 clearance in the 1999-2001 biennium. These numbers are down significantly from the 416 wild tortoises collected during the 1993-1995 biennium when Section 10 clearances on private lands were mandatory. Although several wild tortoises are collected by concerned citizens and turned in to the pickup services or kept as pets, the vast majority of wild tortoises dwelling in development or recreational areas are believed to be killed via incidental take.

Throughout the Las Vegas Valley, wild tortoise populations are a valuable resource that may potentially be utilized to aid in recovering diminished desert tortoise populations within Southern Nevada. The decision to implement optional clearances on private lands in Clark County was a pre Translocation Study decision. As more is learned about disease transmission and translocation the value of these wild tortoises could be fully recognized.

5.1.3 Progeny Generated at the DTTHF Conclusions and Recommendations

In the 2001-2003 biennium102 progeny were found in pens and adjacent areas at the DTTHF compared to 106 progeny located during the 1999-2001 biennium period. During the 1997-1999 biennium, only 10 progeny were found at the DTTHF. This increase in progeny produced during the last two biennium periods can be attributed to adult females being maintained at the DTTHF during egg-laying seasons throughout both biennium periods. To reduce the number of progeny produced at the DTTHF, females are separated from males in an effort to reduce fertilization. However, female desert tortoises are known to exhibit sperm storage and may lay fertile eggs up to three years after successful copulation. Many adult females were held at the DTCC to insure that adequate selections could be made by research entities such as UNR's URTD Transmission Study. Additionally, translocation efforts to release qualified tortoises to the LSTS were held to a minimum during the 1999-2001 and 2001-2003 biennium periods.

The generation of progeny at the DTTHF could have been minimized by transferring adult female tortoises out of holding at the DTTHF prior to oviposition. In the 1997-1999 biennium period most adult females were transferred to the Tortoise Group, researchers, or released at the LSTS via translocation before egg laying seasons occurred at the DTTHF. This transfer effort resulted in the generation of only 10 progeny at the DTTHF during the 1997-1999 biennium.

SNEI recommends the continuation of annual spring translocation programs prior to female oviposition. The protocol should specify releasing as many qualified adult desert

tortoises before egg laying season as a priority over releasing as many qualified adult female tortoises as possible from the DTTHF. SNEI further recommends adult males should be slated for research or adoption when possible. This allows adequate space to separate adult female and male tortoises during the mating season thus reducing the number of generated progeny. This endeavor will require a cooperative effort from SNEI, Clark County, UNR, USGS, and USFWS to insure translocation permits are in place in early March, and research animals are selected and transferred to research pens prior to May 1st each year.

5.1.4 Non-Desert Tortoises Conclusions and Recommendations

SNEI has implemented a series of protocols out of necessity to identify non-desert tortoise hotline callers prior to pickup. Biologists routinely screen hotline callers with a series of questions designed to determine if callers are requesting pickup of a desert tortoise or a non-desert tortoise species. Telephone screenings include questions about size, shape, color, webbed feet, pointed noses, carapace pattern, elephantine limbs, colored facial striations or limb striations, hinged plastrons, etc. Hotline callers usually fall into one of four categories; (1) callers who determine they have a desert tortoise, (2) callers who determine they do not have a desert tortoise, (3) callers who can not determine exact species, and (4) callers who prevaricate about having a desert tortoise so the pickup service will respond and remove it from the premises.

In response, SNEI has established outlets for incoming non-desert tortoises that can be used before or after a non-desert tortoise pickup has occurred. Currently there are four main outlets for these misplaced animals; (1) the caller keeps it, and is advised on the care and husbandry of specific species, (2) the caller is referred to the Southern Nevada Turtle and Tortoise Club, (3) an SNEI employee gives it a good home, or (4) SNEI keeps a list of persons, mostly hotline callers, and biologists that wish to give a turtle or tortoise a good home.

The objective of the pickup service does not include collecting non-desert tortoise species. However, in many instances it is impossible to determine if callers possess a desert tortoise. Most members of the public are unable to distinguish between a turtle and a tortoise, much less a desert tortoise from a Texas tortoise or Russian tortoise. Therefore it is necessary to respond to callers who cannot determine if the animal is in fact a desert tortoise. The current procedures for dealing with non-desert tortoise species have been developed and implemented over the last 11 years and are proving to be effective. This protocol not only saves money by limiting unnecessary pickups but also provides outlets for displaced animals. By collecting and receiving these non-desert tortoise species, SNEI is assisting in preventing the establishment of unwanted exotic species as well as the spread of disease in Southern Nevada. Many of these exotic turtles and tortoises are carriers of viral and bacterium diseases and that could potentially affect wild desert tortoise populations.

The benefits of implementing these non-desert tortoise handling protocols are consistent with the goals and objectives of the MSHCP. Dealing with unavoidable non-desert

tortoises calls in a proactive manor allows SNEI to field the volume of calls that likely be forwarded to Clark County, USFWS, BLM, NDOW, and the Tortoise Group.

5.2 DTTHF Outgoing Tortoises Conclusions and Recommendations

The current procedures in place for dealing with outgoing tortoises have been developed over the last 11 years. The subsections of section 5.2 will specifically discuss the conclusions and recommendations applicable to each of the categories for outgoing tortoises.

5.2.1 Desert Tortoise Adoptions Conclusions and Recommendations

Desert tortoise adoption programs have become less of a priority since the implementation of the translocation program in the spring of 1997. Tortoise disposition priorities have shifted towards research and translocation and away from adoption.

SNEI recommends continuing to provide USFWS authorized adoption entities with qualified tortoises. The adoption programs promote desert tortoise awareness as well as providing a valuable outlet for excess tortoises at the DTTHF. Adoptions that minimize hatchling production should be promoted.

5.2.2 Returned Pets to Owners Conclusions and Recommendations

Returning escaped pet tortoises to their original owners is a necessary service that benefits the public as well as the MSHCP program. This policy returns escaped pets to troubled owners at minimal cost, supplies the owner with information on proper care and feeding, as well as reduces the DTTHF husbandry and translocation cost.

SNEI recommends continuing the policy of returning escaped pets to their owners.

5.2.3 Tortoises to Research Conclusions and Recommendations

Providing desert tortoises to USFWS approved research projects has become a priority at the DTCC. Providing researchers with quality research animals is essential. This procedure is consistent with the goals and objectives outlined by the Clark County MSHCP.

SNEI recommends continuing to make the provision of research animals to USFWS approved research projects a top priority.

5.2.4 Tortoises Died, Euthanized and Missing Conclusions and Recommendations

In the 2001-2003 biennium 214 tortoises died of unknown causes. Approximately 92% of the 214 tortoises were hatchlings and yearlings. Biologists believe these hatchling and yearling tortoises were victims of drastic changes in ambient temperatures, malnutrition

and poor care prior to entering the DTTHF, and an increased mortality rate in hatchling and yearling age classes.

SNEI recommends keeping hatchling and yearling tortoises indoors in a climate-controlled room at the DTTHF over the winter months, and returning them to outdoor pens in the spring. This change in handling procedure should significantly reduce the hatchling and yearling mortality rate at the DTTHF.

Over four hundred tortoises were humanely euthanized and disposed of by licensed veterinarians during the 2001-2003 biennium. The majority of these tortoises (76%) were euthanized for producing a positive or suspect ELISA result indicating they had been exposed to Upper Respiratory Tract Disease (URTD). USFWS disease control protocol requires all ELISA positive and suspect tortoises be euthanized and properly disposed of. The only approved outlet for tested ELISA positive or ELISA suspect tortoises is through USFWS approved research projects. ELISA positive and suspect tortoises do not qualify for adoption, or translocation, and are rarely requested by researchers. Approximately 8% of these were euthanized for exhibiting visual symptoms of URTD. Approximately 9% of these tortoises were euthanized for exhibiting signs of extreme malnutrition or other health problems. Approximately 7% of these tortoises were euthanized for grievous injuries.

SNEI recommends continuing to implement the current USFWS protocols and procedures for dealing with ELISA suspect and ELISA positive tortoises, extremely malnourished tortoises, injured tortoises, and tortoises showing symptoms of URTD.

There were 8 tortoises declared missing in the 2001-2003 biennium. A total of four (4) hatchlings and yearlings and four (4) juveniles were declared missing. Several of the smaller juvenile and hatchling/yearling age-class believed to have escaped or been miss placed. The majority of these missing tortoises are believed to have been lost to predation. Incidences of predation on small tortoises by wood rats, ravens, kit fox, red racers, and fire ants have been documented at the DTCC. Other potential predators include road runners, owls, raptors, coyotes, gopher snakes, as well as feral cats. SNEI has hired Terminix to implement a rodent control program at the request of BLM. Licensed Terminix technicians are using a zinc phosphate baiting program as recommended by Darren Williams of the U.S. Department of Agriculture's Animal Damage Control Division.

SNEI recommends continuing the Terminix rodent control program. SNEI biologists will continue to construct and maintain predator proof pens to minimize lose to predators.

5.3 ELISA Testing of Incoming Tortoises Conclusions and Recommendations

The ELISA test performed on tortoises entering the DTTHF is very important to minimize the transmission of URTD. Biologists have noticed a significant difference in the number of URTD symptomatic tortoises being found in holding pens at the DTTHF. Prior to implementing ELISA testing of all incoming tortoises SNEI biologists would

regularly find tortoises showing symptoms of URTD in DTTHF holding pens. Since the implementation of ELISA testing biologists find less than six symptomatic tortoises in holding pens annually. Adult and sub-adult tortoises are usually kept singly or in pairs. Juveniles and hatchlings are often kept several to a pen. An infected tortoise in a pen with other tortoises could potentially infect them all. There is also the risk that workers at the DTTHF could inadvertently spread URTD from pen to pen. Any infected tortoises could infect other animals wherever they are placed. Animals being used in the translocation study are required to be ELISA negative in order to maintain the health of the wild tortoise population. Additionally, the USFWS requires that tortoises entering adoption programs be ELISA negative. Currently, the only outlet for tested ELISA positive or ELISA suspect tortoises is through research programs approved by USFWS.

SNEI strongly recommends continuing the ELISA testing of incoming tortoises. Without ELISA testing there is a significant risk of spreading URTD to tortoises held at the DTTHF. Withholding ELISA testing could prove detrimental for research by releasing ELISA positive animals into scientific studies.

5.4 DTCC Conclusions and Recommendations

The DTCC is aging and no longer has the appropriate facilities for the volume of research being conducted at the DTCC. The DTCC lacks office space, laboratory space, storage space, and climate controlled tortoise holding space. This summer researchers and administrators from BLM, SNEI, Clark County, USFWS, and UNR met at the DTCC to discuss the construction and possible PLMA funding of a new building. The existing DTCC main building was built in 1990. Since then the need for additional research and storage space has been an ongoing problem. Historically, this space problem has been solved by building multiple smaller sheds and climate controlled one room buildings. The consensus of the group was that one large well planned building of approximately 3,000 square feet could meet the needs of the BLM, researchers, and SNEI.

SNEI recommends the IMC explore the potential for PLMA funding to construct a new building at the DTCC. Having the appropriate facilities to operate the DTTHF, conduct research, and support BLM and MSHCP related projects and objectives would be a great asset to both the BLM and the MSHCP.

The wood rat problem at the DTCC has been identified, and actions are being taken to control wood rat and other rodent infestations. Both the BLM trailer and the DTCC pump house were seriously infested by wood rats. A new building was constructed under the direction of the BLM to provide adequate housing of incoming tortoises to the DTCC. By the request of OSHA and BLM, the trailer was removed from the DTCC due to excessive health risks by asbestos presence and rodent infestation and excrement. The DTCC pump house has been cleaned up and with regular maintenance can continue to be operational. SNEI recommends the continuation of the Terminix zinc phosphate baiting program to help control wood rat and other rodent populations at the DTCC.

SNEI also recommends research entities provide previous estimates on the number of research animals needed to initiate studies at the DTCC. Known future projects in need of captive and wild adult tortoises would eliminate unnecessary delays in the release of ELISA negative tortoises via the translocation program.

5.5 Translocation Conclusions and Recommendations

Translocation provides a necessary outlet for the hundreds of ELISA negative tortoises collected by the DTTHF. Translocation efforts are currently focused on releasing DTTHF tortoises in holding that qualify for translocation. Approximately 1,037 desert tortoises enter the DTTHF annually. With this large number of incoming animals, approximately 900 tortoises must be translocated annually to ensure adequate space for incoming tortoises. Without the translocation program pen construction and husbandry costs could increase exponentially. In 1994-95 the cost of pen construction at the DTTHF was approximately $1,500 per 25" by 25" block wall enclosure for materials and labor. The necessary construction of additional pens sufficient for 900 tortoises annually would cost approximately $1,000,000 a biennium.

The current USFWS, UNR, and USGS approved translocation handling protocols eliminate the installation of burrows, wearing gloves between ELISA negative tortoises, implanting passive integrated transponder (PIT) tags, and separate transportation for each ELISA negative tortoise. These modified handling protocols have greatly reduced the cost of translocation. Throughout the 2001-2003 biennium periods, SNEI billed for approximately $27,000 of a $120,000 budget.

The preliminary reports on the Desert Tortoise Translocation Study by UNR and USGS describe the translocation program as a great success. Tortoises released in the spring and fall settle into the release site in three or four days, establish new burrows and cover sites, and begin to gain wild behavioral characteristics in a relatively short period of time. Mortality rates of released tortoises have been reported to mirror that of monitored wild populations. However, SNEI recommends that additional studies should be conducted to fully understand mortality rates of released tortoises as well as the succession of the Desert Tortoise Translocation Study on the LSTS.

The USFWS has designated the translocation program as an ongoing priority under the Clark County MSHCP. This program serves as a political and economical success that meets the goals and objectives of the Clark County MSHCP as well as satisfying necessary USFWS incidental take permit requirements. SNEI strongly recommends the continuation of the translocation program. SNEI will continue to streamline release procedures to minimize program cost.

