

CLARK COUNTY, NEVADA DESERT CONSERVATION PROGRAM



2005-2007 BIENNIUM PROGRESS REPORT



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CLARK COUNTY

DESERT CONSERVATION PROGRAM

500 S. GRAND CENTRAL PKY. • PO BOX 555210 • LAS VEGAS NV 89155-5210
(702) 455-5942 • FAX (702) 382-4593

Lewis Wallenmeyer, Director • Alan Pinkerton, Assistant Director • Tina Gingras, Assistant Director



Letter from the Program Administrator

Dear Friend:

The end of the 2005-2007 biennium marks six years of implementation of the Clark County Multiple Species Habitat Conservation Plan (MSHCP). Tremendous progress has been made in protecting Southern Nevada's natural and biological resources as our community continues to expand. The 2005-2007 Biennium Progress Report presents a summary of Desert Conservation Program (DCP) activities implemented or planned during the period from July 1, 2005 through June 30, 2007.

During the biennium, staff has worked diligently to improve the overall efficiency, transparency, and accountability of the DCP. Major accomplishments include initiation and/or completion of the recommendations of the Management Analysis Report completed in 2005 and the incorporation of scientific peer review of all DCP-funded products through the Adaptive Management Program.

Since 1999, the DCP has approved funding for more than 250 conservation projects totaling more than \$88 million. This amounts to more than 4.5 times the minimum amount required by the Permit and the MSHCP – or roughly \$1,180 per disturbed acre to offset the impacts of development on species and habitat in Clark County. During the 2005-2007 biennium, the DCP funded and managed nearly \$10 million in conservation projects. In addition, DCP staff worked closely with the permittees to collect and manage more than \$19 million in mitigation and federal fees.

As you review this report, take note of the breadth and depth of the partnerships that have been made possible through the DCP – likely you have been a part of the program's success. On behalf of the permittees, I would like to thank all of the important partners and supporters of the DCP and look forward to continued collaboration towards conservation.

Sincerely,

Marci Henson
Desert Conservation Program Administrator

BOARD OF COUNTY COMMISSIONERS

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VIRGINIA VALENTINE, P.E., County Manager

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EXECUTIVE SUMMARY

Introduction

As required in Section 2.12.2.7 of the Clark County MSHCP, this document represents a composite final biennium progress report for the period July 1, 2005 through June 30, 2007. The biennial progress report is compiled every two years to provide a summary of progress by agencies and contractors implementing approved conservation projects, report land disturbance activities and revenues generated as a result of those activities, and provide an accounting of expenses incurred and desert tortoise activities implemented during the two-year period pursuant to implementation of the MSHCP.

Desert Conservation Program History

The Clark County DCP was initiated in 1989 following the listing of the desert tortoise (*Gopherus agassizii*) under the federal Endangered Species Act (ESA). The listing occurred as a result of illegal collection, vandalism, disease, urban growth, road construction and irresponsible off-road vehicle use throughout desert tortoise habitats. The ESA prohibits the “take” of any threatened or endangered species listed pursuant to the ESA. Take is broadly defined by the ESA as equivalent to “harass, harm, pursue, hunt, shoot, wound, kill, capture, or collect.”

The DCP is responsible for ensuring compliance with the Section 10(a)(1)(B) incidental take permit (Permit) and MSHCP issued to Clark County and the permittees (the cities of Boulder City, Henderson, Las Vegas, Mesquite and North Las Vegas; and the Nevada Department of Transportation) in 2001. The incidental take permit exempts the permittees from the prohibited take provisions of the ESA (Section 9). More specifically, the Permit allows private property owners to develop land in Clark County without individual project consultations with the U.S. Fish and Wildlife Service (USFWS).

The MSHCP and permit allow for the disturbance (development) of up to 145,000 acres of non-federal (private) lands in Clark County and provide coverage for the incidental take of covered species listed in the Permit. As a condition of the permit and as defined in the MSHCP, the permittees have agreed to mitigate future potential impacts on and assist in the recovery of a broad range of other species residing in all of the habitats located within Clark County and reduce the likelihood that additional covered species will need to be listed as threatened or endangered in the foreseeable future.

There are 78 federal and state listed species covered by the MSHCP, including the federally listed desert tortoise (threatened) and Southwestern willow flycatcher (*Empidonax traillii extimus*) (endangered), and the Nevada state listed Las Vegas bearpoppy (*Arctomecon californica*). Clark County serves as Plan Administrator on behalf of the permittees. The Permit is valid for 30-years from the date of approval by the USFWS.

2005-2007 Biennium Progress Report

Clark County is required to collect mitigation funds in cooperation with the permittees, to track land disturbance, and to expend mitigation funds to implement conservation actions in accordance with terms outlined in the MSHCP and associated incidental take permit.

Each of the permittees are required to maintain monthly Disturbance and Fee Reports per Section 2.12.2.2 of the MSHCP. The DCP collects this information to track the number of acres disturbed and the amount of mitigation fees collected. This mitigation revenue is managed by Clark County in an endowment fund.

The MSHCP provides funding for conservation projects to various federal, state, and local agencies, nonprofit organizations, and private contractors from mitigation fees collected pursuant to Section 10 of the ESA, Section 7 of the ESA on behalf of the USFWS, and proceeds from the disposal of federal land in Clark County authorized by the Southern Nevada Public Lands Management Act (SNPLMA).

The DCP tracks disposition of tortoises picked up by the Clark County Desert Tortoise Pickup Service. Disposition options include translocation, adoption, or provision to a zoo or research institution. In addition, tortoises may be euthanized (euthanasia as an option is a determination of the USFWS), may be returned to their owner if they are a stray pet, or may die of natural or unknown causes.

Land disturbance, revenues, project status and tortoise disposition for the 2005-2007 biennium are summarized below.

Land Disturbance and Revenues

The total number of acres disturbed and the total amount of mitigation fee collected is compiled and summarized in a later section of this document, by entity. For the subject biennium, a total of 18,559 acres were disturbed and mitigation fees totaling \$15,529,895 were collected and deposited into Clark County's Section 10 endowment fund.

Project Reporting

During the 2005-2007 biennium, the DCP continued to manage projects from earlier bienniums, as project terms do not always coincide directly with biennium start and end dates, as well as implemented new projects approved through the 2005-2007 Implementation and Planning Budget process. If a project had any activity during the 2005-2007 biennium a summary report is included in a later section of this document. The reports include the name of the agency or contractor implementing or overseeing the project, project description, project status, partners, contact information, funding awarded and contract term, where applicable. This document includes projects funded from the 1999-2001 biennium and forward. Projects are grouped into four categories:

1. Operations/administration projects,
2. Implementation projects,
3. Planning projects, and
4. Information Gathering and Analysis projects.

Included in this document are Index Tables listing all projects managed during the 2005-2007 biennium sorted by project number, agency, funding source, and project category.

Below is a table that shows the number of Section 7 and Section 10 projects managed during the 2005-2007 biennium, listed by the biennium in which they were funded. The DCP expended a total of \$702,710 from Section 7 funds and \$3,870,036 from Section 10 funds during this biennium.

	1999-2001	2001-2003	2003-2005	2005-2007	2007-2009	Total # of projects managed during 2005-2007
Section 7	0	0	12	3	0	15
Section 10	1	1	9	23	1	35
Total:						50

Below is a table that shows the number of SNPLMA projects managed during the 2005-2007 biennium, listed by the biennium in which they were funded. The DCP expended a total of \$4,996,421 from SNPLMA funds during this biennium.

	Round 4	Round 6	Total # of projects managed during 2005-2007
SNPLMA	51	60	111

Funding allocated for the 2003-2005 and 2005-2007 bienniums that has not yet been expended totals \$24,527,260. In addition, funding approved through the 2007-2009 Implementation and Planning Budget process, to be expended starting July 1, 2007, totals \$35,190,719.

Tortoise Disposition

A total of 2,362 tortoises were picked up in the 2005-2007 biennium. A majority of these tortoises were translocated to the Large Scale Translocation Site (46%), the remainder died of predation, dehydration, or unknown causes (28%), were euthanized due to injury or disease (19%), were provided to research (4%), were missing or escaped from their pens (2%), returned to their owners (1%) or were adopted (.004%).

Uses for this Report

This report will be used to comply with the requirements of the MSHCP as outlined in Section 2.12.1 “Progress Report Implementation Plan and Budget” (IPB) of the MSHCP, and to reaffirm Clark County’s commitment as a steward of the plan and the DCP. In addition, the report will be used to clearly benchmark accomplishments, recommendations and fiscal activities of the program. Finally, it will aid in planning future program activities as the DCP matures and provide a benchmark from which to measure future progress.

To obtain further information about the Clark County DCP, please contact:

Clark County Department of Air Quality and Environmental Management
500 S. Grand Central Pky.
Las Vegas, NV 89155
phone: (702) 455-5942
website: http://www.accessclarkcounty.com/depts/daqem/epd/pages/desert_index.aspx.

The final draft of this biennium report will be presented to the Clark County Board of Commissioners and formally submitted to the USFWS.

MASTER LIST OF PROJECTS

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PROJECT REPORTS

Master List sorted by project number

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp. Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
S10	01-03	Information Gathering & Analysis	LVSP	101	2001-LVSP-101AD	Las Vegas Bearpoppy Research, Buckwheat Salvage Study, Soil Studies, Germination Trails	\$50,000	Completed	07/01/01-06/30/03, Soils characteristic work completed in 2006	Yes
S10	99-01	Information Gathering & Analysis	UNLV	102	1999-UNLV-102	Desert Pocket Mouse Study	\$45,000	Completed	06/15/99-06/30/01, Genetics study completed in 2006	Yes
S10	03-05	Implementation	Moapa Band of Piutes	103	2003-MOAPA-103	Control of Russian Knapweed	\$40,000	Completed	Completed in 03-05 BN. Final report never received	No
SNPLMA	R4	Information Gathering & Analysis	NPS	178	2003-NPS-178	Songbird Monitoring as a tool for Guiding Habitat Restoration at Lake Mead NRA	\$118,000	Project cancelled	Project cancelled	No
SNPLMA	R4	Information Gathering & Analysis	NPS	179	2003-NPS-179	Relict Leopard Frog Monitoring and Management	\$182,850	Completed	01/06/04-02/01/06	Yes
SNPLMA	R4	Planning	USFS-SMNRA	196	2003-USFS-SMNRA-196	Spring Mountain National Recreation Area Landscape Assessment	\$2,231,036	Completed, pending final project invoice	02/04/04-06/30/07	Yes
SNPLMA	R4	Planning	USFS	196A	2003-USFS-SMNRA-196A	Spring Mountain National Recreation Area Landscape Assessment	\$679,082	Not started	Not started	No
SNPLMA	R4	Information Gathering & Analysis	USFS	200	2003-USFS-200	Inventory and Monitoring of Rare Plant Species Spring Mountain National Recreation Area	\$90,513	Completed	03/16/04-02/28/06	Yes
SNPLMA	R4	Information Gathering & Analysis	NPS	229	2003-NPS-229	Wildlife Inventory Monitoring and Management	\$239,108	Completed	01/06/04-02/01/06	Yes
SNPLMA	R4	Information Gathering & Analysis	UNLV	230	2003-UNLV-230	Temperature Acclimation and Oxygen Consumption Rana Onca Larvae (with National Park Service)	\$83,450	Completed	01/20/04-02/28/06	Yes
SNPLMA	R4	Information Gathering & Analysis	UNLV	232	2003-UNLV-232	Lake Mead National Recreation Area Evaluation of Impact of Vegetation Encroachment on Relict Leopard Frog Populations (with National Park Service)	\$145,526	Completed	01/06/04-02/02/06	Yes
S10	03-05	Implementation	NPS	233	2003-NPS-233	Law Enforcement	\$271,990	Completed	07/02/03-08/01/05, Included in project 495	Yes
S10	03-05	Implementation	USFS	234	2003-USFS-234	Law Enforcement	\$517,010	Completed	08/19/03-05/31/07, Included in project 504	Yes
SNPLMA	R4	Information Gathering & Analysis	NPS	235	2003-NPS-235	Lake Mead National Recreation Area Data Collection and Analysis	\$221,950	Completed	01/06/04-02/01/06	Yes
S07	03-05	Information Gathering & Analysis	UNR-BRRC	248	2003-UNR-BRRC-248	Desert Tortoise Epidemiology	\$657,500	Completed	01/06/04 - 01/31/06	Yes