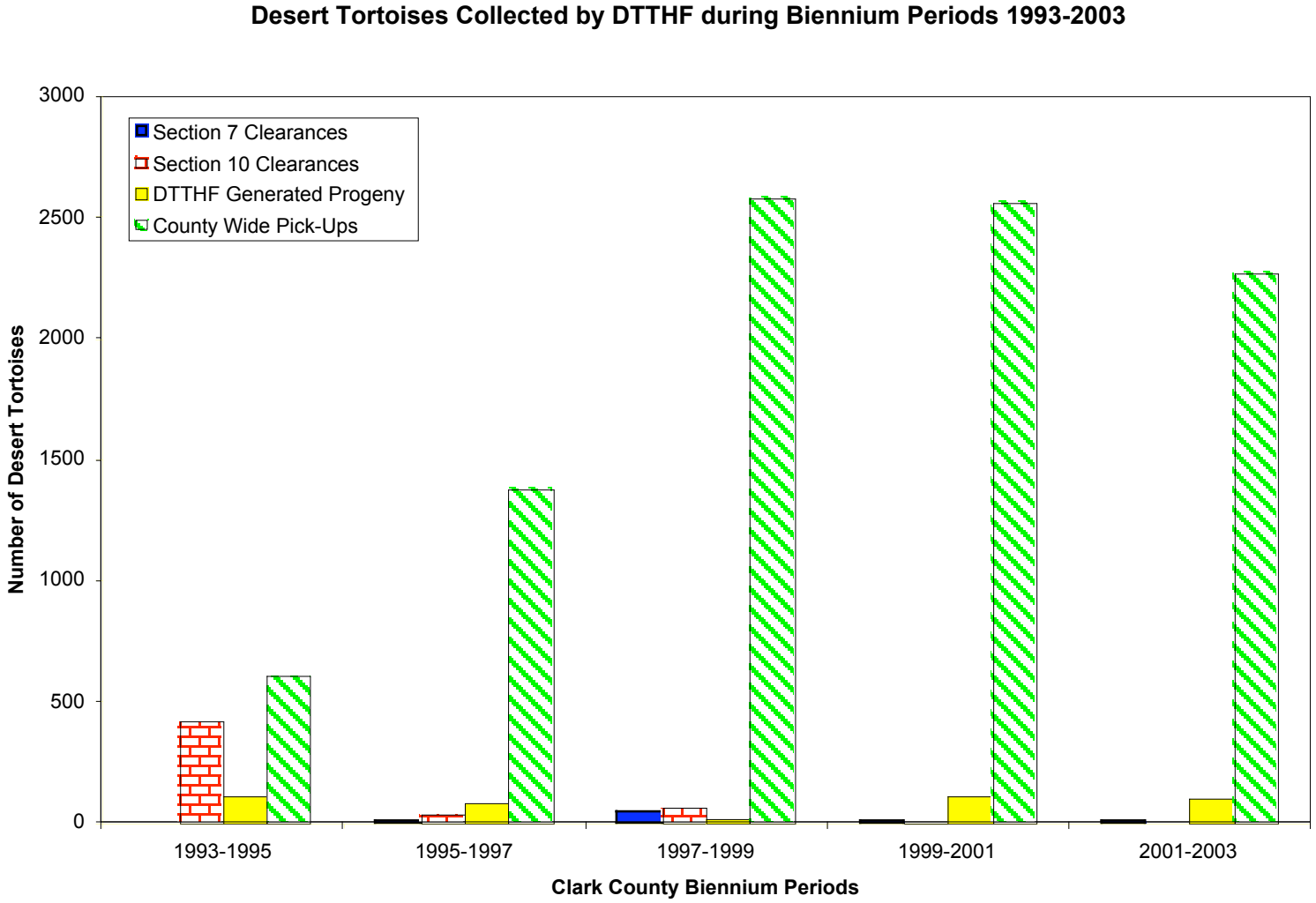


Figure 1. Number of desert tortoises (*Gopherus agassizii*) collected and processed by the Desert Tortoise Transfer and Holding Facility throughout the 1993-2003 MSCHP Biennium Periods in Clark County, Nevada. Graph shows a significant increase throughout 1997-2003 in *G. agassizii* collections by the County Wide Pick-up Service well as a decrease in *G. agassizii* collections by Section 7 and Section 10 Clearances.

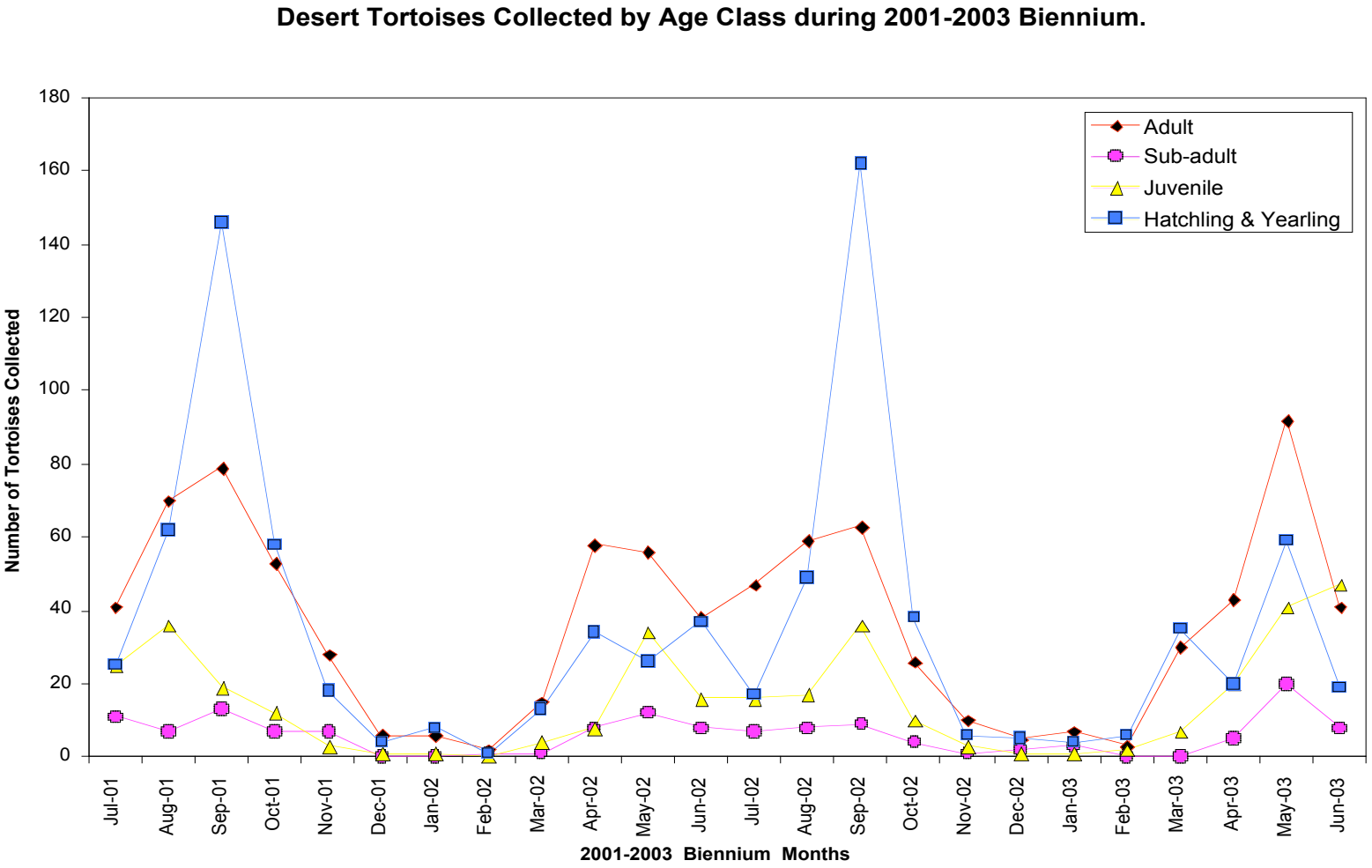


Figure 2. Number of Desert Tortoises (*G. agassizii*) collected by age class during each month of the MSCHP 2001-2003 Biennium Period in Clark County, Nevada. Graph demonstrates a seasonal trend with *G. agassizii* collected in the Las VegasValley. Incoming adult, sub-adult, and juvenile tortoises follow a more temperature dependent pattern. The number of hatchlings and yearlings collections are consistent with periods when tortoise eggs are hatching.

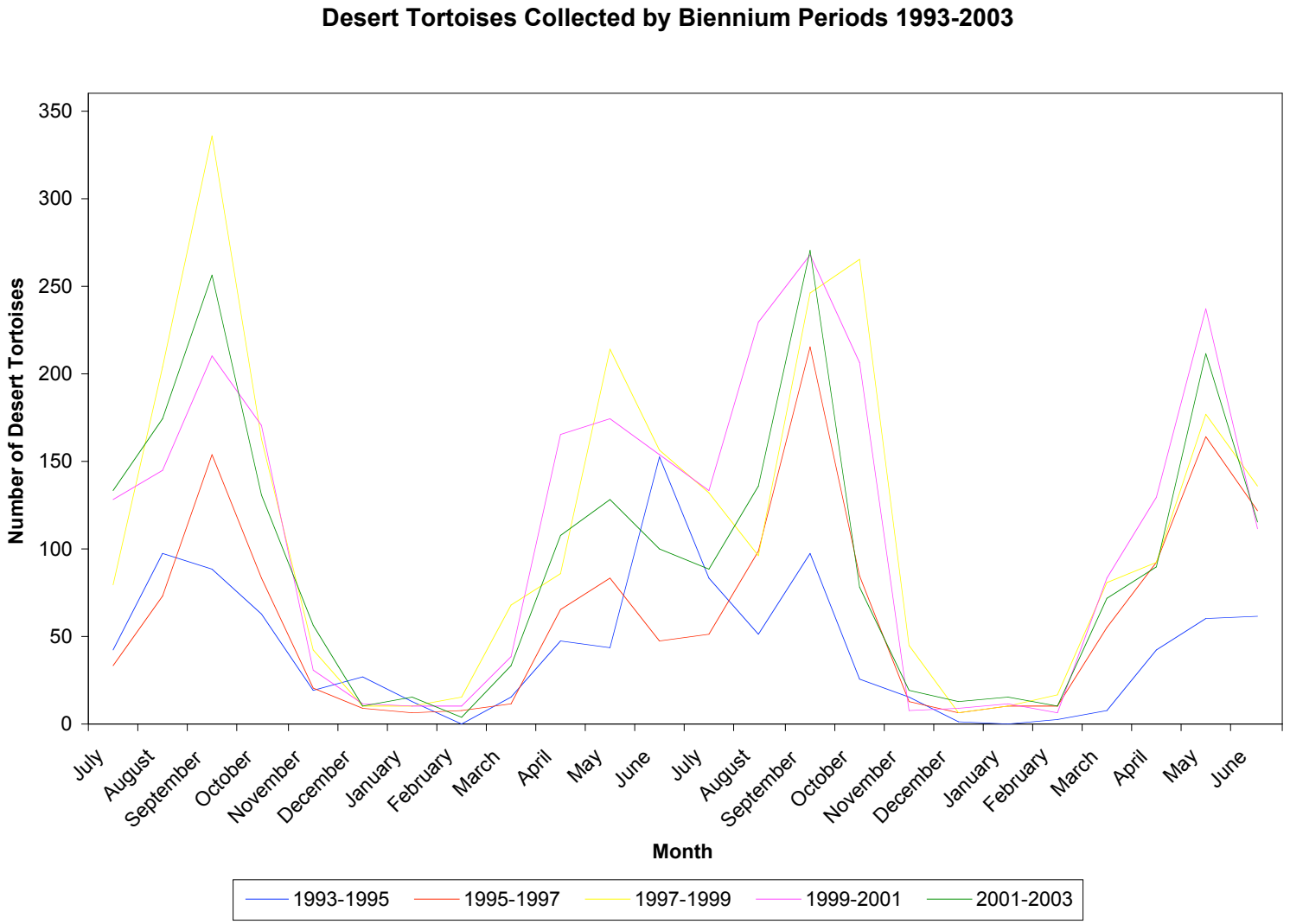


Figure 3. Number of desert tortoises (*G. agassizii*) collected during each month of the last five MSCHP Biennium Periods (1993-2003) in Clark County, Nevada. Graph shows a continual seasonal trend for incoming *G. agassizii* to the Desert Tortoise Transfer and Holding Facility.

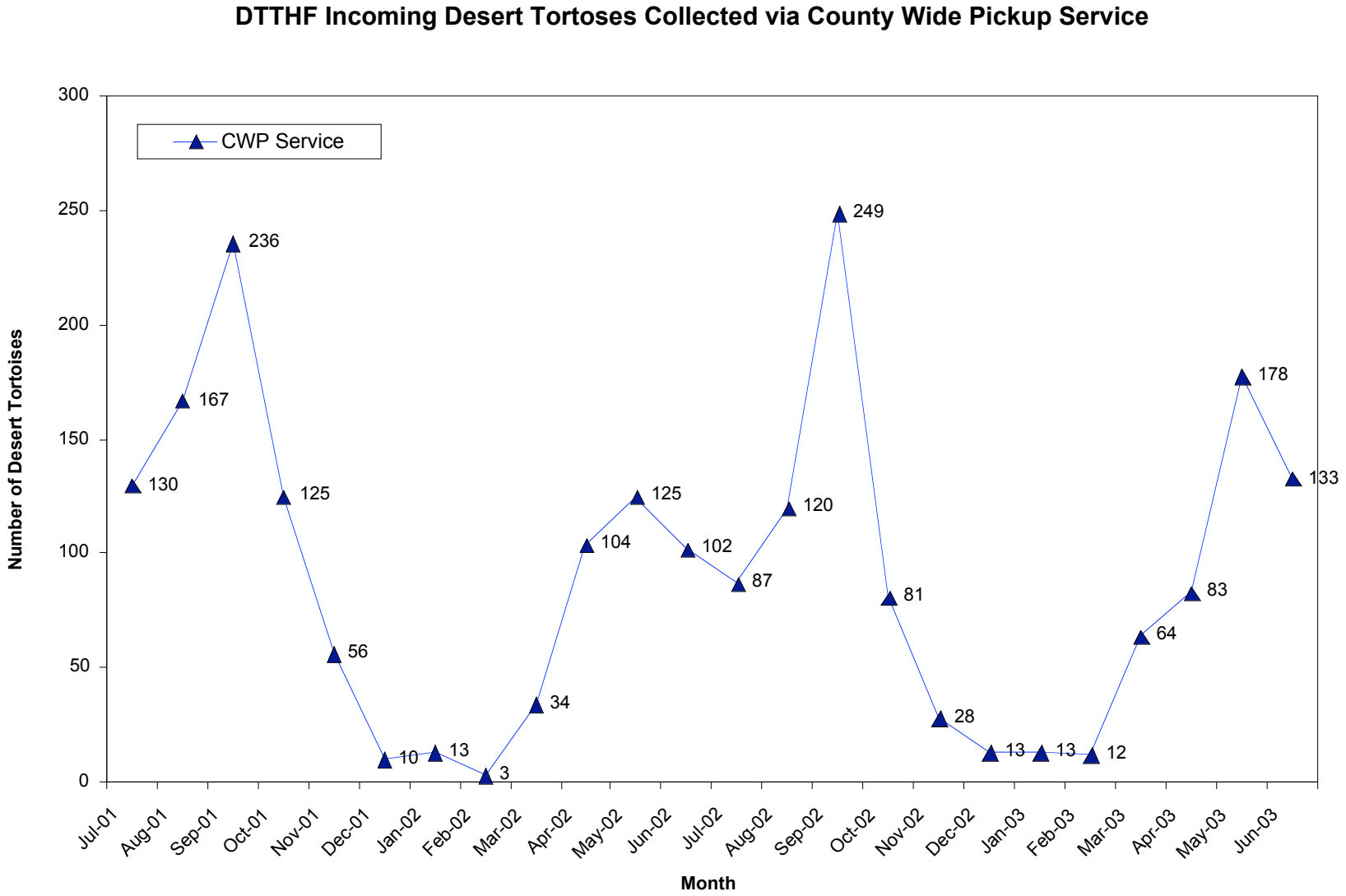


Figure 4. Number of desert tortoises (*G. agassizii*) collected by the county wide pick-up service for each month of the 2001-2003 MSHCP Biennium Period in Clark County, Nevada. Graph shows ongoing seasonal trend for incoming *G. agassizii* to the Desert Tortoise Transfer and Holding Facility.