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
S07	03-05	Information Gathering & Analysis	UNR-BRRC	249	2003-UNR-BRRC-249	Development of Range-wide Desert Tortoise Monitoring Training Program	\$161,000	Completed	01/06/04 - 01/31/06	Yes
S10	03-05	Operations	SNEI	251-1	2003-SNEI-251-1	Clark County Desert Tortoise Transfer and Holding Facility	\$402,867	Completed	06/17/03-09/06/05, Included in project 1007	Yes
S07	03-05	Operations	SNEI	251-2	2003-SNEI-251-2	Clark County Desert Tortoise Transfer and Holding Facility	\$79,188	Completed	09/06/05-12/31/05, Included in project 1007	Yes
SNPLMA	R4	Information Gathering & Analysis	UNR	252	2003-UNR-BRRC-252	Baseline Density Monitoring; Southern NV Desert Wildlife Management Area Populations of Desert Tortoise	\$1,377,000	Completed	02/17/04-03/21/06	Yes
S07	03-05	Implementation	NPS	255	2003-NPS-255	Burro Removal at Lake Mead National Recreation Area	\$34,500	Completed	03/02/04 - 04/30/06	Yes
SNPLMA	R4	Operations	Partners In Conservation (PIC)	256	2003-PIC-256	GPS Roads and Mapping	\$297,000	Completed	01/20/04-06/30/06	Yes
S07	03-05	Information Gathering & Analysis	UNR-BRRC	257	2003-UNR-BRRC-257	Increasing Effectiveness and Economy in Density Monitoring of the Desert Tortoise	\$312,000	Completed	01/06/04 - 01/31/06	Yes
S07	03-05	Information Gathering & Analysis	UNR-BRRC	264	2003-UNR-BRRC-264	Techniques for Monitoring Desert Tortoise Juvenile Recruitment	\$313,000	Withdrawn	Withdrawn	Yes
SNPLMA	R4	Information Gathering & Analysis	SNWA	266	2003-SNWA-266	Investigation of Bat Species Diversity and Distribution along the LV Wash	\$35,797	Withdrawn	Withdrawn	Yes
S10	03-05	Implementation	NPS	272	2003-NPS-272	Plant Material Production	\$51,750	Completed	07/02/03 - 08/01/05	Yes
SNPLMA	R4	Information Gathering & Analysis	SNWA	286	2003-SNWA-286	Investigation of Amphibian Species Diversity and Distribution along the Las Vegas Wash	\$27,810	Withdrawn	Withdrawn	Yes
SNPLMA	R4	Information Gathering & Analysis	UNR	289	2003-UNR-289	Translocation Long-Term Monitoring, Desert Tortoise Density Evaluation and Establishment of New LSTs	\$161,400	Completed	02/17/04-03/31/06	Yes
SNPLMA	R4	Information Gathering & Analysis	UNLV	294	2003-UNLV-294	The effects of Athel (Tamarix aphylla) on Riparian Habitats at the Lake Mead National Recreation Area (with National Park Service)	\$64,500	Completed	01/20/04-12/31/06	Yes
SNPLMA	R4	Information Gathering & Analysis	UNLV	305	2003-UNLV-305	Factors Affecting Rarity of the Las Vegas Bearpoppy	\$55,500	Completed	01/20/04-12/31/06	Yes
SNPLMA	R4	Information Gathering & Analysis	NPS	314	2003-NPS-314	Lake Mead National Recreation Area Monitoring of Ground Disturbance; Illegal Tracks and Traces	\$50,600	Completed	01/06/04-02/01/06	Yes
SNPLMA	R4	Implementation	Partners In Conservation (PIC)	319	2003-PIC-319	OHV Videos	\$99,700	Not started	Not started	No
SNPLMA	R4	Operations	UNR-BRRC	321	2005-UNR-BRRC-321	Adaptive Management Program	\$925,355	Completed	02/17/04-03/31/06, Included in project 439	Yes
S10	03-05	Information Gathering & Analysis	USFS	322	2003-USFS-322	Seed Collection of Rare and Native Species	\$565,970	In progress	Umbrella project number	No

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
S10	03-05	Information Gathering & Analysis	USFS	322A	2003-USFS-322A	Seed Collection of Rare and Native Species	\$48,960	Completed	08/05/03-05/31/06	Yes
S10	03-05	Operations	SNEI	329-1	2003-SNEI-329-1	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$72,389	Completed	06/17/03-09/06/05, Included in project 1007	Yes
S07	03-05	Operations	SNEI	329-2	2003-SNEI-329-2	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$19,312	Completed	09/06/05-12/31/05, Included in project 1007	Yes
SNPLMA	R4	Planning	TNC	330	2003-TNC-330	Low Elevation Rare Plant Conservation Management Strategy	\$113,100	Completed	01/06/04-05/01/07	Yes
SNPLMA	R4	Information Gathering & Analysis	UNLV	331	2003-UNLV-331	Lake Mead National Recreation Area Evaluation of Non-Vascular Plants of Concern in Clark County (with National Park Service)	\$30,340	Completed	01/20/04-06/30/06	Yes
SNPLMA	R4	Information Gathering & Analysis	USDA-ADC	332	2003-USDA-ADC-332	Assist in Development of Wildlife Damage Management for Threatened Species from Predation or Parasitism in Clark County	\$91,418	Completed	01/06/04-02/28/06	Yes
S10	03-05	Operations	SNEI	336	2003-SNEI-336	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$98,202	Completed	06/17/03-12/30/05, (\$80,202 + \$18,000) Included in project 1007	Yes
SNPLMA	R4	Planning	CC	338	2003-CC-338	Cooperative Weed Management Program Development	\$126,500	Completed	01/22/04-03/31/06	Yes
SNPLMA	R4	Information Gathering & Analysis	BLM	344	2003-BLM-344	Ecological Site Inventory for the Spring Mountains Ecosystem	\$885,170	Completed	01/06/04-12/31/06, Included in project 344A	Yes
SNPLMA	R4	Information Gathering & Analysis	USFS	344A	2003-USFS-344A	Spring Mountains Ecological Site Inventory Phase II	\$88,500	In progress	08/15/06-12/31/07	Yes
S10	03-05	Implementation	SNWA	345	2003-SNWA-345	Habitat Enhancement in the LV Wash	\$73,500	Completed	07/02/03-08/01/05	Yes
SNPLMA	R4	Implementation	BLM	347	2003-BLM-347	Development of Designated Roads Network in the Northeast Desert Tortoise Desert Wildlife Management Areas	\$148,000	Completed	01/06/04-12/31/06	Yes
SNPLMA	R4	Planning	Partners In Conservation (PIC)	348	2003-PIC-348	Desert Conservation Week Pilot Program	\$20,500	In progress	09/28/06-06/30/08	Yes
SNPLMA	R4	Information Gathering & Analysis	USDA-ARS	349	2003-USDA-ARS-349	Pollinator Ecology	\$208,611	Completed	01/06/04-03/31/06	Yes
SNPLMA	R4	Planning	BLM	350	2003-BLM-350	Virgin River Conservation Management Strategy	\$213,150	Completed	01/06/04-02/28/06	Yes
SNPLMA	R4	Planning	ENTRIX	350A	2003-ENTRIX-350A	Virgin River Conservation Assessment	\$1,229,600	In progress	04/04/06-06/30/08, Included in project 350	Yes
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350B	2003-OLVF-350B	Virgin River Conservation Partnership Facilitator	\$101,000	In progress	04/06/07-06/30/08, 2 contracts (\$81,000 & \$20,000)	Yes
SNPLMA	R4	Planning	NPS	350C	2003-NPS-350C	Virgin River Conservation Strategy (with Bureau of Land Management)	\$87,000	Completed	01/06/04-02/28/06, Included in project 350	Yes

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350D	2003-OLVF-350D	Virgin River Conservation Partnership Facilitator	\$90,000	Completed	04/01/05-03/31/07, Included in project 350B	Yes
SNPLMA	R4	Operations	BLM	353	2003-BLM-353	Geographic Information Systems Support	\$390,600	Completed	01/06/04-02/28/06	Yes
SNPLMA	R4	Information Gathering & Analysis	BLM	361	2003-BLM-361	Evaluating Impacts of Cattle Grazing on Vegetation and Vegetative Recovery Following Removal of Cattle Grazing	\$160,200	In progress	01/06/04-06/30/06	Yes
SNPLMA	R4	Information Gathering & Analysis	NPS	363	2003-NPS-363	Lake Mead National Recreation Area Vegetation Monitoring Program: Rare Plants, Plant Poaching, and Weed Management Programs	\$611,270	Completed	01/06/04-02/28/06	Yes
SNPLMA	R4	Planning	BLM	367	2003-BLM-367	Integrated Mesquite-Acacia Conservation Management Strategy Plan	\$128,100	Completed	01/06/04-03/31/06	Yes
SNPLMA	R4	Information Gathering & Analysis	UNR	369	2003-UNR-369	Red Rocks to the Summit	\$447,600	Completed	02/17/04-03/31/06	Yes
SNPLMA	R4	Planning	CC	377	2005-CC-377	Public Information and Education - Mojave Max Education Project	\$260,000	Completed	07/01/03-06/30/07	Yes
SNPLMA	R4	Planning	David Bert	377A	2005-BERT-377A	Public Information and Education - Mojave Max Education Project	\$100,000	Completed	12/20/05-12/31/06, Included in project 377	Yes
SNPLMA	R4	Planning	RRCIA	377B	2005-RRCIA-377B	Public Information and Education - Mojave Max Education Project	\$100,000	Completed	01/01/06-12/31/06, Included in project 377	Yes
SNPLMA	R4	Planning	CC	380	2003-CC-380	CMS Development	\$500,000	In progress	Umbrella project number	No
SNPLMA	R4	Planning	The Shipley Group	380A	2003-SHIPLEY-380A	Desert Wildlife Management Areas Conservation Management Strategies (contracted with The Shipley Group) 4 DWMAS	\$210,000	Completed	04/06/04-05/31/06, Included in project 548A	Yes
SNPLMA	R4	Information Gathering & Analysis	UNR	387	2003-UNR-BRRC-387	Ecosystem Indicators	\$582,100	Completed	02/17/04-03/01/06	Yes
SNPLMA	R4	Information Gathering & Analysis	USFS	388	2003-USFS-388	Bat Inventories within the Spring Mountains	\$44,000	Completed	03/16/04-12/31/05	Yes
SNPLMA	R4	Information Gathering & Analysis	USFS	390	2003-USFS-390	All Bird Monitoring Program in Clark County	\$88,300	Completed	03/16/04-12/31/05	Yes
SNPLMA	R4	Information Gathering & Analysis	USFS	392	2003-USFS-392	Northern Goshawk Survey of the Spring Mountains	\$40,080	Completed	03/16/04-02/01/06	Yes
SNPLMA	R4	Planning	CC	393	2003-CC-393	Desert NWR/Developed Community Interface Conservation Resource Plan	\$10,000	Project cancelled	Project cancelled	No
SNPLMA	R4	Information Gathering & Analysis	USFS	394	2003-USFS-394	Butterfly Monitoring in the Spring Mountains	\$11,000	Completed	03/16/04-12/31/05	Yes
SNPLMA	R4	Operations	TNC	437	2003-TNC-437	Muddy River Interim Management Plan Development and Partner Coordination	\$177,147	Completed	01/06/04-12/31/06	Yes

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
SNPLMA	R4	Operations	CC	439	2003-CC-439	MSHCP Adaptive Management Program Coordination, Science Advice and Effectiveness Monitoring Strategy	\$1,593,015	In progress	08/16/01-08/31/08	Yes
SNPLMA	R6	Information Gathering & Analysis	NPS	475	2005-NPS-475	Peregrine Falcon Monitoring at Lake Mead NRA	\$30,120	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	476	2005-NPS-476	Relict Leopard Frog Monitoring and Management	\$333,000	Not started	Not started	No
SNPLMA	R6	Implementation	USFS-SMNRA	486	2005-USFS-SMNRA-486	Annual Inspection and Maintenance of Riparian Protective Fencing within the Spring Mountains National Recreation Area	\$204,045	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	488	2005-USFS-SMNRA-488	Monitoring of Northern Goshawks and Owls within the Spring Mountains National Recreation Area	\$31,307	Not started	Not started	No
S10	05-07	Implementation	USFS-SMNRA	490	2005-USFS-SMNRA-490	Bristle Cone Habitat Protection for MSHCP Covered Species on the Spring Mountains National Recreation Area	\$83,780	In progress	07/05/05-10/31/07	Yes
S07	05-07	Implementation	NPS	492	2005-NPS-492	Burro Capture and Removal	\$34,500	Withdrawn	Withdrawn	No
S10	05-07	Implementation	NPS	495	2005-NPS-495	Resource Protection and Law Enforcement at the Lake Mead NRA	\$416,530	Completed	08/02/05-06/30/07	Yes
SNPLMA	R6	Implementation	BLM	496	2005-BLM-496	Law Enforcement	\$672,000	Completed	07/01/05-06/30/07	Yes
SNPLMA	R6	Information Gathering & Analysis	BLM	497	2005-BLM-497	Rare Plant Inventories	\$376,688	Not started	Not started	No
SNPLMA	R6	Operations	BLM	498	2005-BLM-498	GIS Support	\$645,488	Not started	Not started	No
SNPLMA	R6	Planning	BLM	499	2005-BLM-499	Support of the Virgin River Conservation Management Strategy	\$256,623	Not started	Not started	No
S10	05-07	Implementation	BLM	500	2005-BLM-500	Restoration in Desert Tortoise Critical Habitat	\$353,131	Completed	07/01/05-06/30/07	Yes
SNPLMA	R6	Information Gathering & Analysis	BLM	502	2005-BLM-502	Sediment Transport of Source Materials to White-margined Penstemon	\$1,192,522	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	Nevada System of Higher Education (NSHE)	502A	2005-NSHE-502A	Sediment Transport of Source Materials to White-margined Penstemon Habitat	\$800,553	In progress	05/05/07-01/04/10	Yes
SNPLMA	R6	Information Gathering & Analysis	BLM	503	2005-BLM-503	Roads Monitoring on BLM Lands	\$432,589	Not started	Not started	No
S10	05-07	Implementation	USFS	504	2005-USFS-504	Resource Protection Law Enforcement	\$544,919	Completed	07/05/05-06/30/07	Yes
S10	05-07	Implementation	Oliver, Robert	512	2005-OLIVER-512	Law Enforcement for the Boulder City Conservation Easement	\$149,900	Completed	10/01/05-06/30/07, Included in project 714	Yes
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	515	2005-USFS-SMNRA-515	Inventory for Covered Plant Species in the Spring Mountains National Recreation Area and adjacent lands.	\$282,426	Not started	Not started	No

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
SNPLMA	R6	Operations	NPS	525	2005-NPS-525	Lake Mead GIS and Data Management Support	\$312,788	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	526	2005-NPS-526	Monitoring of Illegal Ground Disturbance in Response to Management Actions	\$105,287	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	529	2005-NPS-529	Monitoring and Road Conditions and Signs	\$114,737	Not started	Not started	No
SNPLMA	R6	Operations	USFS-SMNRA	531	2005-USFS-SMNRA-531	Forest Service GIS Support of MSHCP applications	\$24,300	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	532	2005-NPS-532	Threats, Research and Monitoring on the Invasive Species Sahara Mustard	\$94,554	Not started	Not started	No
S10	05-07	Implementation	NPS	533	2005-NPS-533	Sahara Mustard Control in Rare Plant Habitats	\$150,566	Completed	08/02/05-06/30/07	Yes
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	534	2005-USFS-SMNRA-534	Monitoring Rare Plant Species on the Spring Mountains NRA	\$179,396	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	535	2005-NPS-535	Inventory, Research, and Monitoring for Covered Plant Species	\$347,054	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	536	2005-NPS-536	Inventory, Research, and Monitoring of Evaluation and Watch Plant Species on Lake Mead NRA and Adjacent Lands.	\$163,277	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	537	2005-NPS-537	Interagency Week Sentry Project	\$905,688	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	540	2005-NPS-540	Bald Eagle Monitoring	\$21,589	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NPS	542	2005-NPS-542	Historical and Current Assessment of Six Covered and Three Evaluation Bird Species	\$219,903	Not started	Not started	No
S10	05-07	Operations	CC	544	2005-CC-544	Desert Conservation Program Administration	\$581,150	Completed	07/01/05-06/30/07	Yes
S10	05-07	Operations	Siguenza, Ruth	544A	2005-SIGUENZA-544A	Facilitation Services for the Clark County Desert Conservation Program	\$130,000	Completed	02/21/2006-02/28/2007	Yes
SNPLMA	R4	Operations	CC	544P	2005-CC-544P	Desert Conservation Program Administration	\$1,743,540	Completed	07/01/05-06/30/07, Included in project 544	Yes
SNPLMA	R6	Information Gathering & Analysis	NPS	545	2005-NPS-545	Desert Tortoise Monitoring and Management at Lake Mead NRA	\$37,609	Not started	Not started	No
S10	05-07	Planning	CC	546	2005-CC-546	Boulder City Conservation Easement Plan	\$30,000	Not started	Not started	No
S10	05-07	Operations	NDF	547	2005-NDF-547	Forester II Position	\$135,430	Withdrawn	Withdrawn	No
S10	05-07	Planning	CC	548	2005-CC-548	Conservation Management Strategy Development	\$650,000	In progress	Umbrella project number	No
S10	05-07	Planning	The Shipley Group	548A	2005-SHIPLEY-548A	Desert Wildlife Management Area Conservation Management Strategy Development	\$210,000	Completed	Completed	Yes

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
SNPLMA	R6	Information Gathering & Analysis	NDOW	549	2005-NDOW-549	Peregrine Falcon Monitoring in Clark County	\$23,283	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	USGS	551	2005-USGS-551	Effectiveness Monitoring of Fuel Management Treatments in the Spring Mountains National Recreation Area	\$321,501	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	USGS	552	2005-USGS-552	Effectiveness Monitoring of Spring-fed Wetlands and Riparian Restoration Treatments	\$899,959	Not started	Not started	No
SNPLMA	R6	Implementation	CC	553	2005-CC-553	Media and Outreach Development	\$264,000	Not started	Not started	No
SNPLMA	R6	Operations	Natural Heritage Program	557	2005-NNHP-557	Sensitive Species Data Management	\$81,500	Not started	Not started	No
S10	05-07	Implementation	CC	558	2005-CC-558	Pie Core Programs: Rural Outreach, Community Participation, and Public Outreach	\$110,000	Completed	CC project effective date - 07/01/20-06/30/07 (internal project/no contract term)	Yes
SNPLMA	R6	Implementation	CC	559	2005-CC-559	Mojave Max Emergence Contest Partnership and Partnership Development	\$440,000	Not started	Umbrella project number, Not started	No
SNPLMA	R6	Implementation	RRCIA	559A	2005-RRCIA-559A	Mojave Max Emergence Contest Partnership and Partnership Development	\$400,000	Not started	Not started	No
S10	05-07	Implementation	CC	560	2005-CC-560	Mojave Max Emergence Contest	\$180,000	Completed	CC project effective date - 07/01/03-06/30/07 (internal project/no contract term)	Yes
S10	05-07	Implementation	Shonkwiler	560A	2005-SHONKWILER-560A	Mojave Max Emergence Contest	\$135,000	Completed	08/16/05-06/30/07, Included in project 560	Yes
SNPLMA	R6	Operations	TNC	561	2005-TNC-561	Muddy River Property Management Acquisition and Partner Coordination	\$260,660	Not started	Not started	No
S07	05-07	Implementation	CC	562	2005-CC-562	Retro Fencing Projects	\$792,000	In progress	07/01/05-06/30/07	Yes
S07	05-07	Implementation	NDF	562A	2005-NDF-562A	Fencing	\$200,000	In progress	01/30/06-01/29/10, Included in project 562	Yes
S07	05-07	Implementation	American Fence	562B	2005-AMERICANFENCE-562B	Fencing Materials	\$123,970	Completed	03/20/07-06/30/07, Included in project 562	Yes
S07	05-07	Implementation	PIC	562D	2005-PIC-562D	Public Outreach for the DCP, Fencing	\$137,500	Completed	07/01/05-06/30/07, Included in project 562	Yes
S07	05-07	Implementation	CC	563	2005-CC-563	New Fencing Projects	\$80,000	Not started	Not started	No
S07	05-07	Implementation	CC	564	2005-CC-564	Fencing Monitoring and Maintenance Projects	\$1,500,000	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	567	2005-UNR-BRRC-567	Epidemiology of Desert Tortoise	\$779,726	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	NDOW	568	2005-NDOW-568	Long-term Conservation Strategy for Palmer's Chipmunk	\$104,431	Withdrawn	Withdrawn	No

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	569	2005-UNR-BRRC-569	Assessment of Listed and Other species of Concern at the Urban Edge	\$550,128	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	UNR	570	2005-UNR-570	Butterfly Monitoring in the Spring Mountains	\$115,700	In progress	03/20/07-11/30/09	Yes
SNPLMA	R6	Information Gathering & Analysis	TNC	572	2005-TNC-572	Effectiveness Monitoring for Saltcedar and Knapweed Control on the Upper Muddy River Floodplain	\$540,902	Not started	Not started	No
S10	05-07	Implementation	NPS	573	2005-NPS-573	Spring-fed Wetlands and Riparian Restoration	\$391,575	Completed	08/02/05-06/30/07	Yes
SNPLMA	R6	Operations	CC	574	2005-CC-574	Adaptive Management Program	\$2,950,335	In progress	02/14/07-02/13/12	Yes
SNPLMA	R6	Operations	DRI	574A	2005-DRI-574A	Science Advisor	\$1,700,000	In progress	06/05/07-06/30/09, Included in project 574	Yes
SNPLMA	R6	Information Gathering & Analysis	UNLV	575	2005-UNLV-575	Delineation of Distribution, Evaluation of Relatedness, and Assessment of Connectivity for Leopard from Population within the Management Zone of the Relict Leopard Frog.	\$147,836	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	576	2005-UNR-BRRC-576	Movements and Barriers to Movement for Desert Tortoise	\$719,210	Not started	Not started	No
SNPLMA	R6	Implementation	PIC	577	2005-PIC-577	PIC and Volunteer Support for BLM Roads Monitoring Project	\$322,000	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	578	2005-UNR-BRRC-578	Ecosystem Indicators: Change Indicators	\$2,752,306	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	USGS	580	2005-USGS-580	Long-term Conservation Strategy for Palmer's Chipmunk	\$276,447	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	GBBO	581	2005-GBBO-581	Developing Habitat Models and Monitoring Techniques for Nine Rare Bird Species of the Clark County MSHCP	\$719,940	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	USGS	582	2005-USGS-582	Population Status and Reproductive Ecology of the Western Burrowing Owl	\$408,232	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	USDA-ARS	583	2005-UDA-ARS-583	Native Bee Pollinators: Status and Plant Relationships	\$261,696	Not started	Not started	No
S10	05-07	Information Gathering & Analysis	USGS	584	2005-USGS-584	Distribution of Kit Foxes (Vulpes macrotis) in Clark County, Nevada	\$286,400	Not started	Withdrawn	No
SNPLMA	R6	Information Gathering & Analysis	UNR	585	2005-UNR-585	Desert Tortoise Monitoring	\$1,217,072	In progress	04/30/07-11/02/09	Yes
SNPLMA	R6	Information Gathering & Analysis	USFWS	585A	2005-USFWS-585A	Desert Tortoise Monitoring	\$1,372,218	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	588	2005-UNR-BRRC-588	The Distribution and Abundance of Upland Amphibians and Reptiles	\$1,029,070	Not started	Not started	No

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
SNPLMA	R6	Operations	USFWS	593	2005-USFWS-593	U.S. Fish and Wildlife Service GIS Support, Data Management and Coordination	\$90,100	Not started	Not started	No
SNPLMA	R6	Implementation	USFWS	595	2005-USFWS-595	Establishment of Rana Onca Population in a Created Aquatic Habitat	\$200,195	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	USDA-ADC	596	2005-USDA-ADC-596	Distribution and Movements of Common Ravens in Relation to Desert Tortoise Habitat	\$326,140	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	UNLV	597	2005-UNLV-597	Evaluation and Experimental Habitat Manipulations of Relict Leopard Frog Populations	\$87,267	In progress	01/16/07-05/01/09	Yes
S10	05-07	Implementation	USDA-ADC	598-1	2005-USDA-ADC-598-1	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384	In progress	01/17/06-01/31/08, Funded 1/2 S7, 1/2 S10 \$46,384 each	Yes
S07	05-07	Implementation	USDA-ADC	598-2	2005-USDA-ADC-598-2	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384	In progress	01/17/06-01/31/08, Funded 1/2 S7, 1/2 S10 \$46,384 each. See project 598-1 for complete report	Yes
SNPLMA	R6	Information Gathering & Analysis	Smithsonian	602	2005-SMITHSONIAN-602	Impact of Nutritional Stress on URTD and Immune Function in the Desert Tortoise	\$698,480	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	CC	605	2005-CC-605	Volunteer Resource Stewardship Pilot Program	\$250,000	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	CC	606	2005-CC-606	Buckwheat and Bearpoppy Inventory	\$50,000	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	CC	607	2005-CC-607	Rick Analysis	\$100,000	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	CC	608	2005-CC-608	Effectiveness Monitoring for Conservation Actions	\$500,000	Not started	Not started	No
SNPLMA	R6	Information Gathering & Analysis	CC	609	2005-CC-609	Adaptive Management of Information Gathering and Analysis Projects	\$550,000	In progress	CC project effective date - 07/01/20-06/30/07 (internal project/no contract term)	Yes
SNPLMA	R6	Information Gathering & Analysis	CC	609A	2005-CC-609A	Historical and Current Assessment of Six Covered and Three Evaluation Bird Species	\$133,500	Not started	Not started	No
S10	05-07	Operations	Selzer, Paul	615	2005-SELZER-615	Consulting Services	\$250,000	Completed	07/01/05-06/30/07	Yes
S10	07-09	Implementation	Oliver, Robert	714	2005-OLIVER-714	BCCE Resource Protection	\$183,280	In progress	06/19/07-06/30/09	Yes

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	EXTENDED PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED	STATUS (7/1/05 through 06/30/07)	CONTRACT DATES/NOTES	REPORT REQUIRED
SNPLMA	R4	Information Gathering & Analysis	UNLV	1006	2003-UNLV-1006	Floristic Survey of the Black Mountains	\$26,570	Completed	04/20/05-12/31/06	Yes
S10	05-07	Operations	SNEI	1007	2005-SNEI-2007	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$382,298	Completed	01/03/06-06/30/07	Yes
SNPLMA	R4	Information Gathering & Analysis	USGS	1010	2003-USGS-1010	USGS AMST Member - Medica	\$45,000	Completed	10/12/04-06/30/07. Included in project 439	Yes
S10	05-07	Operations	Buschelman, Michael	BUSCHELMAN	2003-BUSCHELMAN	Surface Water Rights Consulting	\$30,500	Completed	03/16/04-06/30/07	Yes
S10	05-07	Implementation	CC	DTHABITAT	2005-CC-DTHABITAT	Desert Tortoise Habitat at Government Center	\$141,000	Completed	CC project effective date - 07/01/20-06/30/07 (internal project/no contract term)	Yes

PROJECT REPORTS

(The header on the first page of each project report displays the project number on the first line, followed by the funding source and biennium or SNPLMA funding round on the second line.)