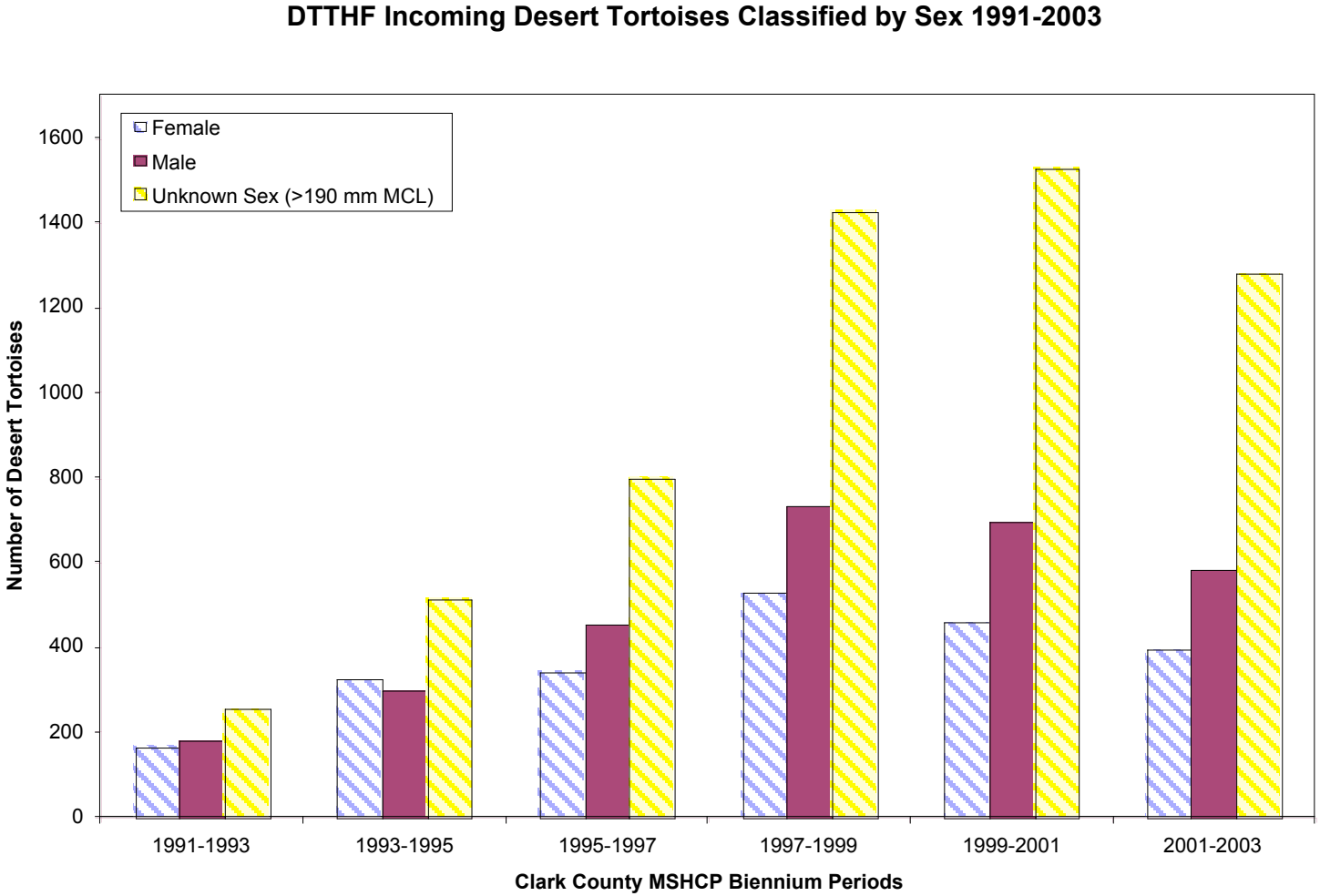


Figure 5. Number of desert tortoises (*G. agassizii*) collected by sex class for the last five MSCHP Biennium Periods (1993-2003) in Clark County, Nevada. *G. agassizii* begin to show secondary sex characteristics at ~18 to 25 years of age or approximately 180 to 200 mm Mean Carapace Length (MCL). For the purpose of this study, a tortoise that is of unknown sex is too young to sex by visual inspection. The sex ratios of all types of incoming *G. agassizzi* are about three males to every two females (1.00 : 0.68; respectively).

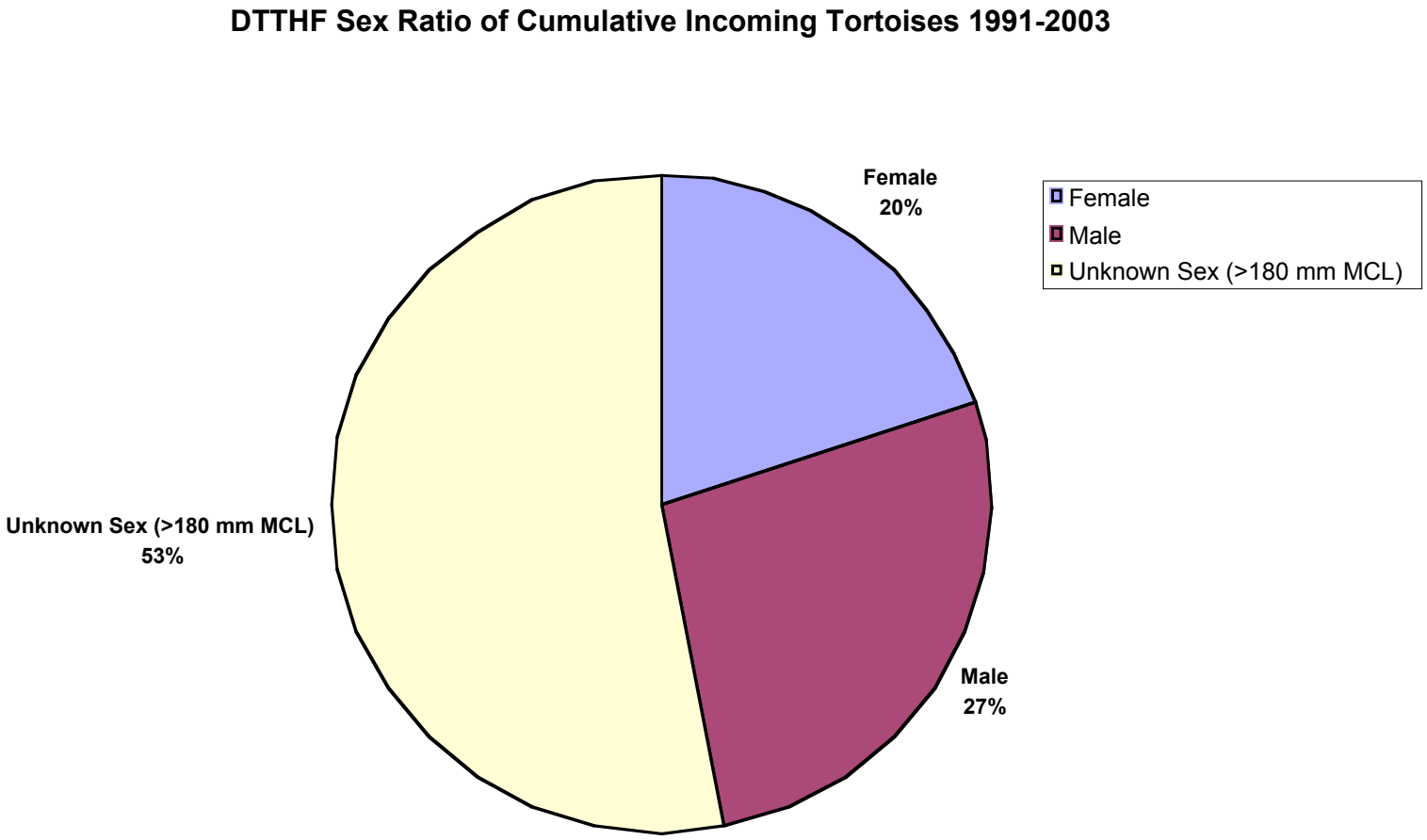


Figure 6. Percentage of desert tortoises (*G. agassizii*) collected by the Desert Tortoise Transfer and Holding Facility (DTTHF) throughout the last five MSCHP Biennium Periods (1993-2003) in Clark County, Nevada. Graph shows a greater percentage of unknown sex (<180 mm MCL) entering the facility from tortoises collected in the Las Vegas Valley.

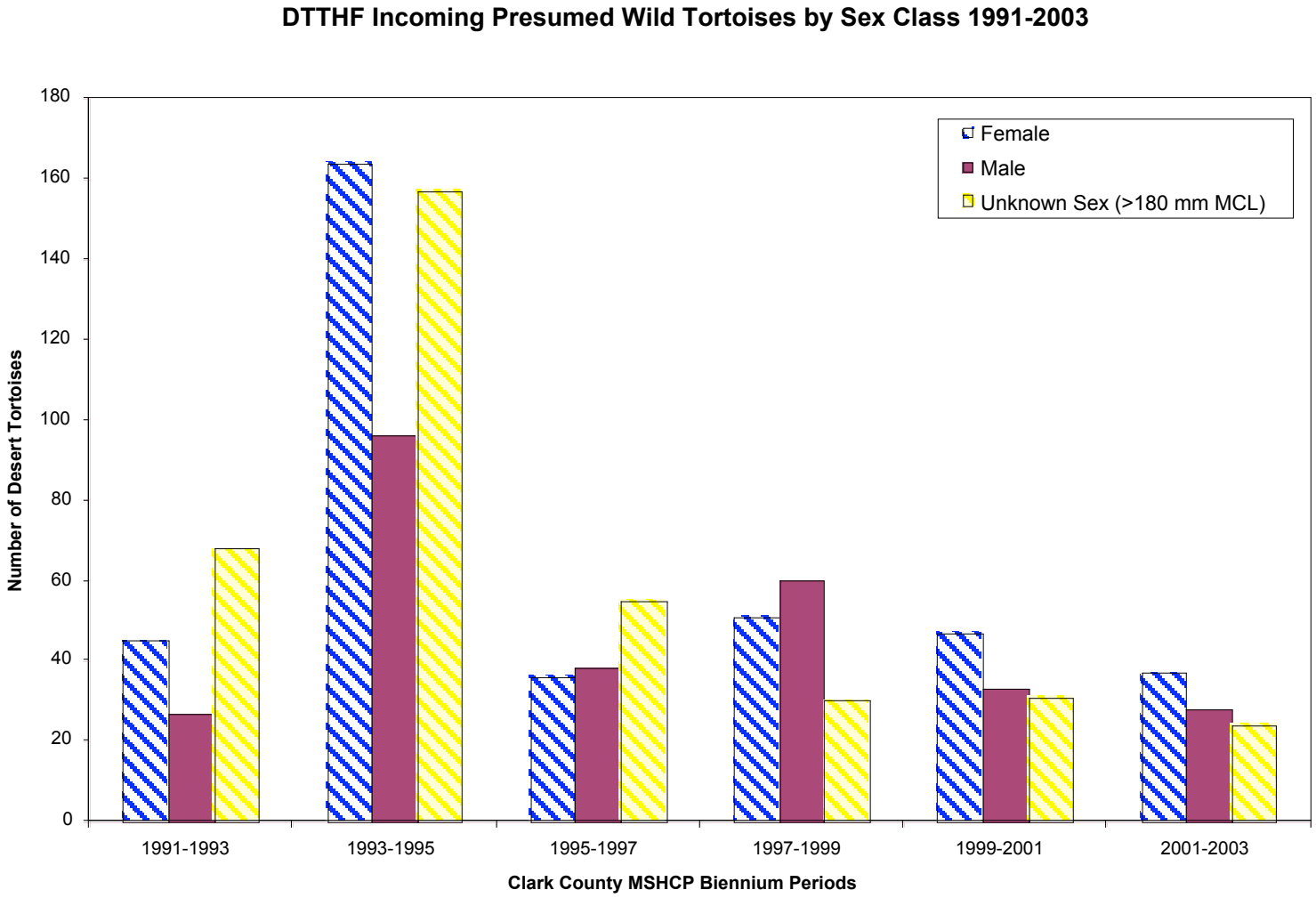


Figure 7. Number of presumed wild desert tortoises (*G. agassizii*) collected by the Desert Tortoise Transfer and Holding Facility during each biennium period (1991-2003) in Clark County, Nevada. Looking specifically at presumed wild incoming tortoises from 1991-2003, the sex ratio changes to approximately four females to every three males (1.00 : 0.72; respectively).

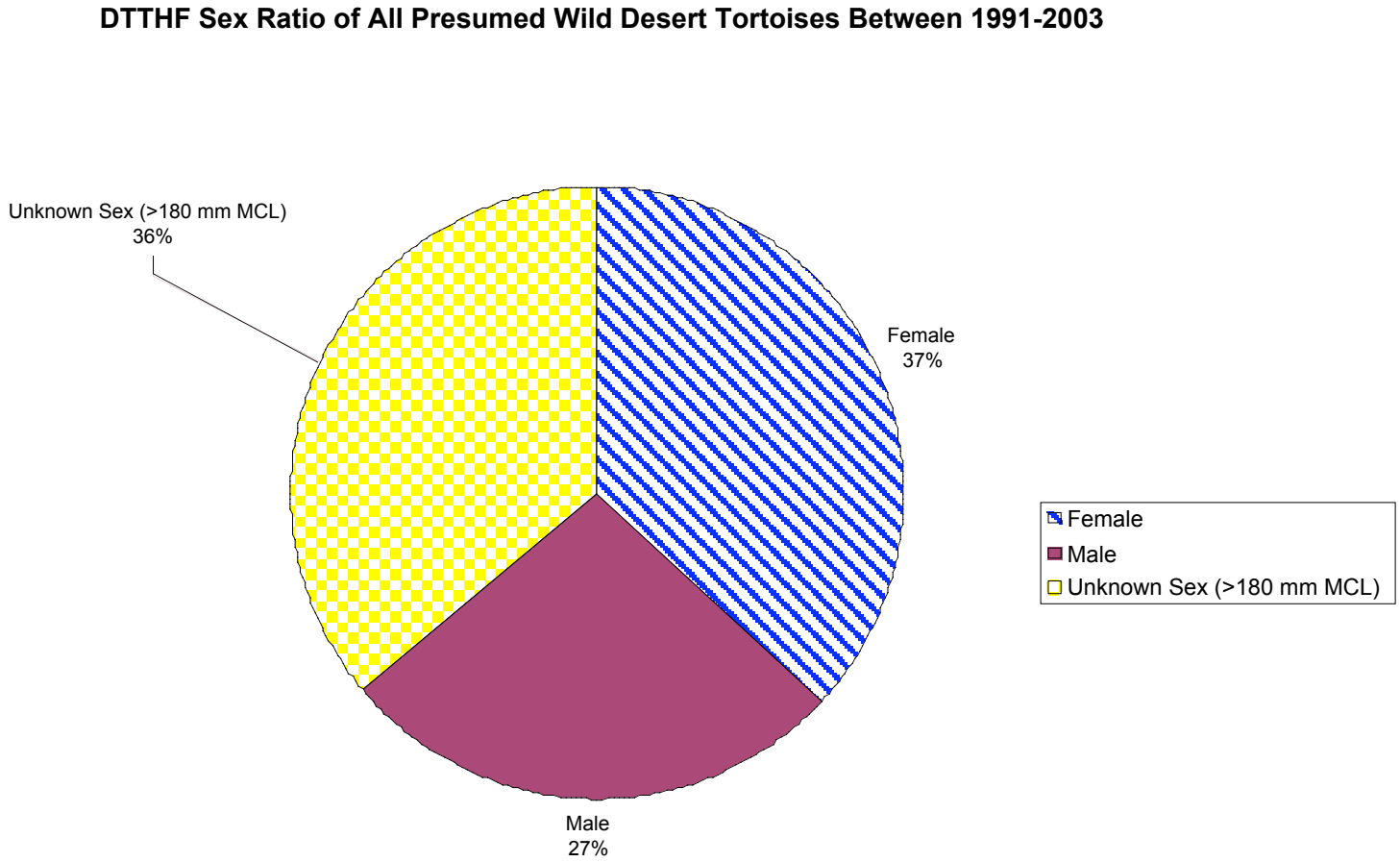


Figure 8. Percentage of desert tortoises (*G. agassizii*) collected by the Desert Tortoise Transfer and Holding Facility throughout 1991-2003 in Clark County, Nevada. The sex ratio of incoming presumed wild desert tortoises is approximately four females to every three males (1.00 : 0.72) respectively.