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LEAD AGENCY

Las Vegas Valley Water District/Las Vegas Springs Preserve

Project Title

Las Vegas Bearpoppy Research, Buckwheat Salvage Study, Soil Studies, Germination Trials
2001-LVSP-101AD
Information Gathering and Analysis

Project Description

Researchers at the Springs Preserve developed a research program to: 1) determine the distribution of seed in the seedbank around poppy plants, 2) determine the feasibility of salvaging Las Vegas buckwheat plants utilizing three methods, 3) identify the characteristics of soil in Las Vegas bearpoppy habitats, 4) determine germination and propagation requirements of Las Vegas bearpoppy, and 5) determine germination and propagation requirements of Las Vegas buckwheat.



Las Vegas Bearpoppy

Project Status

Completed. The Las Vegas Bearpoppy Seedbank Distribution and Las Vegas Buckwheat Salvage/Transplant studies were completed in 2004. Results of this work were reported in rare plant research at the Springs Preserve 2000-2004. The soils characteristic work was completed by Dr. Patrick Drohan and results of this work are reported in "Status of Soil Monitoring in *Eriogonum corymbosum* var. and *Arctomecon californica* Habitat at the Springs Preserve," March 2006. Given the uncertainty in germination and propagation requirements of Las Vegas bearpoppy, and promising findings with regard to buckwheat, funds to study germination of Las Vegas buckwheat were made available to focus solely on Las Vegas bearpoppy. Bitterroot Restoration conducted propagation research on the Las Vegas bearpoppy to identify successful germination techniques and prepare protocols for full-scale production if possible. Bitterroot successfully germinated Las Vegas bearpoppy utilizing a heat/scarification pretreatment, cold-moist stratification, and gibberellic acid treatment. Seedling growth had not been achieved at the time of publication, but researchers were hopeful. The full results of this work can be found in "Germination of the Las Vegas Bearpoppy (*Arctomecon californica*)."



Buckwheat

Partners and/or Subcontractors

Dr. Patrick Drohan, UNLV, Bitterroot Restoration, Inc.

Agency Project Contact

Dr. Von K. Winkel, Springs Preserve, 1001 S. Valley View Blvd., Las Vegas, NV 89107,
(702) 822-7700

Funding Amount Awarded

\$50,000

Contract Term

07/01/2001 through 06/30/2003, soils characteristics work completed in 2006

LEAD AGENCY

University of Nevada, Las Vegas

Project Title

Desert Pocket Mouse Study
1999-UNLV-102
Information Gathering and Analysis

Project Description

The purpose of this project was to conduct population surveys and genetic studies of the desert pocket mouse in Southern Nevada.

Project Status

Completed. The desert pocket mouse population surveys took place on the Las Vegas Valley Water District's North Well Field and a report on the findings was submitted to Clark County in 2002. A full description of the findings can be found in "Population ecology of *Chaetodipus penicillatus* in Clark Co., Nevada" by Kerstan Micone. The genetics study of the desert pocket mouse was completed in 2006 and can be found in "Evolutionary and conservation units in the desert pocket mouse, *Chaetodipus penicillatus*" by Zane Marshall.

Partners and/or Subcontractors

Las Vegas Valley Water District

Agency Project Contact

Dr. Brett Riddle, School of Life Sciences, UNLV, 4505 Maryland Pky.,
Las Vegas, NV 89154, (702) 895-3133, Brett.riddle@unlv.edu

Funding Amount Awarded

\$45,000

Contract Term

06/15/1999 through 6/30/2001, genetics study completed in 2006

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LEAD AGENCY

National Park Service

Project Title

Relict Leopard Frog Monitoring and Management
2003-NPS-179
Information Gathering and Analysis

Project Description

This project funded coordination, oversight, and participation in activities involved in monitoring and managing the relict leopard frog (*Rana onca*). The project included planning efforts and active management to create a relict leopard frog rearing facility, collecting and rearing eggs and tadpoles from wild populations, and transplanting these frogs to new sites to establish new populations. It also included monitoring existing and newly established populations.



Adult relict leopard frog

Project Status

Completed. Since the start of the project, relict leopard frogs have been translocated into five experimental sites within their historical range. A total of 977 frogs and 2747 tadpoles were released into the wild since 2003. Relative abundance monitoring surveys were conducted during the night at the five experimental sites and five natural sites each spring and fall of 2004 and 2005. Frog habitat was enhanced at two sites. A Conservation Agreement and Strategy for the relict leopard frog was finalized in November 2005. The National Park Service (NPS) created relict leopard frog databases in association with the Conservation Agreement Strategy.

Partners and/or Subcontractors

Cristina Velez, Research Assistant, NPS
Monitoring Programs, Public Lands Institute,
UNLV

Agency Project Contact

Ross Haley, NPS, Resource Management,
LMNRA, Boulder City, NV, (702) 293-8950,
ross_haley@nps.gov



Biologists release relict leopard frog tadpoles

Funding Amount Awarded

\$182,850

Contract Term

01/06/2004 through 02/01/2006

LEAD AGENCY

USDA Forest Service, Humboldt-Toiyabe National Forest, Spring Mountains National Recreation Area

Project Title

Spring Mountains National Recreation Area
Landscape Assessment
2003-USFS-SMNRA-196
Planning

Project Description

This project analyzes and integrates the social needs and biological/botanical requirements within the Spring Mountains National Recreation Area (SMNRA). The evaluation will consider the entire landscape within the National Recreation Area (NRA). The landscape assessment will identify potential management actions to reverse or improve trends, future monitoring/inventory needs, and mitigation measures to ensure both species sustainability and responsiveness to social needs. The assessment provides recommendations for protection of special status species by addressing species viability, biodiversity hotspots, and habitats at risk while balancing identified potential recreational needs for the area.



Meadow and bristlecone forest

The project was split into two phases to allow for an extension of time to complete the project. Understanding and categorizing existing biological and botanical conditions across the landscape, and completing current and potential recreational opportunities for the NRA was accomplished in partnership with the USFWS via an interdisciplinary team.

Project Status

Completed. The first phase of the project is complete although the project is not considered closed, as a final invoice has not been submitted.

A draft of Chapters 1 through 4 including: Characterization of the NRA, Issues and Key Questions, Reference, and Current Conditions was completed in this phase. An expanded vegetation classification and ecological system data layer was also developed.

The next phase will interpret data gathered to complete synthesis and the integration of separate ecosystem elements, as well as identify management actions for completion of the final Landscape Assessment. This work will be completed under a new contract in 2007.

Partners and/or Subcontractors

ENTRIX, Inc. – Subcontractor
SWCA Environmental Consultants – Subcontractor
Nevada National Heritage Program (NNHP) – Subcontractor
Nevada Department of Wildlife (NDOW) – Partner
USFWS – Partner

Agency Project Contact

Randall M. Sharp, U.S. Forest Service
(USFS) National Resources Staff Officer,
(775) 355-5313, rsharp@fs.fed.us

Funding Amount Awarded

\$2,671,279, amended to \$2,231,036

Contract Term

02/04/2004 through 06/30/2007



Winter recreation

LEAD AGENCY

U.S. Forest Service

Project Title

Inventory and Monitoring of Rare Plant Species on the
Spring Mountains National Recreation Area
2003-USFS-200
Information Gathering and Analysis

Project Description

The purpose of monitoring rough *angelica*, Clokey's egg vetch, and high elevation plant communities was to continually assess the status of the taxa to detect biologically significant changes in population density and age structure over time. In addition, the conditions of the plant communities were also monitored. These projects detect biologically significant changes in plant community structure and composition over time. Monitoring is a tool to help guide management decisions that have a potential to affect rare plant communities.

Inventories for rare plants were conducted in the SMNRA, focusing on the west side of the Spring Mountains Range. Information on the locations of rare plants will be used to minimize effects of future projects on rare plants.

Project Status

Completed. Surveys were conducted in 2005 at long-term monitoring plots for rough *angelica*, Clokey's egg vetch, and two Bristlecone Pine Woodland community plots. The results have been analyzed and compared to previous surveys. Status reports for the species and community plots have been produced.



Survey of bristlecone pine woodland plot

Partners and/or Subcontractors

Dr. Donald Farrar, Department of
Botany, Iowa State University, Ames, Iowa

Agency Project Contact

Amy Nichols, Natural Resource Officer, SMNRA, Las Vegas, NV, (702) 515-5421,
anichols@fs.fed.us

Funding Amount Awarded

\$90,513

Contract Term

03/16/2004 through 02/28/2006

LEAD AGENCY

National Park Service

Project Title

Wildlife Inventory Monitoring and Management
2003-NPS-229
Information Gathering and Analysis

Project Description

This project focused on monitoring bald eagles, peregrine falcons, willow flycatchers, and desert tortoises in the Lake Mead National Recreation Area (LMNRA) which includes approximately 464,950 acres of land in Clark County.

These lands lie in close proximity to over 181,000 acres of water in Lake Mead and Lake Mohave. Lands within the recreation area also include riparian areas along the Virgin and Muddy Rivers, the Las Vegas Wash, and numerous springs and springbrooks. Areas further from these water sources serve as habitat to a variety of species adapted to life in the Mojave Desert.

LMNRA also receives more than 10 million visitors annually and is close to the Las Vegas urban area, the fastest growing city of its size in the United States. Other surrounding communities, though smaller, are also growing at a rapid pace. Demands placed on the resources at Lake Mead by this growing population range from groundwater depletion to off-road vehicle use. Rare and sensitive species living on the recreation area are monitored in order to detect problems which require management attention, and to determine the effectiveness of ongoing management activities.



Juvenile peregrine falcon



Surveying for bald eagles at Lake Mead

Project Status

Completed. Peregrine falcon, willow flycatcher, bald eagle and desert tortoise surveys were conducted during 2004 and 2005. Some highlights of the data collected during this period include the discovery of one new peregrine nesting territory in each of the two years, bringing the total of known nesting territories at LMNRA to 15. There were two relatively high counts of bald eagles with 60 observed in 2004 and 67 in 2005. The discovery of two occupied willow flycatcher territories on Lake Mohave well into July indicated the probability of successful nesting. Also, three of the remaining nine desert

tortoise transmitters left over from translocation studies conducted by the University of Nevada, Reno (UNR) on the Mormon Mesa were recovered.

Partners and/or Subcontractors

UNLV, Bureau of Reclamation, Nevada Department of Wildlife (NDOW), Arizona Game and Fish, USFWS, Bureau of Land Management (BLM), UNR, Clark County, San Bernardino County Museum, Institute for Bird Populations

Agency Project Contact

Ross Haley, NPS, LMNRA, Boulder City, NV, (702) 293-8950, ross_haley@nps.gov

Funding Amount Awarded

\$239,108

Contract Term

01/06/2004 through 02/01/2006

LEAD AGENCY

University of Nevada, Las Vegas

Project Title

Temperature Acclimation/Oxygen Consumption in
Rana onca larvae
2003-UNLV-230
Information Gathering and Analysis

Project Description

This project combined a laboratory evaluation of the effects of temperature on growth and development of the aquatic larval phase (tadpoles) of the relict leopard frog life cycle, with acute measures of acclimation to specific temperatures spanning the range of temperatures for current occupied, as well as potential, frog habitat. A field study was conducted examining summer (lowest water) conditions for 21 springs and seeps on Gold Butte that might be considered as localities for new frog populations.



Egg mass with developing tadpoles

Project Status

Completed. Growth and development studies were completed. The studies and data analyzed show a clear peak for most rapid development and highest survivorship at 25°C. Oxygen consumption and temperature preference studies were also completed. Preliminary analysis of both showed some acclimation to rearing temperature. Preliminary evaluation of Gold Butte water sources was also completed. The preliminary analyses do not include final data collection in late 2005 and early 2006. Sprint speed studies, to examine whether temperature might affect capacity for predator evasion, were completed, but no analysis was done before the termination of funding.

Partners and/or Subcontractors

NPS, LMNRA

Agency Project Contact

Dr. Karin Hoff, Associate Research Professor,
UNLV, (702) 263-1036

Funding Amount Awarded

\$83,450

Contract Term

01/20/2004 through 02/28/2006



Adult frog (courtesy of Ross Haley, NPS
LMNRA)

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LEAD AGENCY

University of Nevada, Las Vegas

Project Title

Evaluation of the Impact of Vegetation Encroachment
on Relict Leopard Frog Populations
2003-UNLV-232
Information Gathering and Analysis

Project Description

Emergent native vegetation was implicated as a threat to some remaining relict leopard frog populations. This research tested the hypothesis that the preferred habitat for adult relict leopard frogs is springs and streams without dense stands of emergent vegetation and mostly open shoreline. The conducted research consisted of a radio telemetry study of resource selection. The objective was to provide useful information to assist with management of relict leopard frog habitat.



Adult relict leopard frog

Project Status

Completed. The general conclusion of this study was that adult relict leopard frogs occur significantly more often in areas with less emergent vegetation cover, particularly in areas with less tall (> 25 cm) vegetation cover to impede frog movement. Frogs were not readily found in tall dense vegetation mats of *Scirpus* and *Eleocharis* or *Typha* that dominate some sites (particularly those springs in the north shore spring complex within LMNRA). Management recommendations included reducing tall vegetation cover and encouraging growth of shorter vegetation.



Biologist radio tracking relict leopard frogs at night

Additional work to complete the radio tracking field season to monitor use of actively managed habitat was not accomplished because Clark County was unable to grant a no-cost six month extension to complete this task.

The findings of this project were presented to the Relict Leopard Frog Conservation Team on December 13, 2005. The recommendations of the Relict Leopard Frog Conservation Team, along with the findings of this research, were presented to the NPS Management Team, LMNRA, on January 24, 2006.

The NPS team accepted the recommended follow-up research that includes active vegetation management at two relict leopard frog spring sites. Findings of the current research were also presented in a talk titled, "Habitat Selection by the Relict Leopard Frog (*Rana onca*): Assessing Effects of Vegetation Encroachment," presented at the Declining Amphibian Populations Task Force, California-Nevada Working Group (January 12-14, 2006).

Partners and/or Subcontractors

NPS, LMNRA

Agency Project Contact

Dr. Jef Jaeger, Public Lands Institute/Department of Biological Sciences, UNLV,
(702) 895-2463, jef.jaeger@unlv.edu

Funding Amount Awarded

\$145,526

Contract Term

01/06/2004 through 02/02/2006

LEAD AGENCY

National Park Service, Lake Mead

Project Title

Law Enforcement
2003-NPS-233
Implementation

Project Status

This project report was incorporated into the project 495 report. See project 495 for complete project report.

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LEAD AGENCY

U.S. Forest Service

Project Title

Law Enforcement
2003-USFS-234
Implementation

Project Status

This project report was incorporated into the project 504 report. See project 504 for complete project report.

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LEAD AGENCY

National Park Service

Project Title

Lake Mead National Recreation Area
Data Collection and Analysis
2003-NPS-235
Information Gathering and Analysis

Project Description

LMNRA includes approximately 464,950 acres of land in Clark County. These lands lie in close proximity to over 181,000 acres of water in Lake Mead and Lake Mohave. Land within the recreation area also includes riparian areas along the Virgin and Muddy Rivers along the Las Vegas Wash, and numerous springs and brooks. Areas further from these water sources serve as habitat to a variety of species adapted to life in the Mojave Desert.

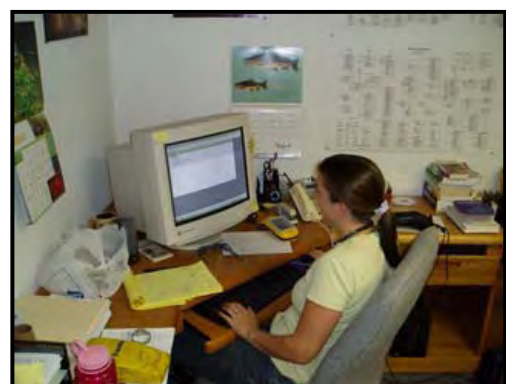
LMNRA also receives more than 10 million visitors annually and is close to the Las Vegas urban area, the fastest growing city of its size in the United States. Population in other surrounding communities, though smaller, is also increasing at a rapid pace. Demands placed on the resources at Lake Mead by this growing population run the gamut from groundwater depletion to off-road vehicle use. Rare and sensitive species living on the recreation area must be monitored in order to detect problems which require management attention, and to determine the effectiveness of ongoing management activities. The objective of this project was to hire a Geographic Information System (GIS) technician and a GIS database programmer to support GIS and database activities for all NPS MSHCP projects.

Project Status

Completed. This project funded two positions to support GIS and database activities for the following NPS projects: Songbird Monitoring (2003-NPS-178), Relict Leopard Frog Monitoring (2003-NPS-179), Wildlife Monitoring and Management (2003-NPS-229), LMNRA Monitoring of Ground Disturbance; Illegal Tracks and Traces (2003-NPS-314), Vegetation Monitoring Program: Rare Plants, Plant Poaching, and Weed



Data mining at Lake Mead NRA



GIS database development at LMNRA

Management Programs (2003-NPS-363), and River Conservation Management Strategy (CMS) (2003-BLM-350). All GIS and database deliverables created for the above projects were the responsibility of the GIS technician and the GIS database programmer.

Partners and/or Subcontractors

None

Agency Project Contact

Mark Sappington, NPS, LMNRA, Boulder City, NV, (702) 293-8974,
mark_sappington@nps.gov

Funding Amount Awarded

\$221,950

Contract Term

01/06/2004 through 02/01/2006

LEAD AGENCY

Biological Resources Research Center, University of Nevada Reno

Project Title

Desert Tortoise Epidemiology: Relationships among Upper Respiratory Tract Diseases in Tortoises, Enzyme-Linked Immunosorbent Assay Test, Status and Disease Symptoms
2003-UNR-BRRC-248
Information Gathering and Analysis

Project Description

The project plan was to address the gap in knowledge about upper respiratory tract diseases in tortoises by examining the effects in small-scale experimental populations. Several aspects of the study are continuing outside of this project. The first is the full factorial design experiment to assess the transmissibility of a positive Enzyme-Linked Immunosorbent Assay (ELISA). This is a critical experiment to help adapt the management of translocated tortoises, insofar as tortoises at the time of this study were euthanized if they tested ELISA positive. The next is the need to examine blood for immune response.



Tortoise field blood sampling collection

Project Status

Completed. However, the epidemiology studies continue. The field portion of the full factorial design experiment to assess the transmissibility of a positive ELISA is now complete. During the term of this project, UNR completed and received approval for the experimental design by the BLM and the USFWS. A sampling protocol was developed. UNR also identified and collected experimental subjects at the Desert Tortoise Conservation Center (DTCC). Lastly, UNR identified a construction contractor and coordinated UNR's work with the Nevada Division of Forestry (NDF).

Partners and/or Subcontractors

None

Agency Project Contact

Ken Hunter, UNR, Dr. Ron Marlow, Associate Research Professor, UNR-Biological Resources Research Center, Reno, NV, (702) 364-1036, (702) 493-0754 and Dr. C. Richard Tracy, Associate Research Professor UNR- Biological Resources Research Center, Reno, NV, (775) 784-4565

Funding Amount Awarded

\$657,500

Contract Term

01/06/2004 through 01/31/2006

LEAD AGENCY

Biological Resources Research Center, University of Nevada Reno

Project Title

Development of a Range-wide Desert Tortoise
Monitoring Training Program
2003-UNR-BRRC-249
Information Gathering and Analysis

Project Description

This project was developed at the request of the USFWS to assist in training range-wide desert tortoise monitoring processes conforming to USFWS protocols. The project involved collaboration between the USFWS, the U.S. Geological Survey (USGS) and colleagues at St. Andrews University, Fife, Scotland. The training benefited the Clark County MSHCP and the USFWS Desert Tortoise Recovery Program by improving desert tortoise monitoring techniques used in Southern Nevada.

The Clark County MSHCP identified monitoring desert tortoise populations as an essential element of desert tortoise conservation. The Desert Tortoise Recovery Plan recommended monitoring desert tortoise populations as an essential part of any sound conservation or management plan.

Project Status

Completed. Comprehensive desert tortoise monitoring training protocols and procedures were developed and used to train hundreds of interns and consultant contractors that work annually on USFWS contracts for desert tortoise monitoring. The training included seminars at the DTCC and field exercises at the training lines at the Large Scale Translocation Site (LSTS) in Jean, Nevada. Field exercises were conducted under realistic conditions using tortoise models and live tortoises to refine the field worker's search image. Each monitoring team's effectiveness at spotting tortoises was evaluated using the USFWS protocols. In addition, desert tortoise monitoring protocols and procedures were demonstrated for agency biologists, managers, other researchers, and consultants.



Sampling desert tortoise for disease organisms

Partners and/or Subcontractors

Roy Averil-Murray, USFWS; Steve Corn, USGS; Phil Medica, USGS; Bridgette Hagerty, UNR; Fran Sandmeier, UNR

Agency Project Contact

Dr. Ron Marlow, Associate Research Professor, UNR- Biological Resources Research Center, Reno, NV, (702) 364-1036, Dr. C. Richard Tracy, Associate Research Professor UNR-BRRC, Reno, NV, (775) 784-4565

Funding Amount Awarded

\$161,000

Contract Term

01/06/2004 through 01/31/2006

LEAD AGENCY

Southern Nevada Environmental, Inc.

Project Title

Clark County Desert Tortoise Transfer and Holding Facility
2003-SNEI-251-1
2003-SNEI-251-2
Operations

Project Status

These project reports were incorporated into the project 1007 report. See project 1007 for complete project report.

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LEAD AGENCY

Biological Resources Research Center, University of Nevada Reno

Project Title

Baseline Density Monitoring: Southern Nevada
Desert Wildlife Management Area Populations
of the Desert Tortoise
2003-UNR-BRRC-252
Information Gathering and Analysis

Project Description

The MSHCP identifies monitoring desert tortoise populations as an essential element of desert tortoise conservation. The Desert Tortoise Recovery Plan recommended monitoring desert tortoise populations as an essential part of any sound conservation or management plan. The center collaborated with the USFWS, the USGS and colleagues at St. Andrews University to conduct tortoise monitoring in Southern Nevada, improve monitoring techniques, and evaluate and develop new monitoring techniques. The USFWS requested staff monitor range-wide compliance with protocols and evaluate data as it was collected. This required receiving data electronically and hard copies as soon as possible. The protocols currently being followed are sensitive to certain types of observer error. This type of error can, in some cases, be detected by ongoing evaluation of data collected and corrected. The data sets sent by other field workers were then evaluated and a report of the results forwarded to the USFWS. At the request of the USFWS, the center undertook evaluation of current monitoring techniques, and developed a new approach to monitoring the tortoise population density. Training described in the proposal conforms to the agency's desert tortoise monitoring protocols and the training benefited the Clark County MSHCP and the USFWS Desert Tortoise Recovery Program.



Sampling desert tortoise for disease organisms

Project Status

Completed. In 2004, more than 220 desert tortoise density transects were conducted throughout the tortoise habitat in Southern Nevada and adjacent areas. In 2005, more than 330 transects were conducted. The data was submitted to the USFWS for analysis and determination of range-wide population trend.

Partners and/or Subcontractors

Roy Averil-Murray, USFWS; Steve Corn, U.S. Geological Survey; Phil Medica, USGS; Ken Nussear, USGS

Agency Project Contact

Ron Marlow, Assistant Research Professor, UNLV, (702) 493-0754; C. Richard Tracy, Director of the Biological Resource Research Center, and Research Professor, UNR, (775) 784-4565

Funding Amount Awarded

\$1,377,000

Contract Term

02/17/2004 through 03/21/2006

LEAD AGENCY

National Park Service

Project Title

Burro Removal at Lake Mead National Recreation Area
2005-NPS-255
Implementation

Project Description

Under the Desert Tortoise Recovery Plan it is recommend that wild horses and burros be removed from lands managed for recovery of desert tortoise populations. Burros, in particular, survive very well in the Mojave Desert ecosystem, but they are not native, and consequently are not adequately controlled by native predators. Without human intervention, populations increase to the point where habitat for native species, like the tortoise, becomes damaged.

The Burro Management Plan at LMNRA finalized in 1995 identified approximately 517,021 acres in seven different areas within the NRA occupied by burros. It outlined a plan to reduce burro numbers throughout the NRA, and reduce the number of areas being used by burros from seven to three. Acreage being used by burros was planned to be reduced to 137,822 acres and numbers of burros were to be reduced from the estimated 1600 at the time the plan was being written to approximately 300.



Burro roundup and removal

Burros captured from LMNRA were given veterinary treatment and placed in the BLM adoption program. Live removal and adoption isn't the most cost-effective means for burro control, but it is the most humane and politically acceptable alternative available. On neighboring BLM lands, these animals are protected under the Wild Horse and Burro Act; management actions are coordinated with BLM with sensitivity toward public opinion and perceptions of the program. Costs per animal removed have escalated in recent years due to the fact that as numbers of animals are reduced, search times during helicopter round-ups and captures have increased proportionately. This was a predictable and expected outcome of reducing population densities, and should not be seen as a program failure. In the absence of good survey data which could provide reliable population estimates within known confidence limits, rising search times and capture costs are one indicator that the program is achieving desired goals (i.e. reduced numbers of burros). Improving range conditions are the next best indicator, but these

can be deceiving and difficult to detect during drought conditions and changes are slow to occur even under good conditions in the Mojave Desert.

Project Status

Completed. Since the plan was finalized in 1995, 1637 burros have been captured and removed from LMNRA. This amounts to an average of 164 burros per year over this ten year span. Prior to enactment of the plan, 1546 burros were removed from the park between 1979 and 1995, approximately 97 burros per year. This rate of removal was inadequate to keep up with recruitment rates. Consequently, prior to implementation of the plan, range conditions in many areas of the park suffered from overgrazing by burros. Range conditions in the Mojave Desert are slow to recover after such impacts have been inflicted, but conditions are improving. During this reporting period (2004 and 2005) 63 burros were removed from the park in the area referred to as the Muddy Mountains Area on the map.