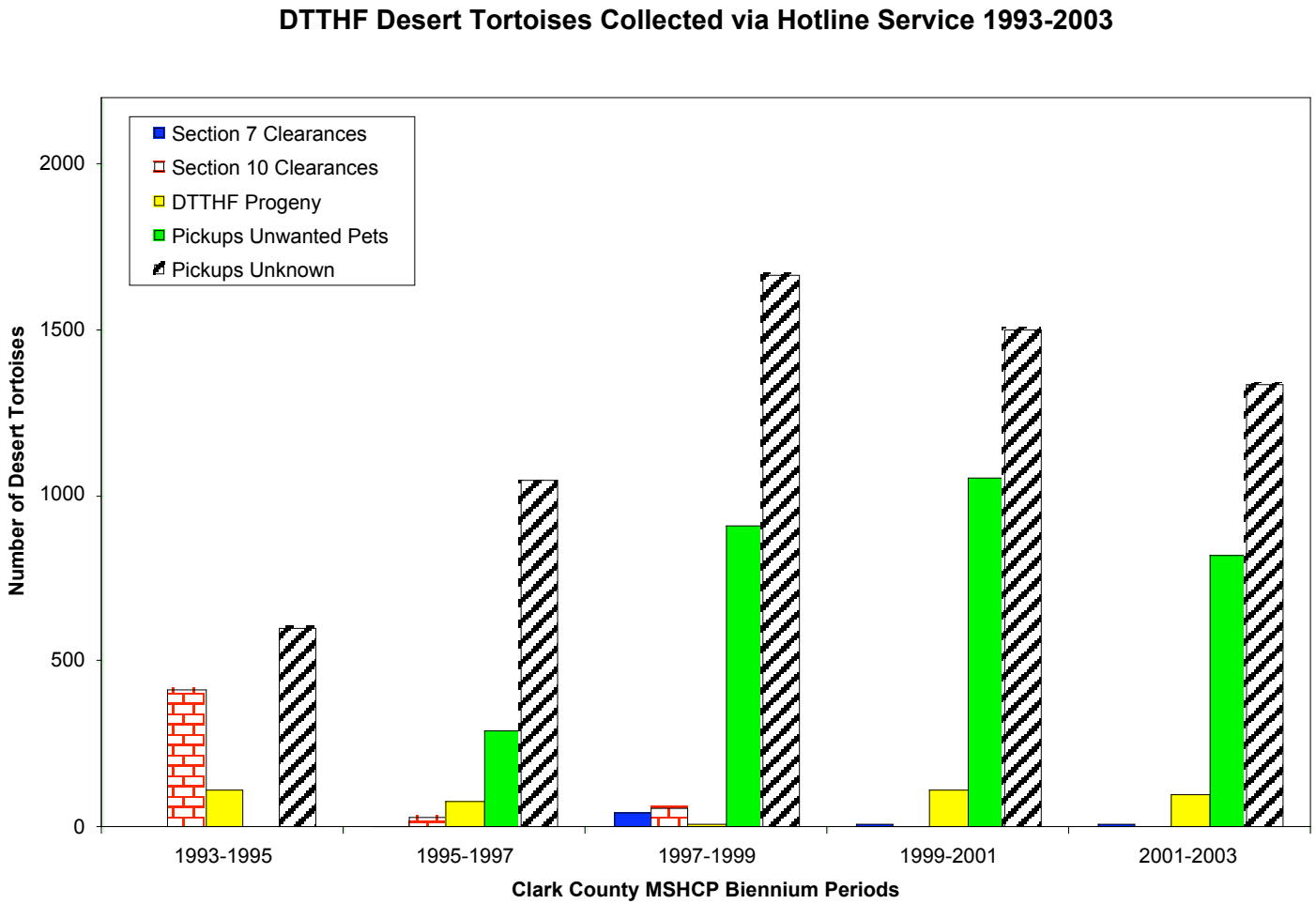


Figure 9. Number of desert tortoises (*G. agassizii*) collected by the countywide pickup service during each MSCHP Biennium Period (1993-2003) in Clark County, Nevada. Graph shows a substantial increase in pet tortoise collections by the Desert Tortoise Transfer and Holding Facility throughout the last three biennium periods (1997-2003). Minimal tortoises have entered the DTTHF from Section 10 and Section 7 clearances.

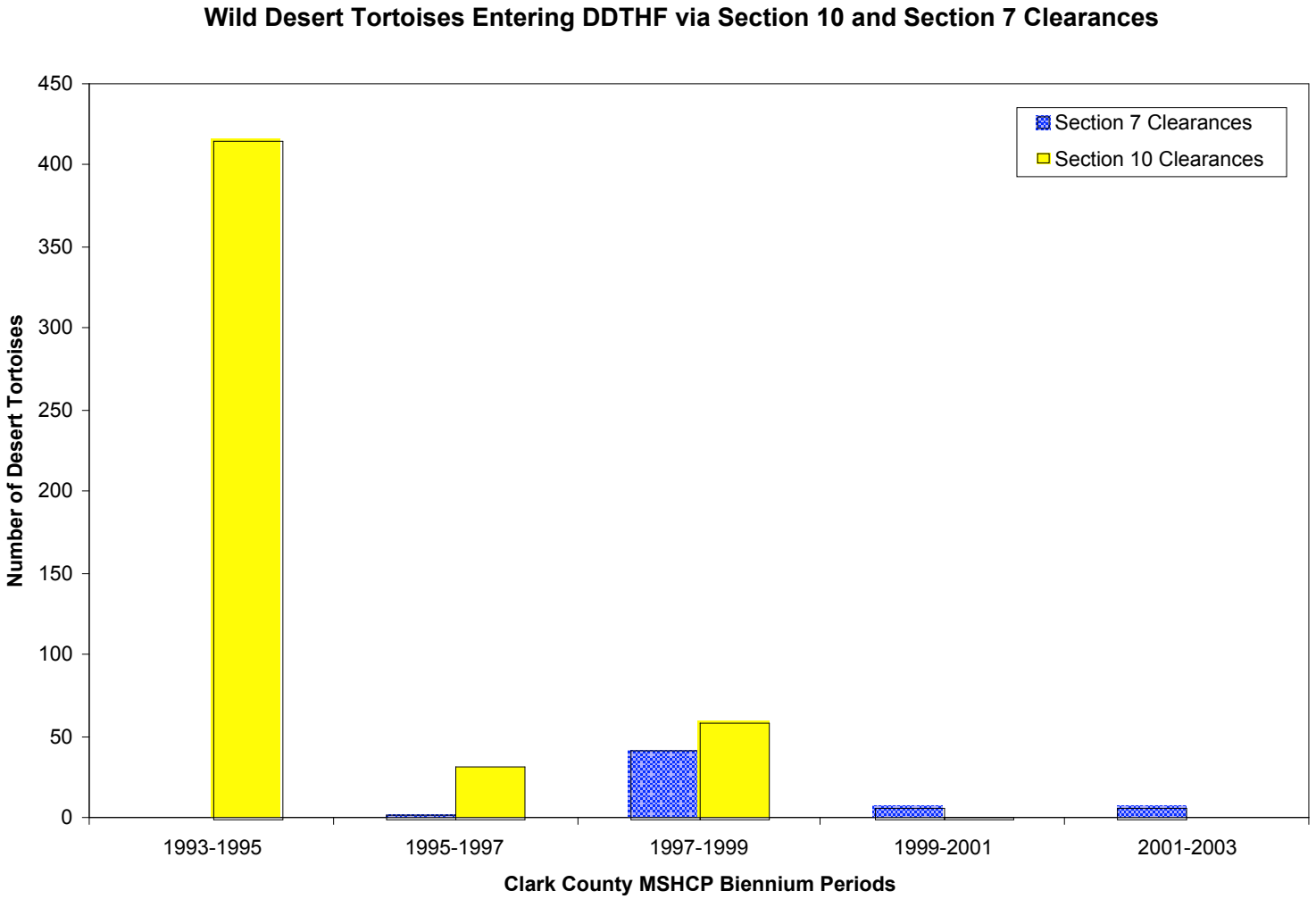


Figure 10. Number of desert tortoises (*G. agassizii*) collected from Section 7 and Section 10 clearances during each MSCHP Biennium Period (1991-2003) in Clark County, Nevada. Graph shows a substantial decrease in both Section 7 and Section 10 tortoise collections in the last two biennium periods (1999-2003). Modifications in desert tortoise handing protocol for Section 7 clearances as well as the discontinuation of mandatory Section 10 clearances on private lands as well are resulted in decrease of tortoises transferred to the Desert Tortoise Transfer and Holding Facility

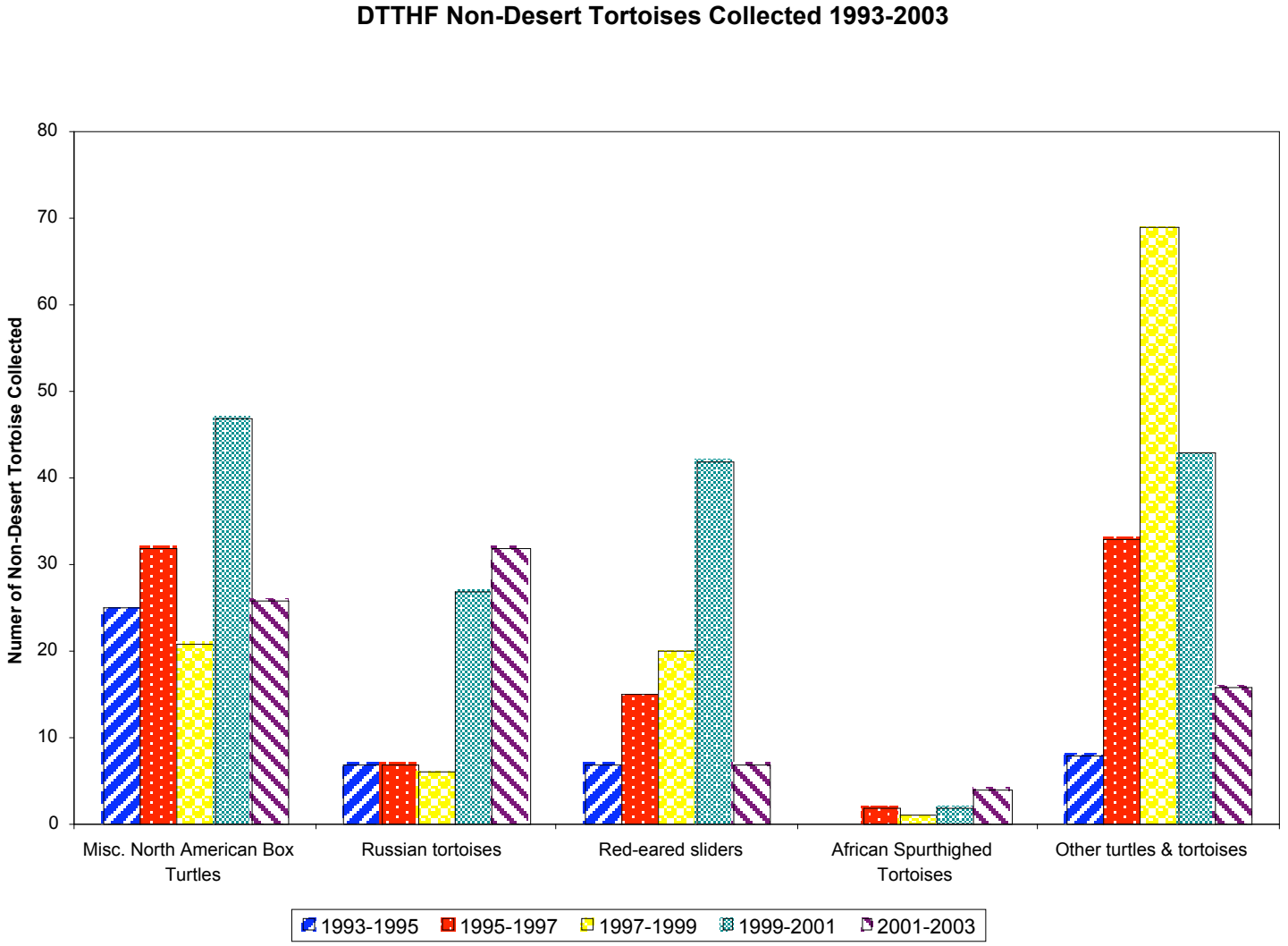


Figure 11. Number of non-desert tortoises collected by the countywide pickup service for each MSCHP Biennium Period (1993-1995) in Clark County, Nevada. Non-desert tortoises picked up by the hotline service represent individual cases where concerned citizens cannot determine if they have a desert tortoise. These exotic animals often escape or are released and found in areas such as roadsides, sidewalks, or yards.

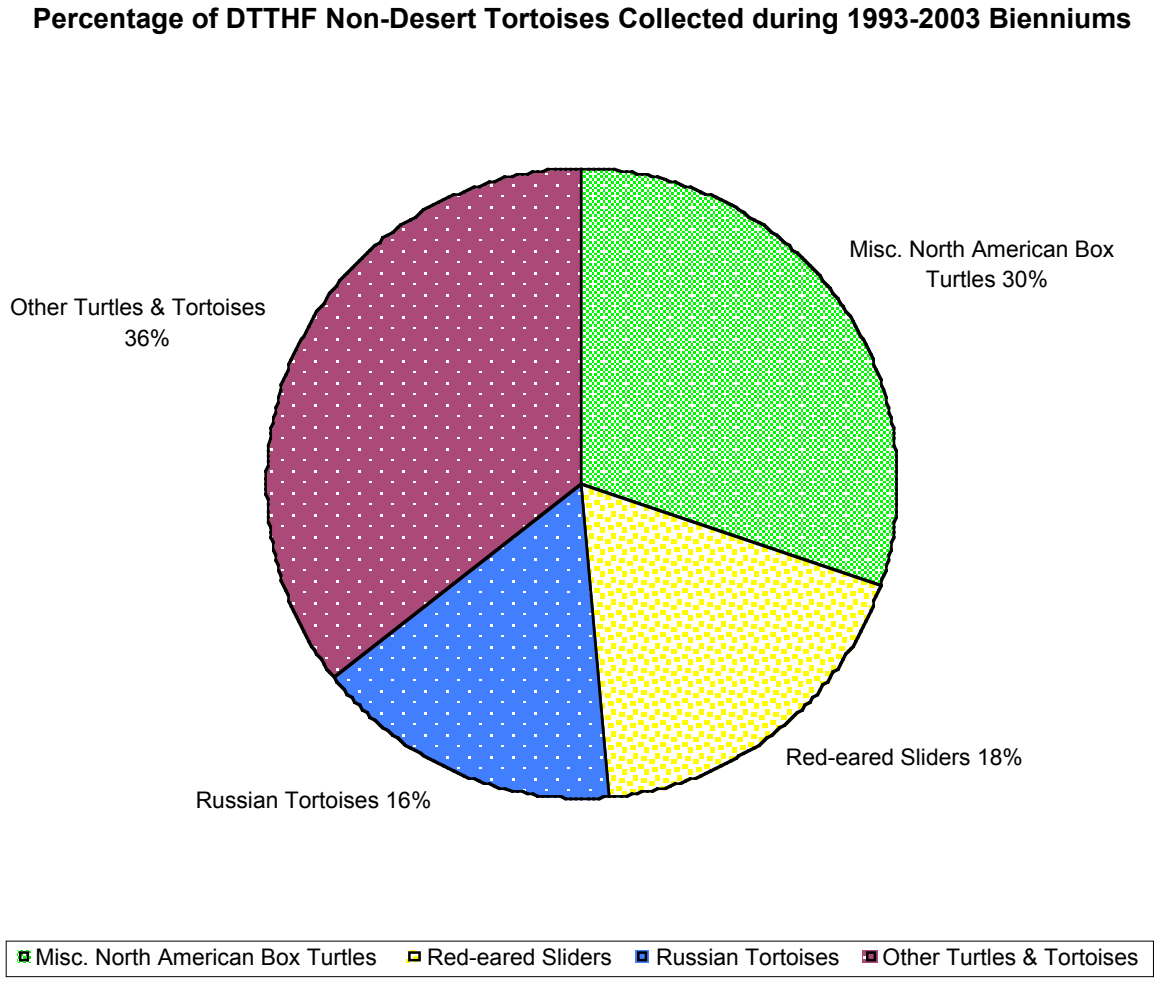


Figure 12. Percentage of non-desert tortoise collections by the countywide pickup service by category collected throughout the last five MSCHP biennium periods (1993-2003) in Clark County, Nevada. The countywide pickup service only collects non-desert tortoise species when concerned citizens are unable to distinguish between desert tortoise and exotic species.