Partners and/or Subcontractors

Bureau of Land Management

Agency Project Contact

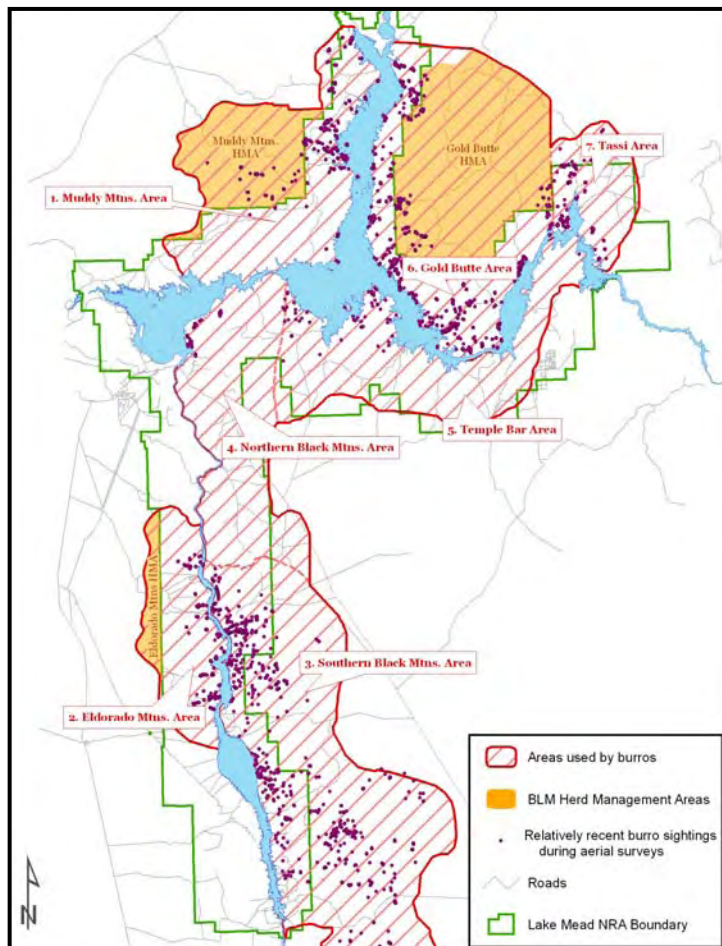
Ross Haley, Supervisory Resource Management Specialist, NPS, LMNRA, Boulder City NV, (702) 293-8950, ross_haley@nps.gov

Funding Amount Awarded

\$34,500

Contract Term

03/02/2004 through 04/30/2006



Map of burro monitoring and herd management areas

LEAD AGENCY

Partners in Conservation

Project Title

Global Positioning System Roads and Mapping
2003-PIC-256
Operations

Project Description

The project required using Global Positioning System (GPS) to create a baseline to accurately locate and map roads, key points, sites, and various items. Road management strategies and route designation systems conserve plant and animal species while ensuring access to public land in rural Clark County. Before either of those two objectives can be implemented, an accurate and complete baseline inventory must be established. Partners in Conservation (PIC), BLM, and volunteers from rural organizations worked together to conduct GPS surveys to accurately locate routes, campsites, trash, cattle guards, parking areas, intersections, signs, illegal hill climbs, as well as digitally photographing key points and scenic sites.



Volunteers collect GIS data in Gold Butte areas of critical concern

More than 1,500 volunteer hours were donated to collect GPS data on more than 1,200 miles of roads in the three Areas of Critical Environmental Concern (ACECs) in northeast Clark County. Approximately 1,400 intersections and 800 other feature points were collected.

PIC worked with the BLM to develop a data dictionary for the project as well as protocols for volunteers to follow while doing fieldwork. PIC and the BLM trained and worked with the volunteers to ensure quality and consistent GIS data collection. PIC reviewed, downloaded, differentially corrected, and forwarded all GIS data to the BLM as well as associated copies of all daily field notes and other relevant documents and files.



Road GPS in progress in Mormon Mesa areas of critical concern

Project Status

Completed. Displays and presentations were prepared for groups such as rural organizations, public relations events, town board and city council meetings, and miscellaneous workshops and/or conferences. The three ACECs in northeast

Clark County and other adjacent areas are 100% mapped with Trimble Geo3c GIS equipment and all the data has been transmitted to the BLM and Clark County. The data verification and review is complete.

Partners and/or Subcontractors

Clark County MSHCP, Clark County, BLM, American Legion Post 75, Moapa Valley Veterans of Foreign Wars, Mesquite Virgin Valley Sunrise Rotary Club, Mesquite ATV Club.

Agency Project Contact

Elise McAllister, Administrator, PIC; Moapa, NV (702) 864-2579

Funding Amount Awarded

\$297,000

Contract Term

01/20/2004 through 06/30/2006

LEAD AGENCY

Biological Resources Research Center, University of Nevada Reno

Project Title

Increasing Effectiveness and Economy in Density
Monitoring of the Desert Tortoise
2003-UNR-BRRC-257
Information Gathering and Analysis

Project Description

This project used new approaches to help make range-wide desert tortoise monitoring more precise and efficient. Increased efficiency and precision benefit conservation of tortoises, allowing for adaptation of management actions.

The Clark County Short-term Desert Tortoise Habitat Conservation Plan (HCP), the DCP and the MSHCP, all identify monitoring desert tortoise populations as an essential element of desert tortoise conservation. The Desert Tortoise Recovery Plan recommended monitoring desert tortoise populations as an essential part of any sound conservation or management plan. This project collaborated with the USFWS, the USGS and colleagues at St. Andrews University, Fife, Scotland in conducting tortoise monitoring in Southern Nevada, improving current monitoring techniques, and in evaluating and developing new and better monitoring options. Recent implementation of range-wide monitoring has illustrated the need for increasing efficacy and economy in monitoring techniques. The USFWS, the USFWS Desert Tortoise Monitoring and Implementation Committee (DTMIC), the Management Oversight Group (MOG), and the Management Oversight Group Technical Advisory Committee (MOG-TAC) have requested further studies to increase the efficacy and efficiency of current density monitoring techniques.

The evaluation of current monitoring techniques has been undertaken and a new approach to monitoring tortoise population density has been developed. This new technique was presented to the Desert Tortoise MOG-TAC in fall 2001. It was proposed that a new approach to monitoring procedures data evaluation may lead to improvements in the accuracy of density estimates and a significant decrease in cost. Simulations of this technique have shown great promise. The



Automated data collection to PDA



Training for tortoise monitoring

MOG-TAC approved field evaluations of the new approach and testing to begin the new procedure was proposed.

The objective of the proposal was to make range-wide desert tortoise monitoring more precise and efficient. Increased efficiency and precision benefit conservation of tortoises, allowing for adaptation of management actions.

The research benefits the Clark County MSHCP, federal land management agencies, and the USFWS Desert Tortoise Recovery Plan.

Project Status

Completed. In 2004, the USFWS formed the DTMIC to replace the previous MOG-TAC. The DTMIC was charged with providing technical advice to the USFWS for range-wide desert tortoise monitoring. The committee is composed of all the senior scientists and partners on the project and representatives from California. This committee established the parameters for range-wide monitoring including the distribution of survey points, protocols, methods for quality assurance and quality control, and analysis of data. In 2004, the project tested the use of Personal Digital Assistants (PDAs) for automating data collection. In 2005, the project tested the efficacy of monitoring habitat and threat parameters. These innovations have significantly increased the value of the desert tortoise density monitoring program.

Partners and/or Subcontractors

Roy Averil-Murray, USFWS; Steve Corn, USGS; Phil Medica, USGS; Ken Nussear, USGS

Agency Project Contact

Dr. Ron Marlow, Associate Research Professor, UNR- Biological Resources Research Center, Reno, NV, (702) 364-1036, (702) 493-0754 and Dr. C. Richard Tracy, Associate Research Professor UNR-BRRC, Reno, NV, (775) 784-4565

Funding Amount Awarded

\$312,000

Contract Term

01/06/2004 through 01/31/2006

LEAD AGENCY

Biological Resource Research Center, University of Nevada Reno

Project Title

Techniques for Monitoring Desert Tortoise Juvenile Recruitment
2003-UNR-BRRC-264
Information Gathering and Analysis

Project Description

In 2001, the USGS and UNR, BRRC studied recruitment of desert tortoises with emphasis on reproduction of female desert tortoises (*Gopherus agassizii*) at three sites in Clark County, Nevada. The objective of this project would have been to continue that work and gain information on the reproductive ecology of the desert tortoise by documenting the number of clutches and the numbers of eggs per clutch female tortoises produce during a reproductive season. Another part of the project would have documented vegetation and rainfall conditions and how these related to tortoise reproduction within sites, among sites, and throughout years.



Neonatal tortoise

The next phase of the recruitment study would have been to investigate the missing juvenile age classes of tortoises. Very little information is available for the survival of eggs in the nest and for young tortoises emerging from the nest. Some investigation was done on these life stages (notably work done on captive juveniles at the Ft. Irwin Study Site, Ft. Irwin, California, and an unpublished master's thesis by Curtis Bjurlin at Utah State University). Nonetheless, very little is known about the fate of juvenile tortoises from age three, until they become sexually mature, encompassing a span of nearly 12 years. These age classes of tortoises are apparently subject to the highest levels of predation, most subject to environmental stresses and most difficult to study. Developing good management options for desert tortoise recovery requires a better understanding of the biology of tortoise recruitment from the oviposition of eggs into nests by female tortoises through entry into the reproductively active population. For this critical research, study techniques and strategies to monitor the process were to be developed by this project.



Juvenile tortoise

Project Status

Withdrawn. This project was not initiated and was withdrawn. This project was put on hold awaiting development of key technologies for studying movements of young tortoises.

Partners and/or Subcontractors

Dr. Ken Nussear, USGS

Agency Project Contact

Dr. Ron Marlow, Associate Research Professor, UNR-BRRC, Reno, NV, (702) 3641036, (702) 493-0754 and Dr. C. Richard Tracy, Associate Research Professor, UNR-BRRC, Reno, NV, (775) 784-4565

Funding Amount Awarded

\$313,000

Contract Term

Contract was issued, but project was never initiated

LEAD AGENCY

Southern Nevada Water Authority

Project Title

Investigation of Bat Species Diversity and Distribution
Along the Las Vegas Wash
2003-SNWA-266
Information Gathering and Analysis

Project Description

The purpose of this study was to provide baseline knowledge of temporal changes in inventory and differential habitat use within Las Vegas Wash. Because the baseline was being developed during the initial phase of an extensive riparian restoration program in the Wash, the effects of the program on resident and transient bat populations can be documented.

Project Status

Withdrawn. The project costs were considerably less than expected due to advances in technology. No funding was needed.

The Southern Nevada Water Authority (SNWA) documented a total of 16 species of bats, including *Macrotus californicus*, *Myotis californicum*, *Myotis ciliolabrum*, *Myotis thysanodes*, *Myotis yumanensis*, *Lasiurus blossevillii*, *Lasiurus cinereus*, *Lasiurus xanthinus*, *Pipistrellus hesperus*, *Eptesicus fuscus*, *Corynorhinus townsendii*, *Idionycteris phyllotis*, *Antrozous pallidus*, *Tadarida brasiliensis*, *Nyctinomops macrotis*, and *Eumops perotis californicus*. Eight of the species are listed as Federal Species of Concern, three are state-listed sensitive and four are state-listed protected. Three species are listed on the Clark County MSHCP evaluation list and five are on the MSHCP watch list. Six species had previously never been recorded in the Las Vegas Valley, including *Myotis ciliolabrum*, *M. thysanodes*, *M. yumanensis*, *Lasiurus blossevillii*, and *Idionycteris phyllotis*.

Partners and/or Subcontractors

Las Vegas Wash Coordination Committee, U.S. Bureau of Reclamation, O'Farrell Biological Consulting

Agency Project Contact

Seth A. Shanahan, Environmental Biologist, SNWA, Las Vegas, NV, (702) 822-3314

Funding Amount Awarded

\$35,797

Contract Term

07/01/2004 through 03/01/2006, withdrawn 09/20/2005

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LEAD AGENCY

National Park Service, Lake Mead

Project Title

Plant Material Production
2003-NPS-272
Implementation

Project Description

Restoration of desert tortoise habitat and other special status species requires the use of native plants not available from local nurseries. The NPS staffed a three-acre nursery with three commercial-quality greenhouses and irrigated grow-out areas. This nursery provided native plants to the USFS, USFWS, BLM, NPS, and other agencies using their own native seed stock, allowing them to restore impacted habitats using genetically-native material. The NPS also developed methods for germinating, growing, and out-planting many native Mojave Desert species, which differ substantially from commercially grown species.



An Environmental Careers Organization member is examining cottonwood seedlings

Project Status

Completed. A final report was completed for this project during the 2005-2007 biennium. All plant material production work had been completed during the 2003-2005 biennium.

Partners and/or Subcontractors

BLM, City of Boulder City, USFWS, Bureau of Reclamation, Las Vegas Valley Water District, SNWA, USFS

Agency Project Contact

Alice Newton, Supervisory Resource Management Specialist, NPS, LMNRA (702) 293 -8977

Funding Amount Awarded

\$51,750

Contract Term

07/02/2003 through 08/01/2005



A Nevada Conservation Corp member is tending to grape vine *Vitis arizonica*

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LEAD AGENCY

Southern Nevada Water Authority

Project Title

Investigation of Amphibian Species Diversity and Distribution along the Las Vegas Wash
2003-SNWA-286
Information Gathering and Analysis

Project Description

The amphibian study was initiated in April 2004. Visual encounter surveys were used to determine the presence of amphibians in the Las Vegas Wash. Visual encounter surveys are frequently used in the region to survey for amphibian populations. Surveys consist of visual and audio searches of aquatic habitats close to shorelines and terrestrial habitat within several meters of water. These surveys are conducted at night when adult anurans are more easily detected.

Project Status

Withdrawn. After preliminary frog studies were completed in 2004 and 2005, yielding the detection of only those two species, it was determined that additional surveys were not necessary. None of the funds for this project were expended.

Surveys were to be conducted approximately two to three nights of each month for a two-year period, allowing for detection of early breeding anurans, such as the pacific treefrog, and other species not breeding until the summer monsoons, such as spadefoot toads. At project conception, visual encounter surveys had detected the presence of two anurans in the Wash: the American bullfrog and the Woodhouse's toad. The Woodhouse's toad is listed on the Clark County MSHCP watch list.

Partners and/or Subcontractors

Las Vegas Wash Coordination Committee, U.S. Bureau of Reclamation

Agency Project Contact

Seth A. Shanahan, Environmental Biologist, SNWA, Las Vegas, NV, (702) 822-3314

Funding Amount Awarded

\$27,810

Contract Term

07/01/2004 through 03/01/2006, withdrawn 09/20/2005

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LEAD AGENCY

University of Nevada, Reno

Project Title

Translocation, Long-term Monitoring, Desert Tortoise Density Evaluation, and Establishment of New LSTSs
2003-UNR-289
Information Gathering and Analysis

Project Description

The project was a five-to-six year program examining the feasibility of large-scale desert tortoise translocation into different habitats, identifying the release conditions for maximum success, and the long-term efficacy of translocation.

In February 1996, Clark County contracted with USGS and UNR to develop and implement an experimental desert tortoise translocation program to address disposition of displaced tortoises. The first programmatic group of tortoises was released on April 23, 1997. Since that time, more than 6,000 tortoises have been translocated into the LSTS adjacent to Interstate 15, south of Jean, Nevada.

This project addressed the USFWS request for Clark County to evaluate historical and current use of the LSTS and the possible impact of increased population density on tortoise survival at a translocation site. The project also evaluated the need for future uses and additional areas for displaced tortoises translocation.

Project Status

Completed. The status of translocated tortoises in the LSTS was monitored annually as part of range-wide baseline monitoring. In 2004 and 2005, more than 30 transects were conducted. Transect data was transferred weekly to the USFWS database for analysis as part of the USFWS range-wide desert tortoise monitoring program. The data from the monitoring showed that the total estimated number of tortoises in the LSTS remained the same, despite the translocation of more than 6,000 tortoises. This was attributed to population increases from translocation being offset by tortoises dying from other causes.

The evaluation of density impacts on tortoises showed that after an initial accommodation period of two to four weeks, tortoises placed in pens with very high densities adjusted to those higher levels with few indications of negative impact.

Clark County contracted to prepare an environmental assessment identifying several potential locations for translocation of tortoises, and provide technical and scientific assistance to the Desert Tortoise Working Group and consultant for evaluation of data. At the time this project concluded, uncertainty about pending legislation identifying public lands for disposal delayed selection of a second translocation site.

Partners and/or Subcontractors

Phil Medica, USGS – Biological Resources Division (BRD), Las Vegas; Dr. P. Steve Corn, USGS – BRD, Las Vegas; Dr. Ken Nussear, USGS; Roy Averil-Murray, USFWS

Agency Project Contact

Dr. C. Richard Tracy, UNR, (775) 784-4565

Funding Amount Awarded

\$161,400

Contract Term

02/17/2004 through 03/31/2006

LEAD AGENCY

University of Nevada, Las Vegas and the National Park Service

Project Title

The Affects of Athel (*Tamarix aphylla*) on Riparian Habitats
at Lake Mead National Recreation Area
2003-UNLV-294
Information Gathering and Analysis

Project Description

The objective of the research was to determine the competitive interactions of *Tamarix aphylla* (athel tree) and its impact on soil chemistry to gain a better understanding of the possible threat the invasive species poses on riparian ecosystems in the southwest United States.

Project Status

Completed. Growth competition experiments were performed pitting *T. aphylla* against the invasive *Tamarix ramosissima* (salt cedar) and the native *Salix gooddingii* (Goodding's willow), all three of which occur at Lake Mead. These experiments were performed in the field at the drawdown zone of Lake Mead and in a controlled nursery experiment. Impact on soil chemistry was investigated by collecting soils and accompanying vegetation measurements under the same three species of plants and comparing soil salinity, nitrogen, pH, particle size and organic matter. The hypotheses were *T. aphylla* will be less affected by the presence of either of the competitors because of its high growth rates and tree life form. In addition, *T. aphylla*'s impact on soil chemistry should be significantly different from the other species in the study because of its larger size and evergreen habit.

Partners and/or Subcontractors

None

Agency Project Contact

Dr. Lawrence Walker, Professor, Department of Biological Sciences, UNLV,
(702) 328-6035, walker@unlv.nevada.edu

Funding Amount Awarded

\$64,500

Contract Term

01/20/2004 through 12/31/2006

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LEAD AGENCY

University of Nevada, Las Vegas and the National Park Service

Project Title

Factors Affecting Rarity of the Las Vegas Bearpoppy
2003-UNLV-305
Information Gathering and Analysis

Project Description

The objective of this research project was to determine the seed fates of the Las Vegas bearpoppy (*Arctomecon californica*), to identify future metapopulation dynamics, and to further promote conservation efforts. The scope of the project followed seed fates through seed production, seed dispersal, and granivory to incorporation within the soil seed bank. In addition, seed viability testing occurred throughout the project to substantiate seed fate data. The research data was collected from areas traversing the natural range of the bearpoppy over a two-year consecutive period.

Project Status

Completed. The following hypotheses were addressed in this study: 1) seed production corresponds to capsule size and number of rosettes; 2) primary seed dispersal declines leptokurtically from the source; 3) elaiosomes, protein-rich food patches on seeds, promote secondary seed dispersal by ants and rodents; 4) the Las Vegas bearpoppy does not maintain a persistent seed bank either because seeds lose viability when buried, or because seeds are consumed by granivores or seed eaters.

Partners and/or Subcontractors

None

Agency Project Contact

Dr. Lawrence Walker, Professor, Department of Biological Sciences, UNLV,
walker@unlv.nevada.edu (702) 328-6035

Funding Amount Awarded

\$55,500

Contract Term

01/20/2004 through 12/31/2006

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LEAD AGENCY

National Park Service

Project Title

Lake Mead National Recreation Area Monitoring
of Ground Disturbance, Illegal Tracks and Traces
2003-NPS-314
Information Gathering and Analysis

Project Description

This project determined thresholds and triggers for management action concerning illegal off-road vehicle travel. The park was surveyed by ground and air to discover and document off-road vehicle disturbance. Once noted, the disturbance was documented by a GPS and recorded into the park's GIS and other databases. In addition, small traffic counters were placed in 20 selected locations and monitored monthly to determine correlation, if any, between destination site carrying capacity and illegal off-road vehicle use.

Project Status

Completed. Twenty roads with traffic counters were monitored monthly during the project, except for a few months when several counters were washed out during spring flooding. These were replaced and continued to function and were monitored as per the schedule. Illegal track discovery and documentation continued throughout the park during the project. The locations of trespasses and other illegal activities were recorded and entered into a database.

Partners and/or Subcontractors

Nevada Conservation Corps, Great Basin Institute

Agency Project Contact

Alice C. Newton, NPS, LMNRA, Boulder City, NV, (702) 293-8977,
alice_corrine_newton@nps.gov

Funding Amount Awarded

\$50,600

Contract Term

01/06/2004 through 02/01/2006

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LEAD AGENCY

Biological Resources Research Center, University of Nevada Reno

Project Title

Adaptive Management Program
2005-UNR-BRRC-321
Operations

Project Status

This project report was incorporated into the project 439 report. See project 439 for complete project report.

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LEAD AGENCY

U.S. Forest Service

Project Title

Seed Collection of Rare and Native Species of the
Spring Mountains National Recreation Area
2003-USFS-322A
Information Gathering and Analysis

Project Description

The goal of this project was to develop the following: 1) a rare seed bank, 2) a native seed bank for restoration, and 3) germination protocols for rare species. USFS proposed to begin seed banking for five species of rare plants. In addition, the project called for the collection of seeds from rare plant species for use in germination studies to provide background for future propagation efforts.

Project Status

Completed. Forty-seven species of native seed were collected during the term of this project from approximately 15,000 acres on the SMNRA. Seeds were also collected from five species of rare plants for use in germination protocol development.

Germination testing was performed on five of the collected taxa, and propagation protocols were submitted by Red Butte Garden and Arboretum for *Astragalus aequalis*, *Astragalus oophorus* var. *clokeyanus*, *Cirsium clokeyi*, *Penstemon thompsoniae* ssp. *jaegeri*, and *Townsendia jonesii* var. *tumulosa*. A challenge cost-share agreement required the reporting of germination protocols for the five taxa listed above, and these were delivered. In addition, collections of native common plant seeds, including endemic butterfly host plants, were collected for seed that is, and will be, used for restoration projects.

Partners and/or Subcontractors

Red Butte Gardens, University of Utah, Salt Lake City

Agency Project Contact

Heather Hundt, Natural Resource Officer, SMNRA, Las Vegas, NV, (702) 515-5400

Funding Amount Awarded

\$48,960

Contract Term

08/05/2003 through 05/31/2006

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LEAD AGENCY

Southern Nevada Environmental, Inc.

Project Title

Desert Tortoise Transfer and Holding Facility and
Desert Tortoise Translocation Program
2003-SNEI-329-1
2003-SNEI-329-2
Operations

Project Status

These project reports were incorporated into the project 1007 report. See project 1007 for complete project report.

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LEAD AGENCY

The Nature Conservancy

Project Title

Low Elevation Rare Plant Conservation Management Strategy
2003-TNC-330
Planning

Project Description

To fulfill a Clark County MSHCP requirement, The Nature Conservancy (TNC) developed a CMS for nine covered, low elevation plant species. The nine plants were selected by the rare plant working group and include: sticky ringstem, Las Vegas bearpoppy, white bearpoppy, threecorner milk vetch, alkali mariposa lily, Pahrump Valley wild buckwheat, sticky wild buckwheat, white-margined beardtongue, and parish phacelia (*Anulocaulis leiosolenus*, *Arctomecon californica*, *A. merriamii*, *Astragalus geyeri* var. *triquetrus*, *Calochortus striatus*, *Eriogonum bifurcatum*, *Eriogonum viscidulum*, *Penstemon albomarginatus*, and *Phacelia parishii*).

For each taxon or category, the background status and threats information (stresses and sources of stress) was collected and analyzed; conservation measures necessary to adequately protect and conserve populations and habitats was developed; and implementation requirements for the strategy, adaptive management needs, and measurements of conservation success were developed.

Project Status

Completed. The CMS was developed in coordination with the MSHCP Rare Plant Working Group with participants from the BLM Las Vegas District, NPS LMNRA, NDF, UNR-BRRC, and USFWS. The document contains background status information from cooperators and other agencies, individuals, and available literature for all nine taxa or groups. Project related literature and data references for all information sources were included in a bibliographic database for use by cooperators. Population and habitat conceptual models and GIS analyses of threats, potential habitat, and management situations were generated. TNC assisted Dr. Susan Meyer by collecting additional demographic data for the Las Vegas bearpoppy population viability analysis in the spring of 2005 which is included in the CMS.



Las Vegas bearpoppy has more complete background status information than any of the other eight plant taxa



Dr. Susan Meyer at the North LV Air Terminal's Las Vegas bearpoppy site; she is studying seed longevity and 2005 seedling survival rates

TNC's Excel-based conservation planning tool consists of known key ecological attributes, viabilities, and threats information. The documents will provide the groundwork for discussions and development of conservation objectives and strategic actions. As part of the project, a rare plant CMS bibliographic database was developed.

Partners and/or Subcontractors

BLM, Las Vegas District; NPS; LMNRA; NDF; UNR-BRRC

Agency Project Contact

Jim Moore, Mojave Desert Science Director, TNC, Las Vegas, NV
(702) 737-8744, ext. 19

Funding Amount Awarded

\$113,100

Contract Term

01/06/2004 through 07/31/2005, amended through 05/01/2007

LEAD AGENCY

University of Nevada Las Vegas

Project Title

Evaluation of the Nonvascular Plants of Concern in Clark County
2003-UNLV-331
Information Gathering and Analysis

Project Description

This project investigated the status, health, and projected persistence of the 11 bryophyte (nonvascular plants) species of concern (seven evaluation species and four covered species). For each species: 1) the literature was reviewed for taxonomic treatments and historical collection data from Southern Nevada, 2) research was conducted to re-find critical specimens in Clark County including checking potential unexplored regions of similar habitat and recording precise GPS coordinates of such patches, 3) specimens at hand in the UNLV herbarium were assessed for correct identification and location data, and 4) collected specimens were curated and deposited into the UNLV herbarium (now known as the Wesley Niles Herbarium). Specific recommendations were drawn up for each species summarizing the status, health, and any persistence concerns.