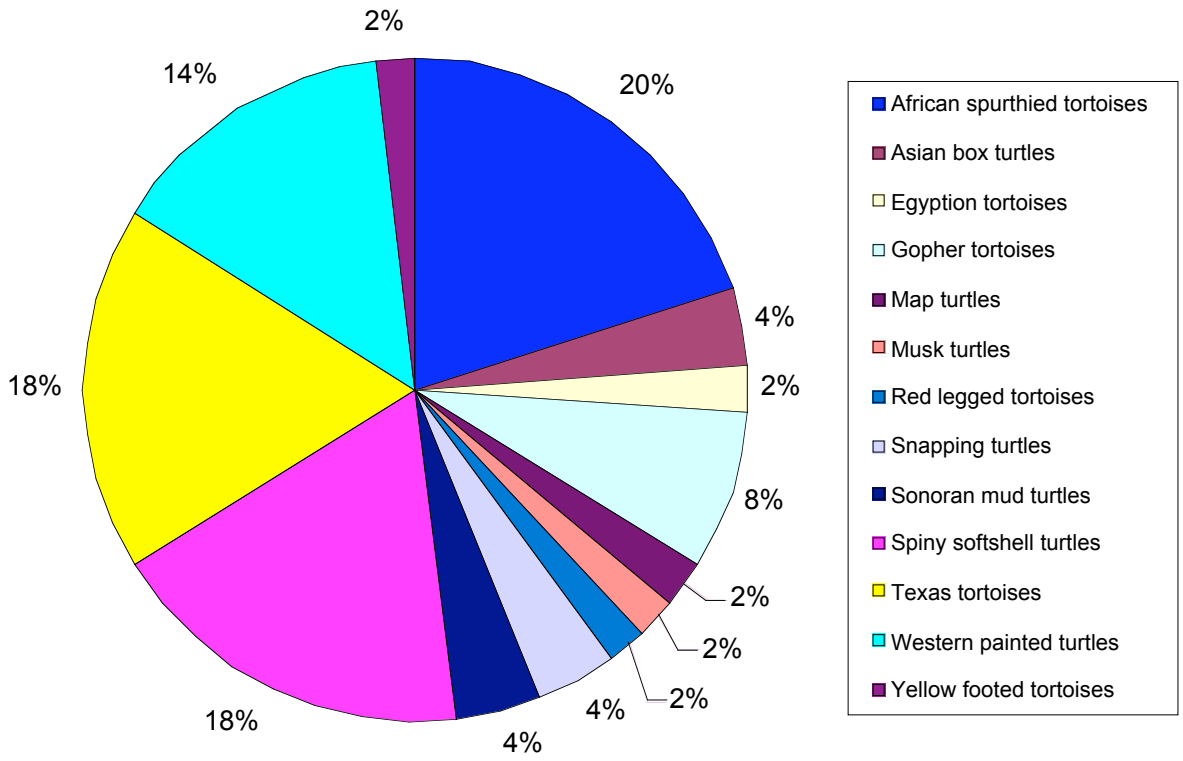


Figure 13. Percentage of known "Other Turtles and Tortoises" indentified and collected by the countywide pickup service throughout the last five MSCHP Biennium Periods (1993-2003) in Clark County, Nevada. Data indicates a greater percentage of African spurthighed tortoises and spiny softshell turtles are collected by the countywide pickup service by concerned citizens. The pickup service only collects non-desert tortoise species when concerned citizens are unable to distinguish between desert tortoise and exotic species.

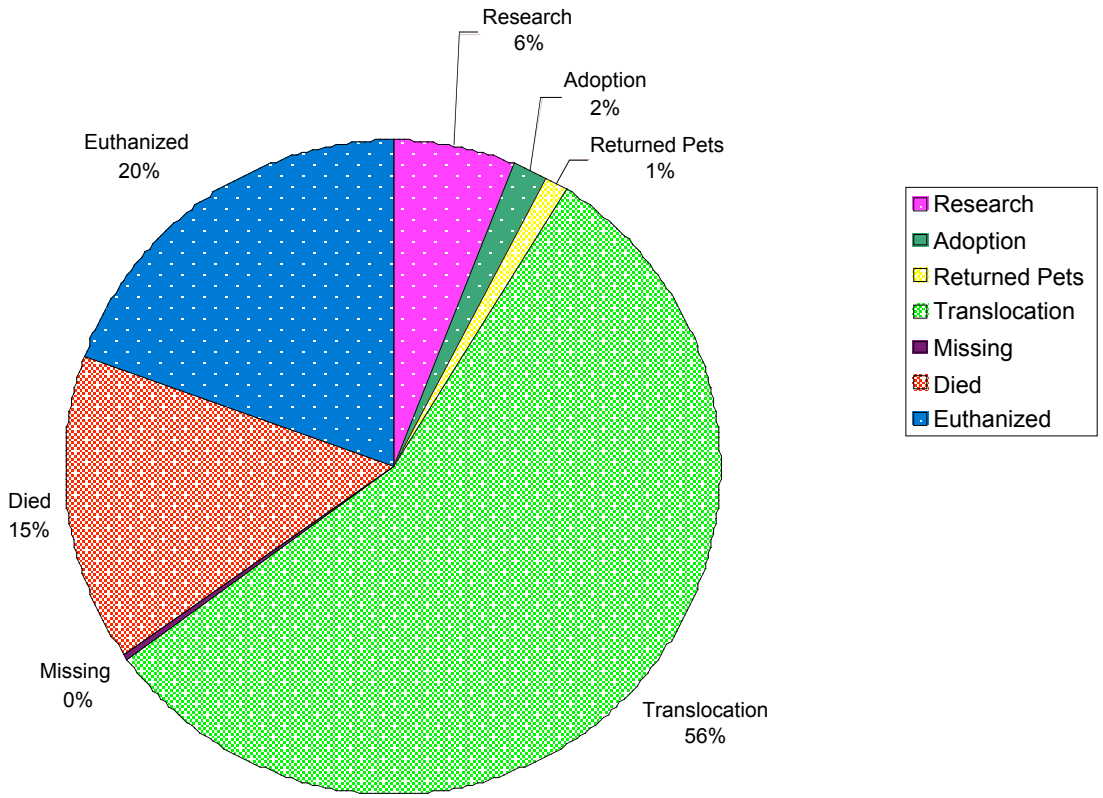


Figure 14. Percentage of desert tortoises (*G. agassizii*) that were transferred, died, euthanized, or determined missing by the Desert Tortoise Transfer and Holding Facility throughout the 2001-2003 Biennium Period in Clark County, Nevada. Approximately 65% of tortoises were transferred to research, adoption, and translocation programs.

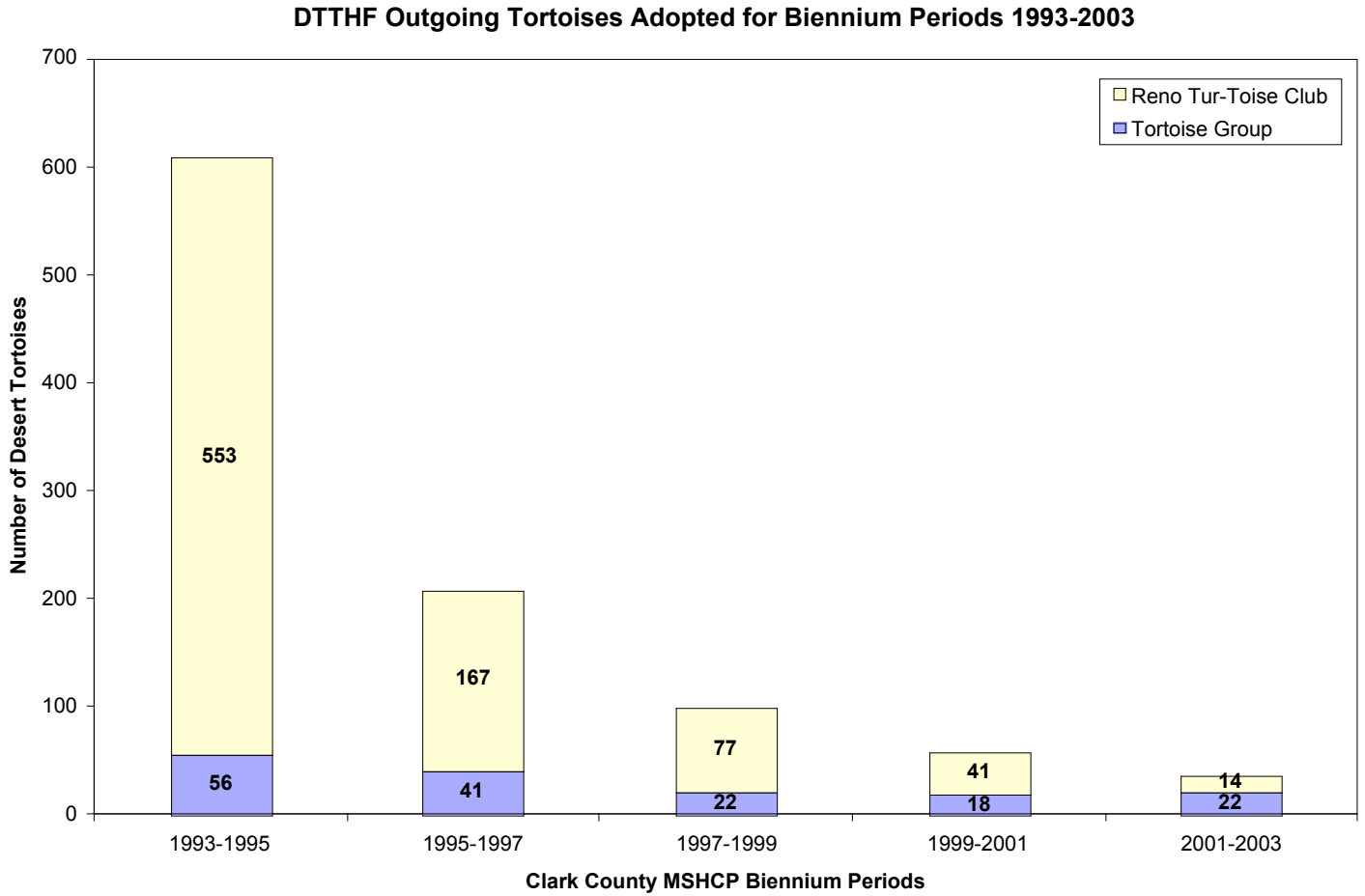


Figure 15. Number of desert tortoises (*G. agassizii*) transferred to Tortoise Group and Reno Tur-Toise Club Adoption Programs during each MSCHP Biennium Period (1993-2003). Desert tortoise adoptions have become less of a priority since the implementation of the translocation program in the spring of 1997. Even with the shift in disposition priorities, the tortoise adoption program receives all requested tortoises from the Desert Tortoise Transfer and Holding Facility.

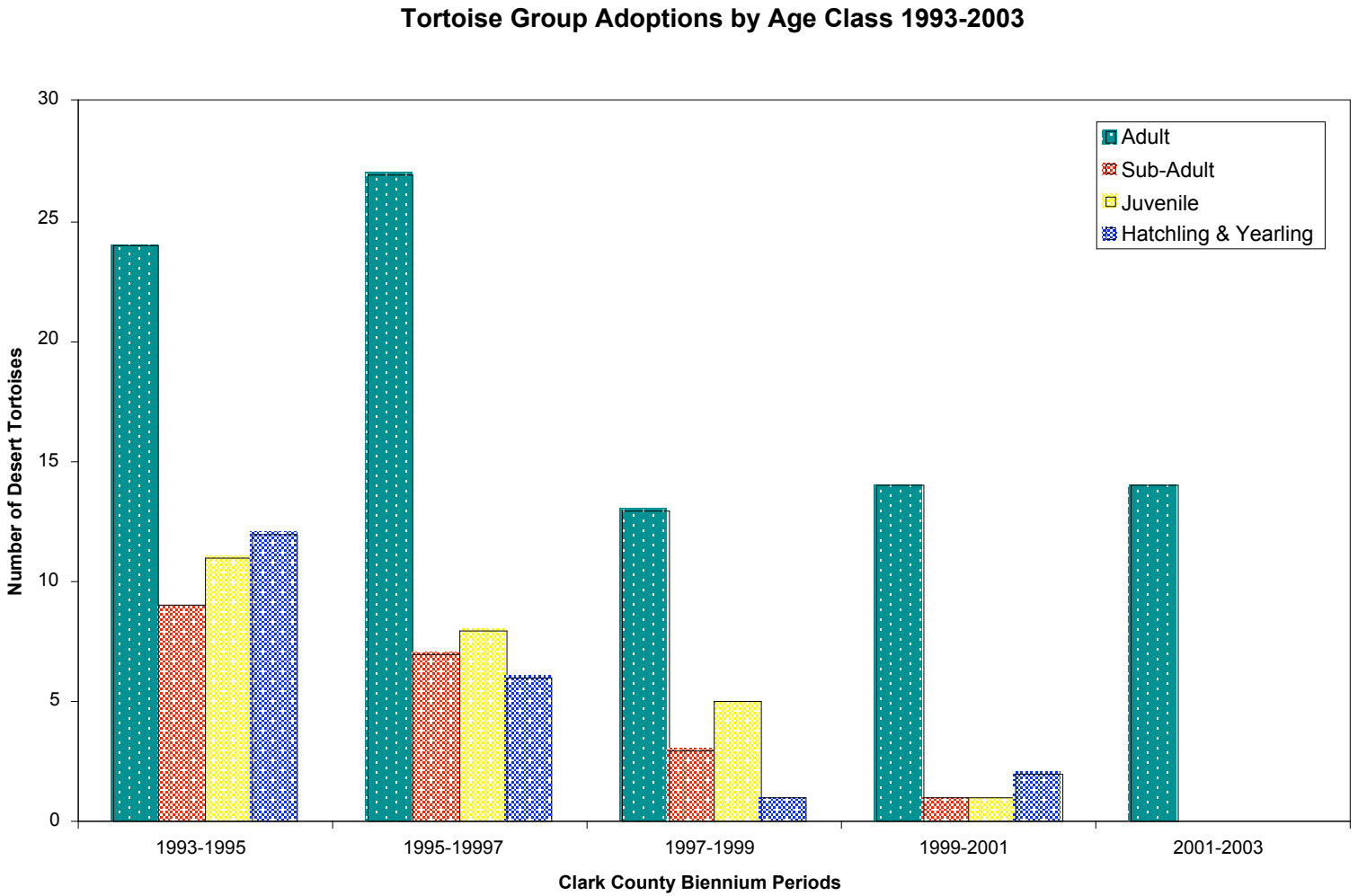


Figure 16. Number of desert tortoises (*G. agassizii*) transferred from the Desert Tortoise Transfer and Holding Facility in Clark County, Nevada to the Tortoise Group Adoption Program by age class for each MSCHP Biennium Period. Data indicates that a greater number of adult tortoises were requested by Tortoise Group for adoption

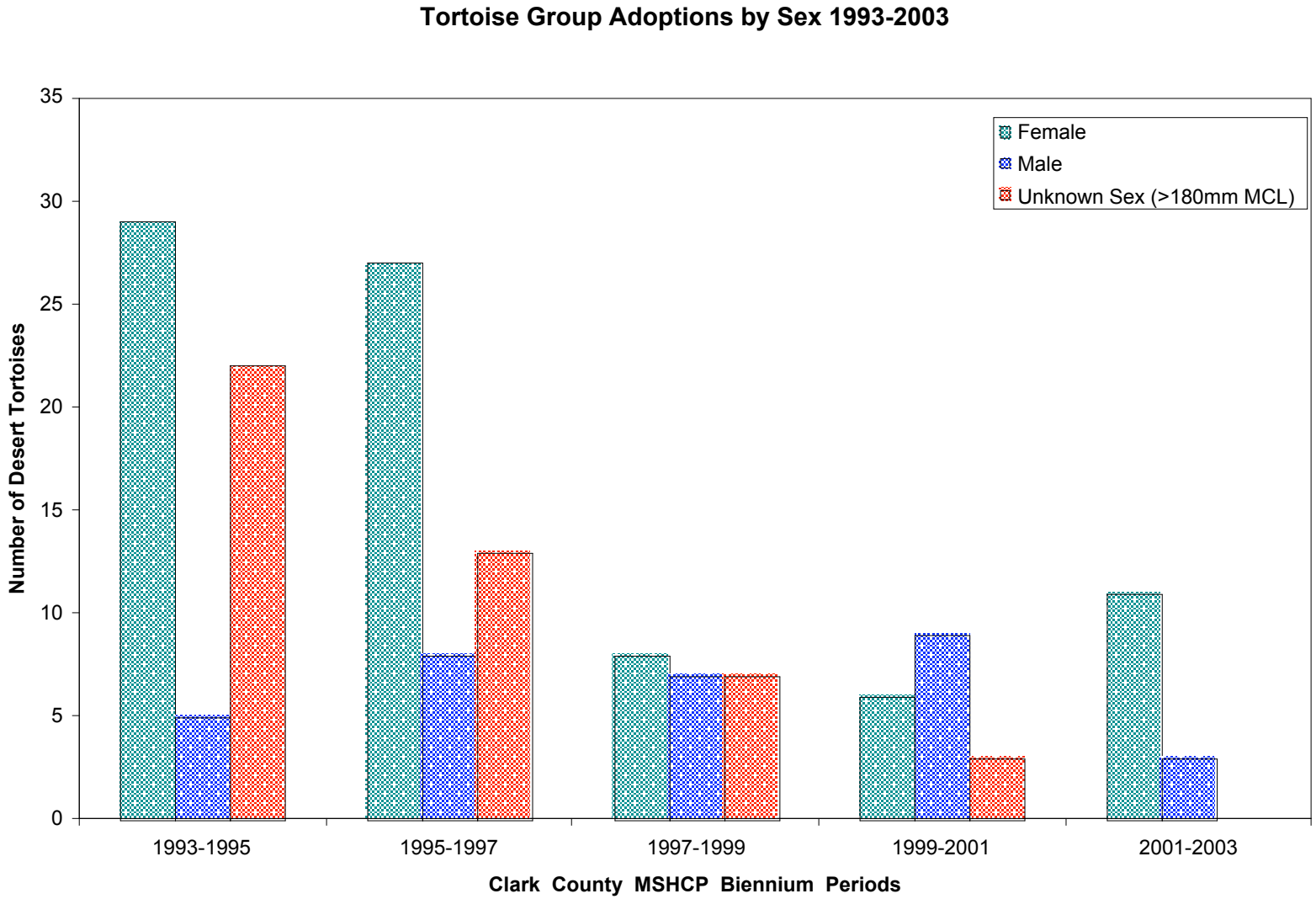


Figure 17. Number of desert tortoises (*G. agassizii*) transferred from the Desert Tortoise Transfer and Holding Facility in Clark County, Nevada to the Tortoise Group Adoption Program by sex class for each MSCHP Biennium Period. The tortoise Group has historically adopted a greater percentage of females for adoption.

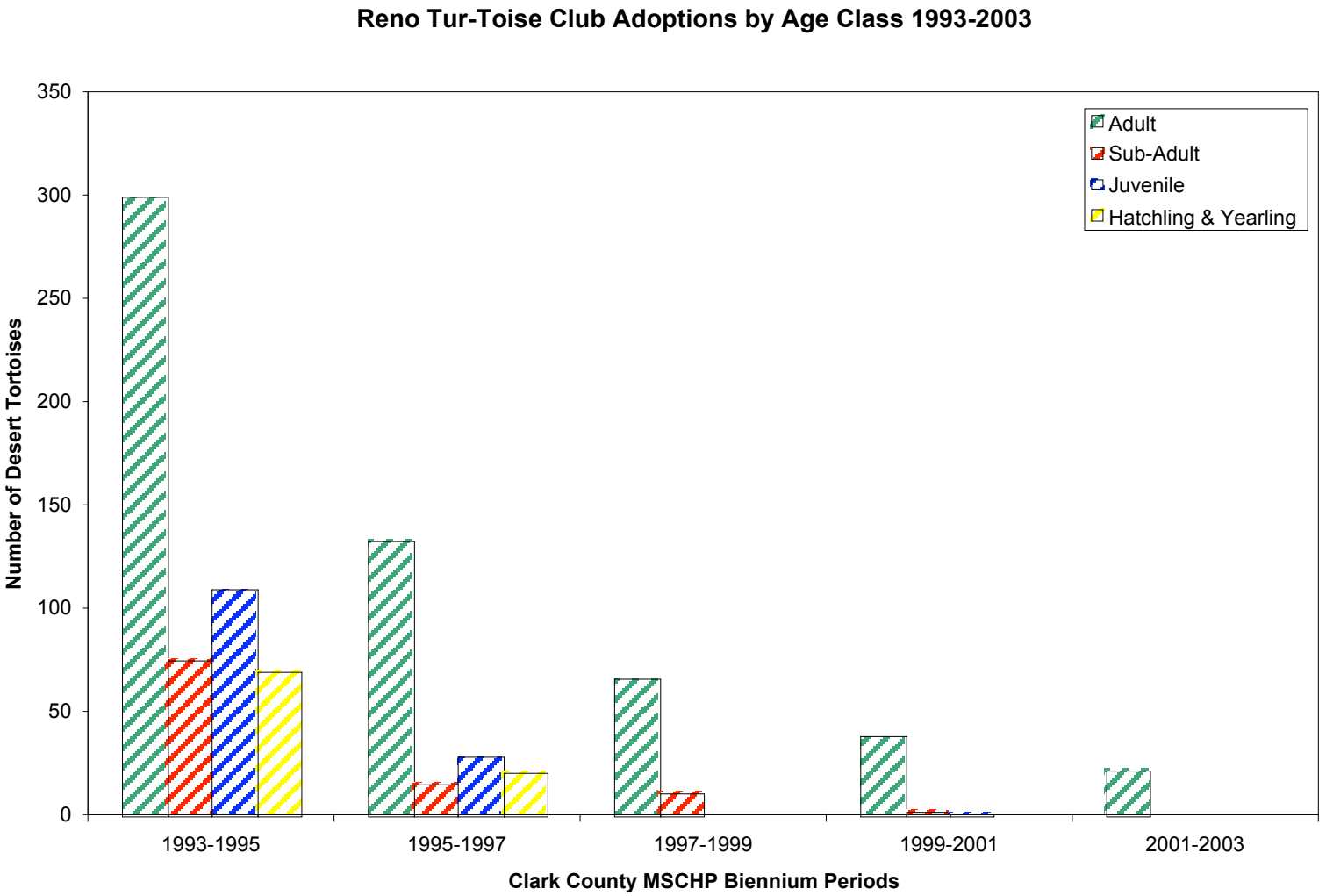


Figure 18. Number of desert tortoises (*G. agassizii*) transferred from the Desert Tortoise Transfer and Holding Facility in Clark County, Nevada to the Reno Tur-Toise Adoption Program in Reno, Nevada by age class for each MSCHP Biennium Period. Data indicates that a greater number of adult tortoises were requested for adoption.

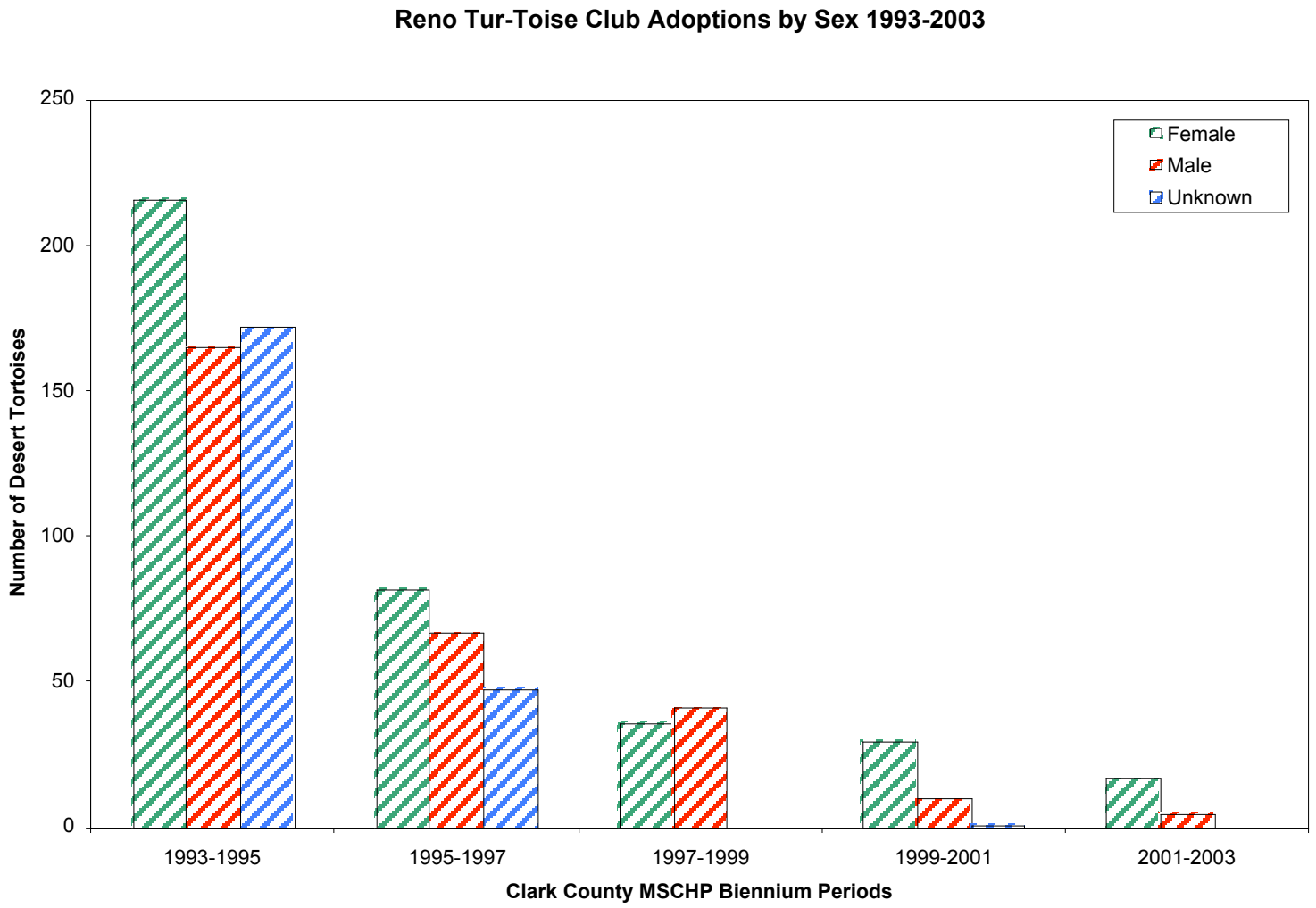


Figure 19. Number of desert tortoises (*G. agassizii*) transferred from the Desert Tortoise Transfer and Holding Facility in Clark County, Nevada to the Reno Tur-Toise Adoption Program in Reno, Nevada by sex class for each MSCHP Biennium Period. Reno Tur-Toise Club has historically adopted greater percentage of females for adoption.

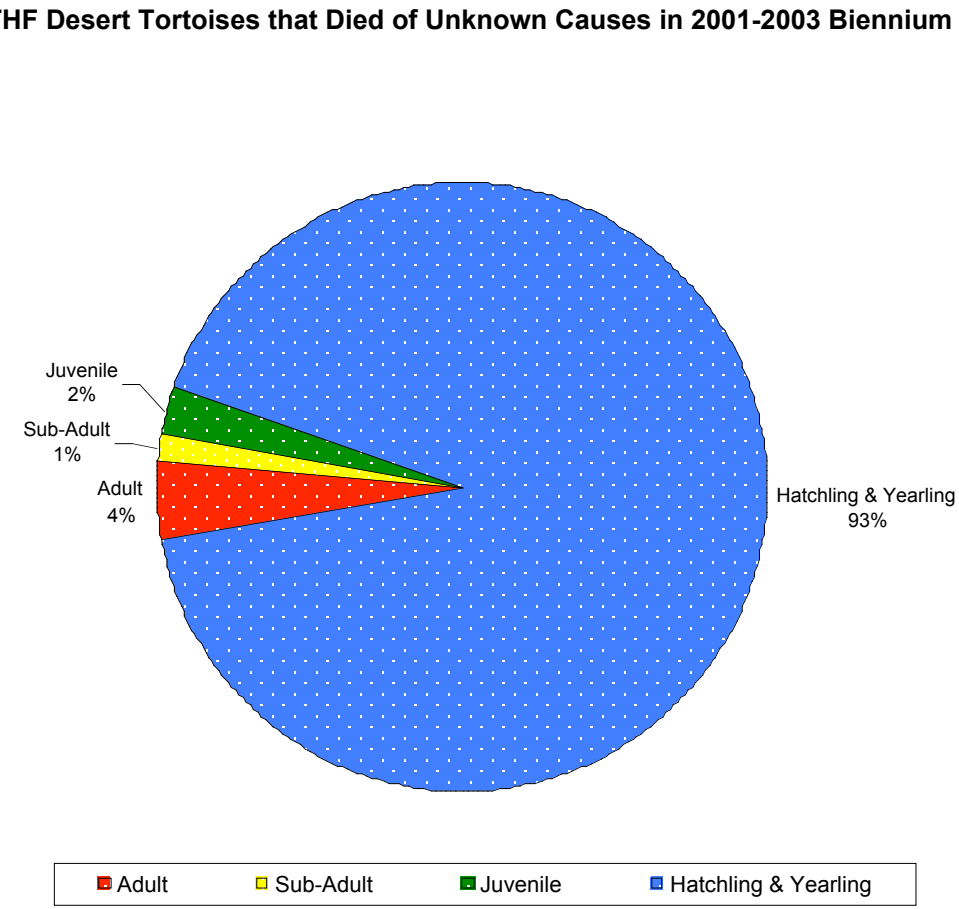


Figure 20. Percentage of desert tortoises (*G. agassizii*) that died of unknown causes at the Desert Tortoise Transfer and Holding Facility in Clark County, Nevada during the 2001-2003 Biennium. The majority of hatchlings and yearlings were victims of drastic changes in ambient temperatures, malnutrition and poor care prior to entering the DTTHF, and increased mortality rates in the hatchling and yearling age class.

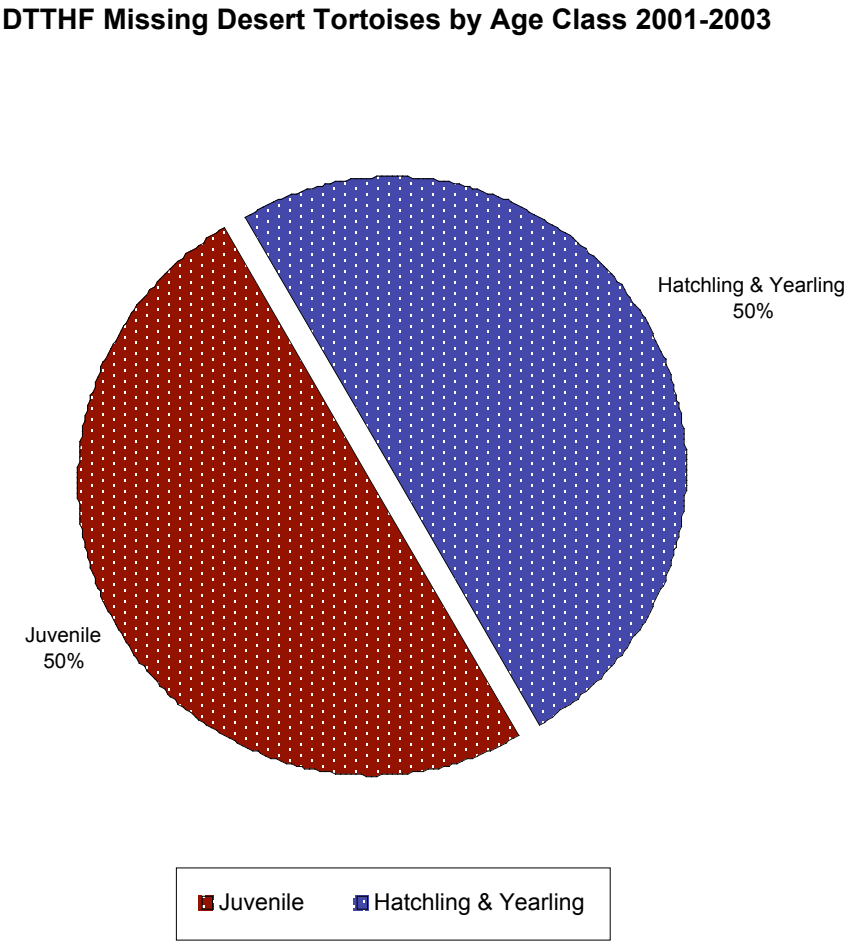


Figure 21. Percentage of desert tortoises (*G. agassizii*) that were declared missing at the Desert Tortoise Transfer and Holding Facility during the 2001-2003 MSCHP Biennium Period in Clark County, Nevada. Presumably missing tortoises were products of predation at the DTTHF and Desert Tortoise Conservation Center.

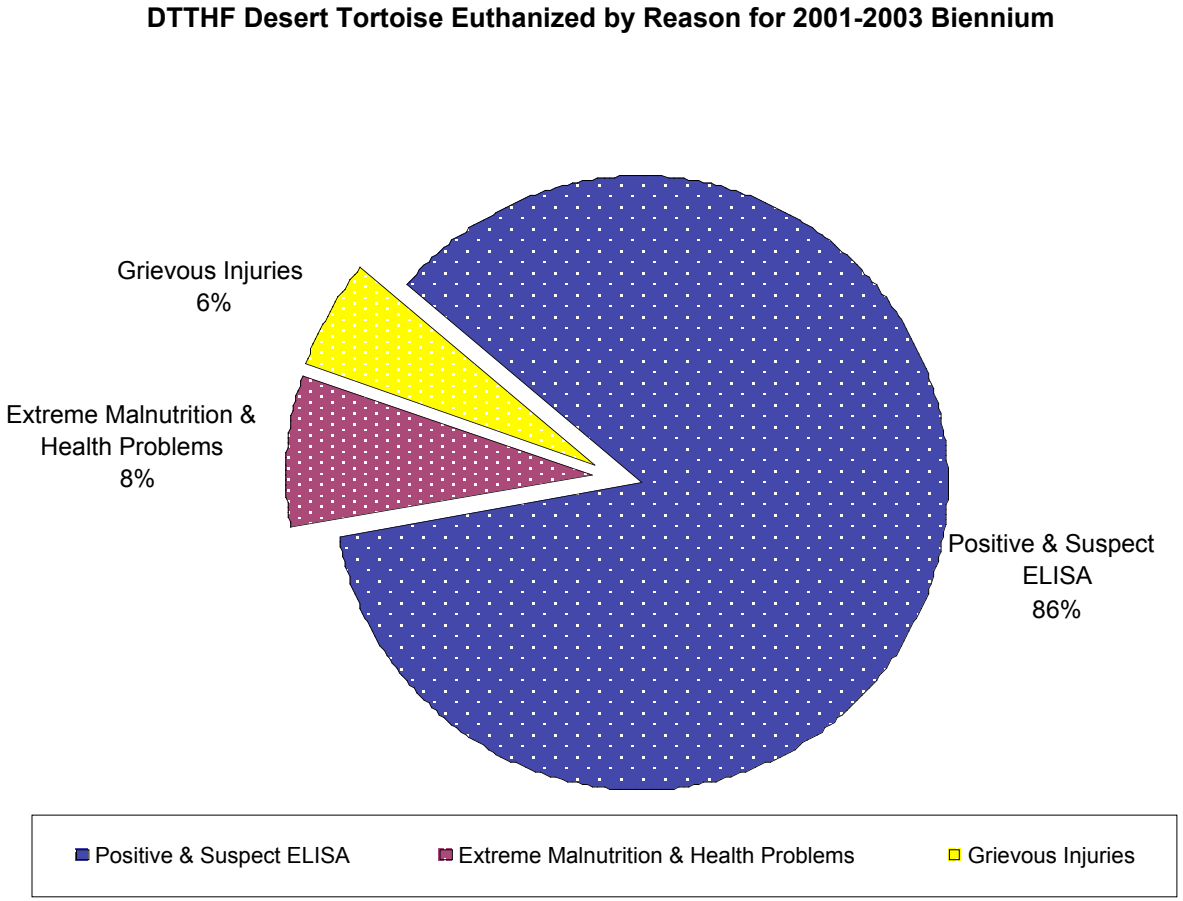


Figure 22. Percentage of desert tortoises (*G. agassizii*) that were euthanized by reason at the Desert Tortoise Transfer and Holding Facility during the 2001-2003 MSCHP Biennium Period in Clark County, Nevada.

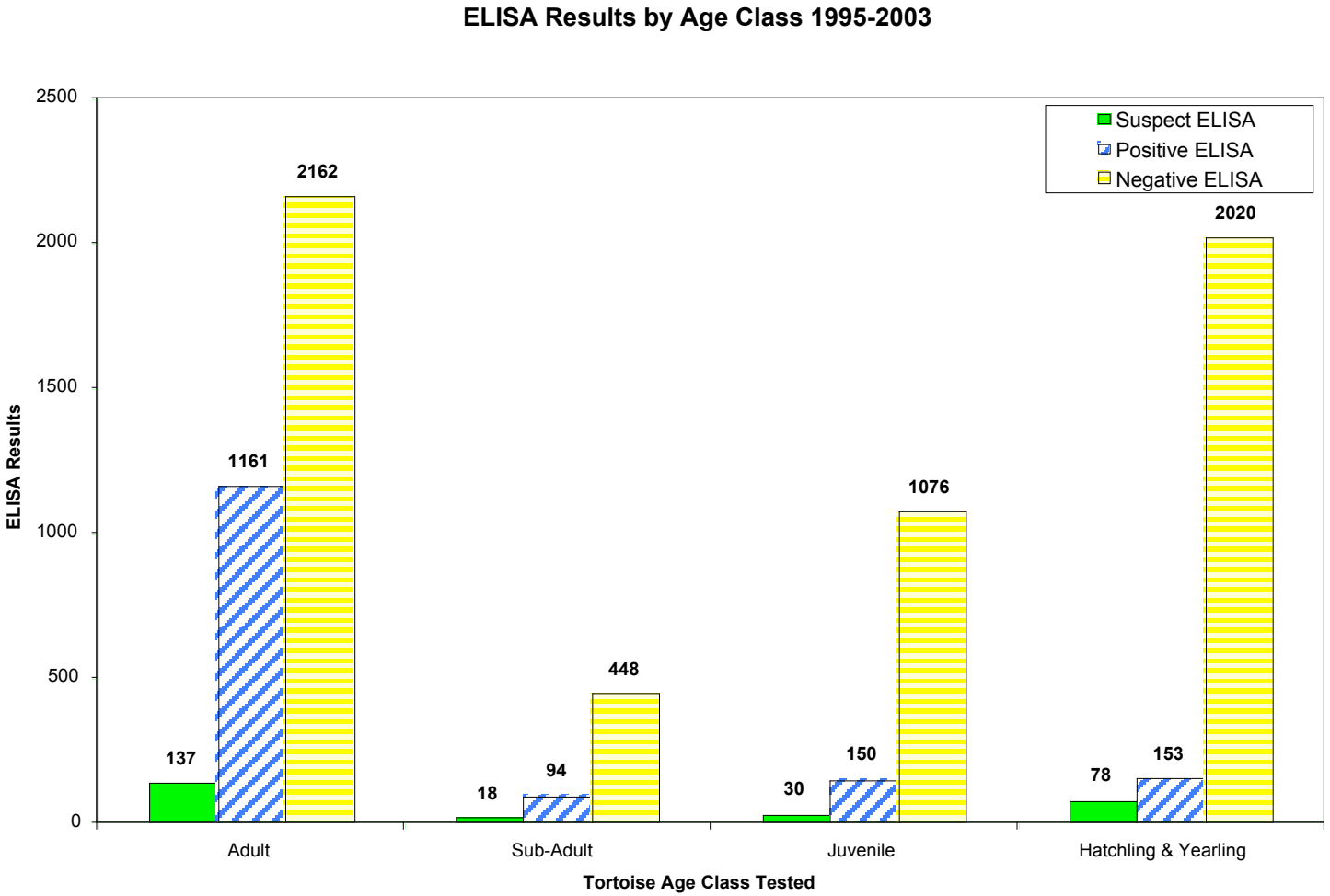


Figure 23. ELISA results for desert tortoise (*G. agassizii*) entering the Desert Tortoise Transfer and Holding Facility from 1995-2003 in Clark County, Nevada. Results indicate a significantly higher number of ELISA negative tortoises enter the facility than tortoises exhibiting ELISA suspect or ELISA positive results.

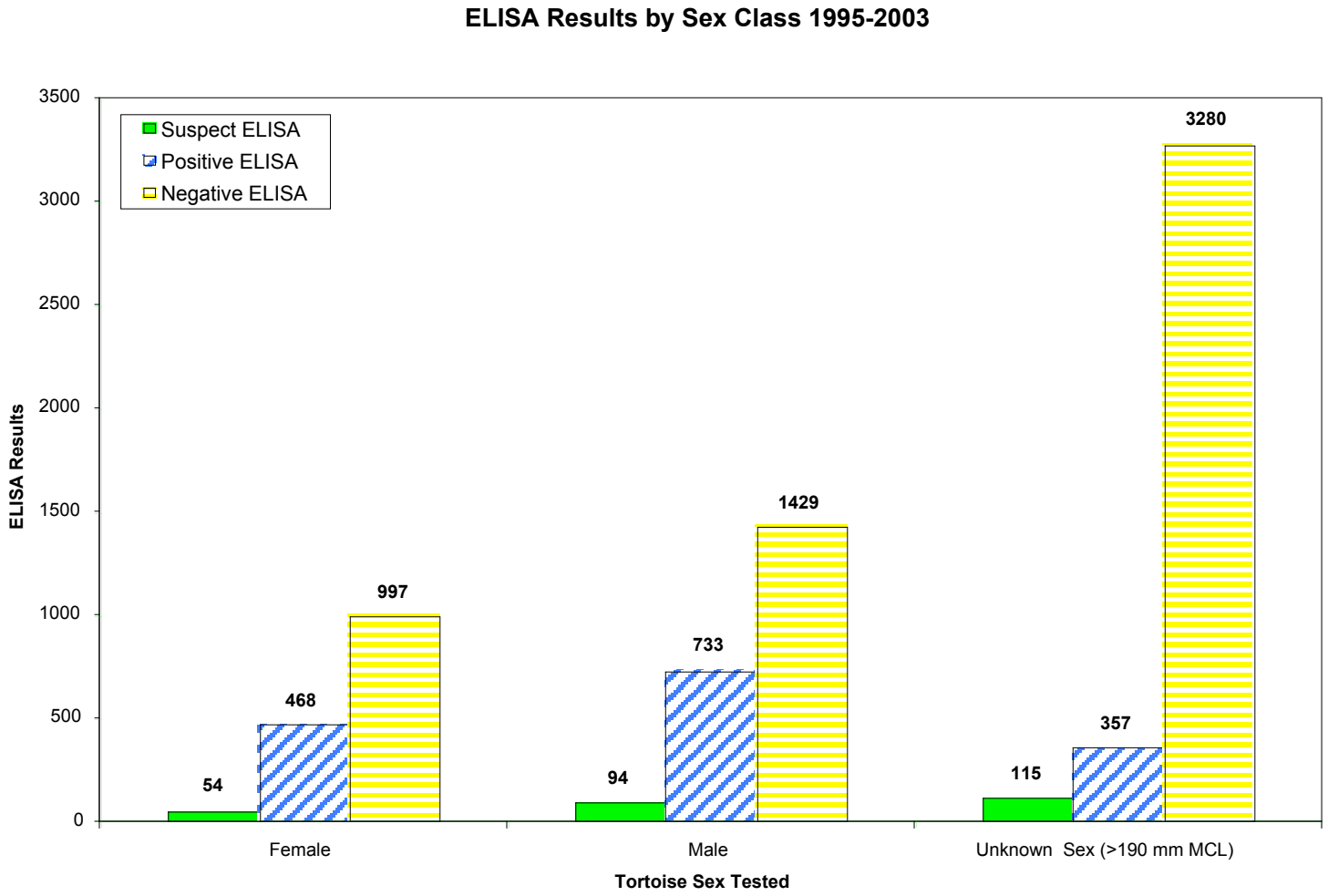


Figure 24. ELISA results for desert tortoise (*G. agassizii*) entering the Desert Tortoise Transfer and Holding Facility from 1995-2003 in Clark County, Nevada. Results indicate a comparable distribution of ELISA test results between all categories of sex. A significantly higher number of ELISA negative tortoises in each sex category enter the facility than tortoises exhibiting ELISA suspect or ELISA positive results.

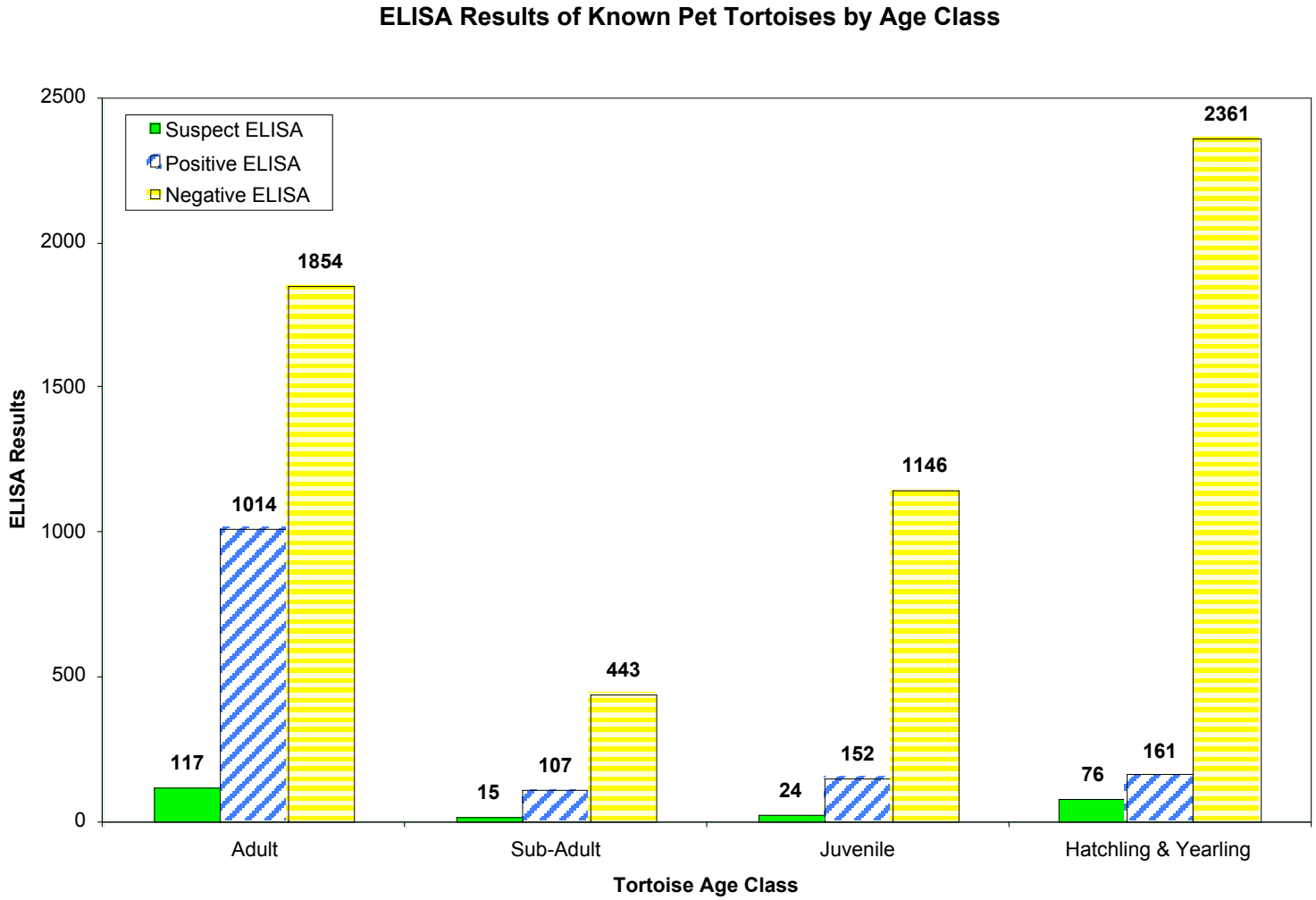


Figure 25. ELISA results for known pet desert tortoises (*G. agassizii*) entering the Desert Tortoise Transfer and Holding Facility from 1995-2003 in Clark County, Nevada. Results indicate a significantly higher number of ELISA negative tortoises enter the facility than tortoises exhibiting ELISA suspect or ELISA positive results.

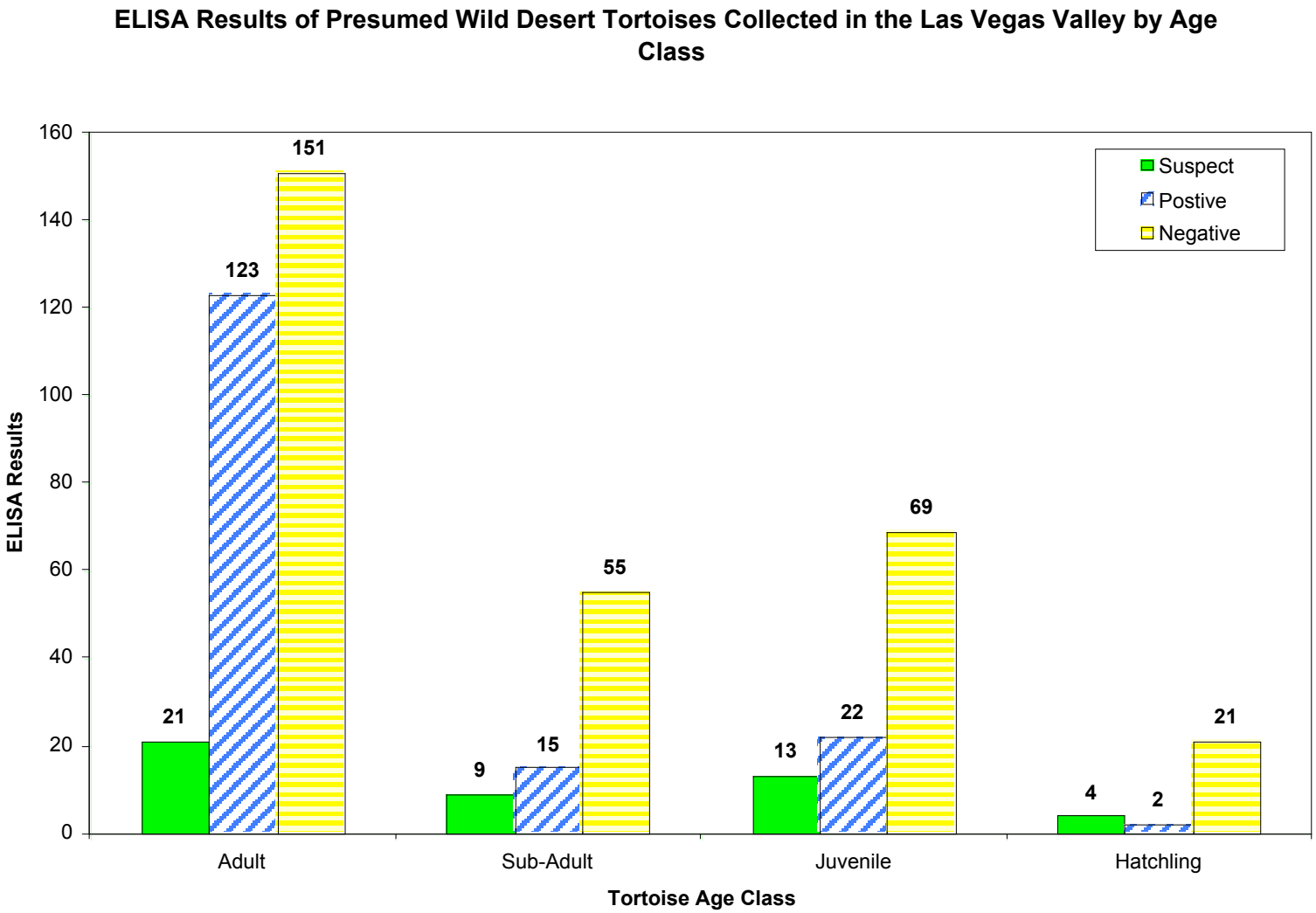


Figure 26. ELISA results for known pet desert tortoises (*G. agassizii*) entering the Desert Tortoise Transfer and Holding Facility by age class from 1995-2003 in Clark County, Nevada. Results indicate a higher number of ELISA negative wild tortoises enter the facility than ELISA suspect or ELISA positive presumed wild tortoises.

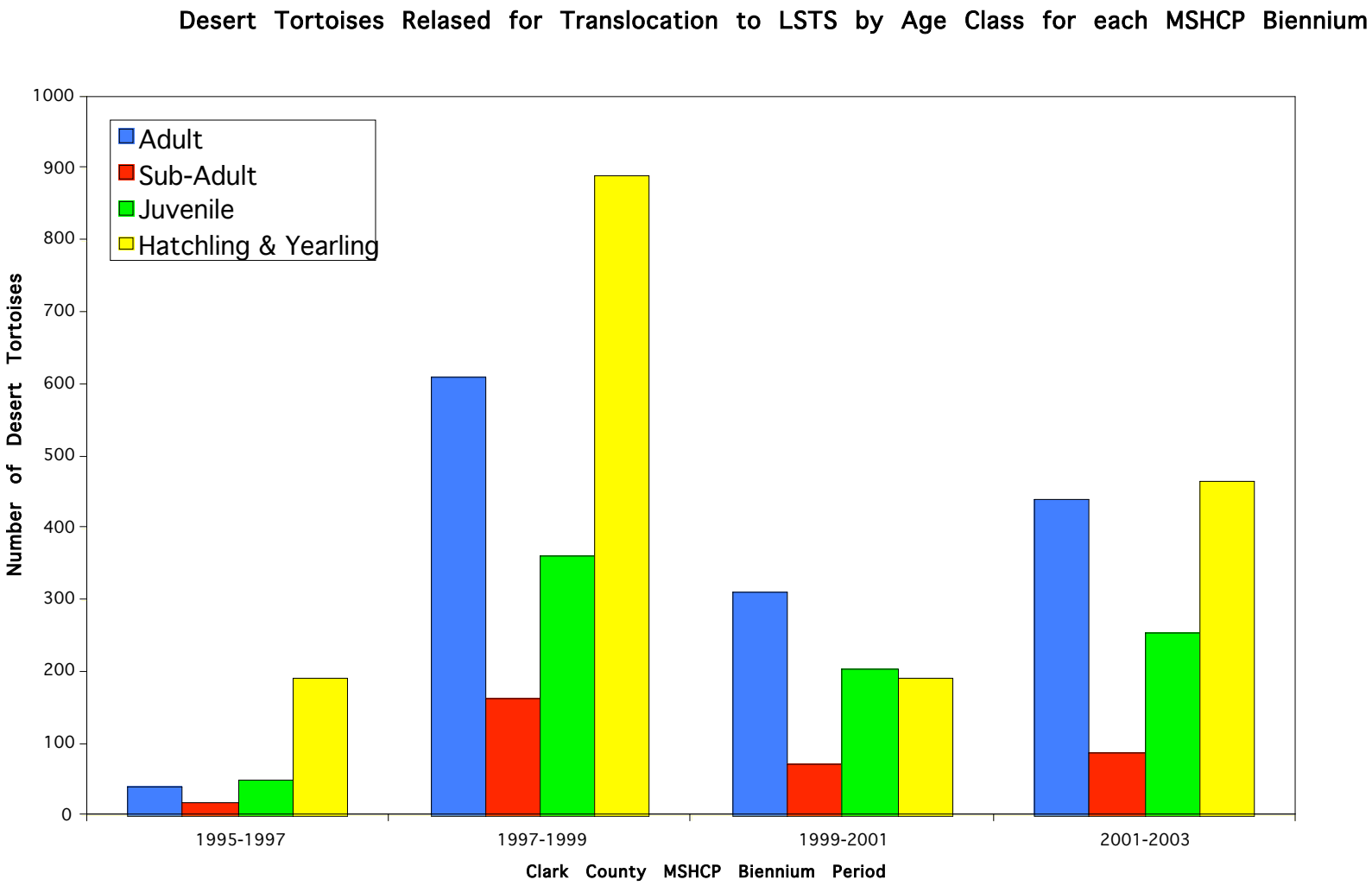


Figure 27. Number of ELISA negative desert tortoises (*G. agassizii*) released through translocation at the Large Scale Translocation Site in Jean, Nevada by age class during the Clark County MSCHP Biennium Periods. Results indicate a higher number of ELISA negative wild tortoises enter the facility than ELISA suspect or ELISA positive presumed wild tortoises.

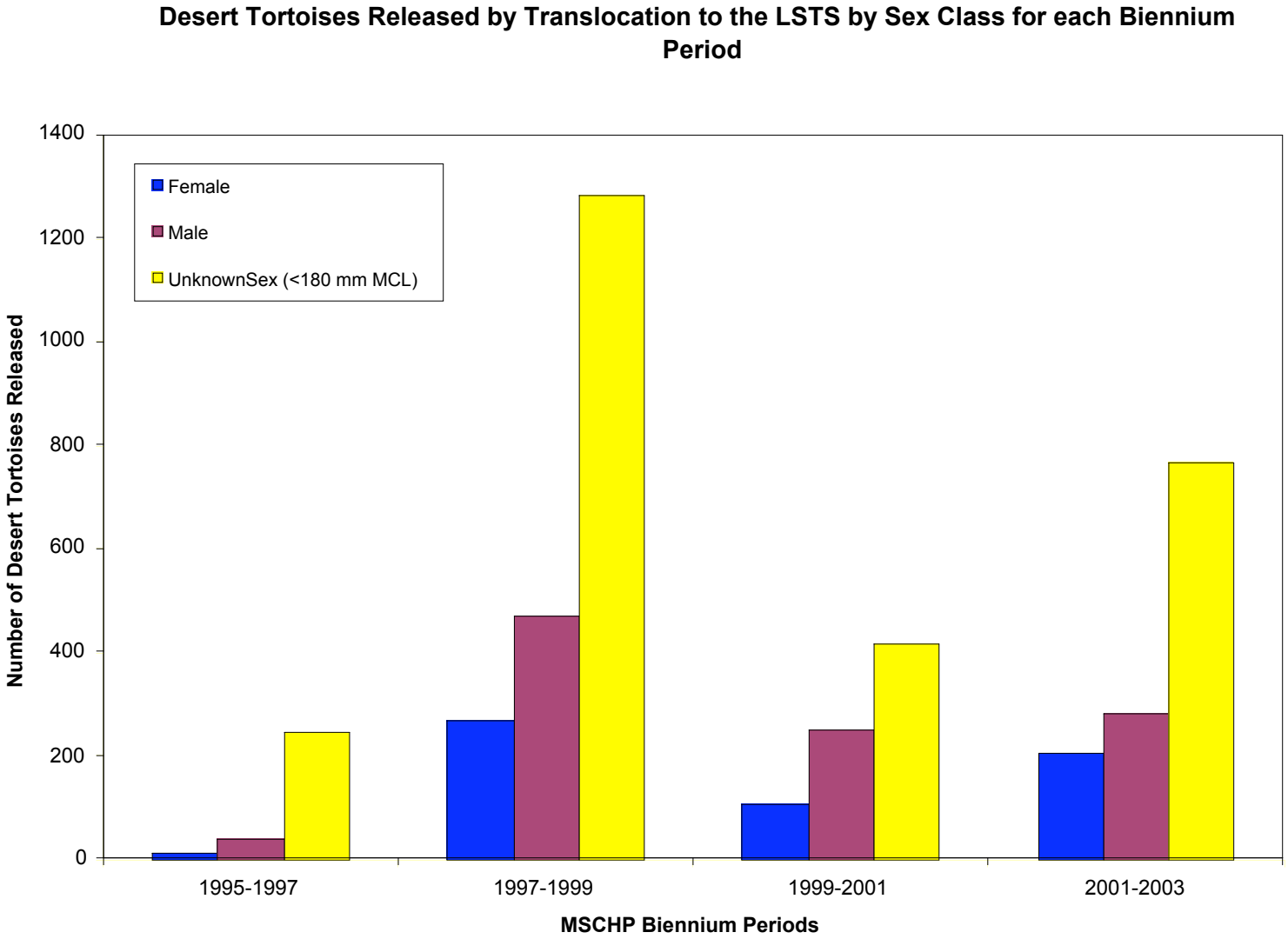


Figure 28. Number of ELISA negative desert tortoises (*G. agassizii*) released through translocation at the Large Scale Translocation Site in Jean, Nevada by sex class during the Clark County MSCHP Biennium Periods. Results indicate a higher number of ELISA negative wild tortoises enter the facility than ELISA suspect or ELISA positive presumed wild tortoises.