A shoot of *Anacolia menziesii*, a species of moss found in Red Rock Canyon, Clark County, NV (mm scale in background)

Project Status

Completed. Six of the 11 species of bryophytes were found to be in fairly good shape (frequency and health), whereas five species are precarious based on their low population numbers or extreme rarity. In three cases (*Grimmia americana*, *Targionia sp. nov.*, and *Trichostomum sweetii*), the listed species is a member of a complex of closely related species and identification is complicated.

Major accomplishments are summarized on a species-by-species basis: 1) For six species (*Anacolia menziesii*, *Crossidium seriatum*, *Dicranoweisia crispula*, *Didymodon nevadensis*, *Syntrichia princeps*, and *Targionia sp. nov.*), the number of existing populations identified expanded significantly and/or were judged not to be under immediate threat of extinction; 2) Field examination revealed populations near or adjacent to the original locations, thus expanding the ranges of *A. menziesii*, *C. seriatum*, and *D. crispula* from their original sites; 3) The gypsophile *D. nevadensis* was not found, although two gypsum-rich regions in the upper Las Vegas Wash were explored for potential new populations;



Close up of two leaves from the moss, *Pseudocrossidium crinitum*, whose distinctive features include the rolling of the leaf margins and the reddish leaf hair point, both seen here

4) For *S. princeps*, one of two known populations was relocated, and additional populations may exist in the County; 5) Although the undescribed species of *Targionia* is relatively common in Southern Nevada, one population is highlighted in this report because it is the largest population known in the county and also the only site in the county of another rare liverwort that has been recommended for listing, *Mannia californica*; 6) In three cases (*Claopodium whippleanum*, *Pseudocrossidium crinitum*, and *Trichostomum sweetii*), the known distribution of populations was expanded but still known from just a handful of precariously small patches. Previously known from only a single patch, *C. whippleanum* is now known from two localities and several patches; nevertheless, these locations are subject to flooding and persistence is doubtful. Two populations of *P. crinitum* exist in Clark County, and one of these was significantly expanded by exploration. This species is female-only in the county and the second population is subject to human impacts. The single known population of *Trichostomum sweetii*, while re-found as a fragment, is considered highly vulnerable and follow-up censuses are needed; and 7) In two cases (*Distichium inclinatum* and *Grimmia americana*), the original historic population could not be relocated despite searches, with the latter of these two species being a global rarity. Searching for *D. inclinatum* in the Spring Mountains did not locate the species at Deer Creek; however, there are concerns about the taxonomic status of this species. *G. americana* remains one of the rarest plants in the world, and the project was unable to relocate the single Clark County population collected in the 1990s. This locality (Newberry Mountains) receives high impacts from human visitation.

Partners and/or Subcontractors

None

Agency Project Contact

Dr. Lloyd Stark, UNLV, (702) 895-3119, Lrs@unlv.edu

Funding Amount Awarded

\$30,340

Contract Term

01/20/2004 through 06/30/2006

LEAD AGENCY

U.S. Department of Agriculture-Animal, Plant, Health, Inspection Section-Wildlife Service, Nevada Animal Damage Control Program

Project Title

Assist in Development of Wildlife Damage Management for Threatened Endangered Species from Predation or Parasitism
2003-USDA-ADC-332
Information Gathering and Analysis

Project Description

Part A: One of the projects of the Nevada Animal Damage Control Program (NADCP) detects feral cat activity within Palmer's chipmunk habitat and initiates direct control activities. Cage traps humanely capture the cats. If the cats are deemed feral, they are euthanized and processed for disease monitoring at the trap site. Disease monitoring efforts apply to both target and non-target species.

Part B: The NADCP 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.



Feral cat

Project Status

Completed.

Partners and/or Subcontractors

The NADCP is a cooperative program primarily consisting of the U.S. Department of Agriculture (USDA) Animal and Plant Health, Inspection Service's Wildlife Services, and the Nevada Department of Agriculture, Division of Resource Protection, Predatory Animal and Rodent Committee.

Agency Project Contact

Mark Jensen, Nevada State Director, USDA-Wildlife Services-NADCP, (775) 784-5081



Raven

Funding Amount Awarded

\$91,418

Contract Term

01/06/2004 through 02/28/2006

LEAD AGENCY

Southern Nevada Environmental, Inc.

Project Title

Desert Tortoise Transfer and Holding Facility
and Desert Tortoise Translocation Program
2003-SNEI-336
Operations

Project Status

This project report was incorporated into the project 1007 report. See project 1007 for complete project report.

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LEAD AGENCY

Nevada Department of Agriculture

Project Title

Cooperative Weed Management Program Development
2003-CC-338
Planning

Project Description

This project provided central focus for development of a coordinated weed management strategy for the Clark County MSHCP. A Weeds Program Coordinator was hired by the NDA. This position provided a central clearing house function for all entities involved in weed management programs and projects, provided a central location for reporting known and suspected invasive weeds threats, and acted as a central referral service to the appropriate local weed management programs and experts. The project also provided coordination and leadership of the MSHCP's Weeds Working Group, and coordinated with this group and other weeds management experts to write a draft Weeds Management Plan for the MSHCP.

Project Status

Completed. The project produced a series of facilitated Weeds Working Group meetings, reports of those meetings and recommendations for action to the MSHCP Implementation and Monitoring Committee (IMC), weed issue alerts via email, the "New Beginnings" weeds newsletter, coordination of weeds issues, referrals to weeds experts, and the November 2005 draft Weeds Management Plan.

The Weeds Management Plan was created by the Weeds Working Group and other weeds experts. The plan includes: vision and mission statements to guide the MSHCP Weeds Program; descriptions of the Desired Future Condition of the habitat of MSHCP species and species of concern related to invasive weeds; weeds management program direction through goals, objectives and strategies; implementation strategies for weeds management projects; prioritizing/screening criteria for selection and implementation of MSHCP Conservation Actions through the MSHCP's Adaptive Management Program (AMP) and future MSHCP implementation and budget planning processes; mechanisms for internal monitoring of the accuracy and utility of the plan, and a system for incorporating changing external factors that may affect the contents/direction in the plan.

The plan described two distinct sets of implementation strategies. The first set contains strategies that will contribute toward accomplishing the goals and objectives identified in the MSHCP. The second set contains general and specific strategies that have been established to provide direction for project level activities throughout Clark County in conjunction with private property, roadside weeds management, situations requiring immediate attention, and weed-driven and site-driven weeds situations. In early 2006,

the Weed Program Coordinator also conducted project site visits and provided project status reports on several other MSHCP weed-related projects.

Partners and/or Subcontractors

BLM, Conservation District of Southern Nevada, Clark County DCP, Las Vegas Wash Coordinating Committee, Muddy River Regional Environmental Impact Alleviation Committee, NPS, NDF, USFWS, USFS, USDA, Natural Resources Conservation Service (NRCS), USGS, UNR-BRRC, and University of Nevada Cooperative Extension

Agency Project Contact

Dawn Rafferty, NDOA, Reno, NV (775) 688-1180

Funding Amount Awarded

\$126,500

Contract Term

01/22/2004 through 03/31/2006

LEAD AGENCY

U.S. Forest Service

Project Title

Spring Mountains Ecological Site Inventory Phase II
2003-BLM-344
2003-USFS-344A
Information Gathering and Analysis

Project Description

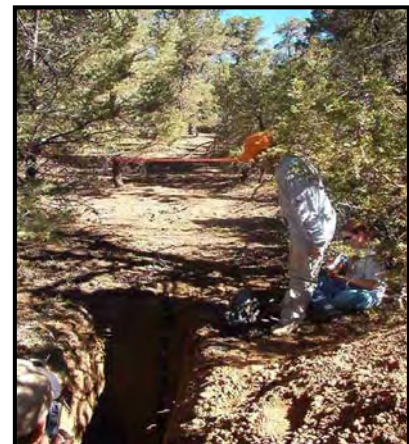
The purpose of the project was to complete a baseline ecological inventory of soils, vegetation, and springs in the Spring Mountains and Red Rock Canyon areas, using integrated methodology developed jointly by the USFS and BLM. The synthesized results provide baseline information to interpret ecological conditions, impacts of grazing and recreation, and the basis to improve habitat for MSHCP species across administrative boundaries. In addition, the information should enable BLM and USFS to set management objectives for ecosystem health, track trends over time, and foster cooperation and consistent conservation strategies for MSHCP species.



Water testing at Unnamed Spring #58

Project Status

In progress. This project completed the work started under interlocal 2003-BLM-344, which involved collecting soil, vegetation, and spring survey data in the Spring Mountains and Red Rock Canyon areas. The soil and vegetation data was integrated into the National Resource Conservation Service corporate database and a GIS map is available on the NRCS public website. Existing spring data and data from 65 newly surveyed springs was combined into a database and a GIS map of the springs was prepared. In addition, a GIS map of fire occurrences in the Spring Mountains and Red Rock Canyon areas was created. A corporate database that includes soil, spring, and vegetation data is available for use by both USFS and BLM. Data from this project was submitted to Clark County.



Pinyon/juniper/gamble oak – Charkiln
soils ecological type

Partners and/or Subcontractors

BLM, NRCS

Agency Project Contact

James C. Hurja, SMNRA, USFS, Las Vegas, NV, (702) 646-3628

Funding Amount Awarded

2003-BLM-344	\$885,170
2003-USFS-344A	\$88,500

Contract Term

2003-BLM-344	01/06/2004 through 02/28/2006, extended to 12/31/2006
2003-USFS-344A	08/15/2006 through 12/31/2007

LEAD AGENCY

Southern Nevada Water Authority

Project Title

Habitat Enhancement in the Las Vegas Wash
2003-SNWA-345
Implementation

Project Description

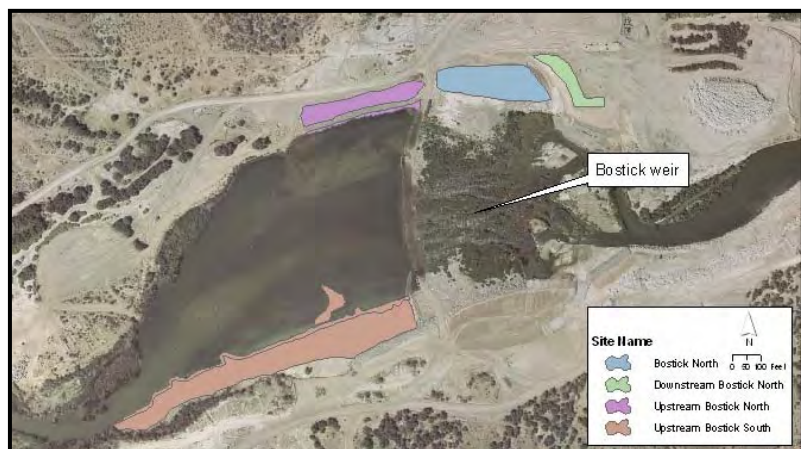
The primary purpose of this project involved hosting a community-wide planting event to restore a seven-acre site of emergent and riparian vegetation at the Las Vegas Wash (Wash). This project will help reduce stream bank erosion by armoring the channel with vegetation, increasing wildlife habitat, and increasing public awareness of the valuable resource. Generating public support for the ongoing restoration efforts in the Wash is a critical component of the project. Volunteers were recruited from a variety of community groups, including boy and girl scouts, environmental organizations, and senior clubs to assist with the planting efforts.



Upstream Bostick South Site after planting

Project Status

Completed. Approximately 100 volunteers helped revegetate the banks of the Wash on October 25, 2003. Monitoring data indicates the vegetation at the different Bostick weir planting sites is performing well. The upstream Bostick South site is much closer to the edge of the Wash than the other planting areas which may contribute to its higher diversity of species and vegetation cover than other sites monitored. Many of the species detected at this site are obligate wetland species. Species diversity in more riparian areas were primarily limited to the originally planted species including, creosote, fourwing saltbush, screwbean mesquite, honey mesquite, wolfberry, desert willow, Fremont cottonwood, willows, and catclaw acacia.



Re-vegetation site locations adjacent to the Bostick weir

Cover values for riparian sites indicate honey mesquite and creosote are performing well. Both of these species are common to upper terraces of southwestern riparian floodplains and are thriving in these areas along the Wash. Long-term growth of these species, particularly honey mesquite, will provide quality habitat for many wildlife species.

Partners and/or Subcontractors

Las Vegas Wash Coordination Committee, Mabel Hoggard Magnet School

Agency Project Contact

Keiba K. Crear, Senior Biologist, SNWA, (702) 822-3388

Funding Amount Awarded

\$73,500

Contract Term

07/02/2003 through 08/01/2005

LEAD AGENCY

Bureau of Land Management

Project Title

Development of a Designated Roads Network in the Northeast Desert Tortoise Desert Wildlife Management Areas
2003-BLM-347
Implementation

Project Description

The BLM hired a roads coordinator to oversee road designations for the Northeastern Recovery Unit of the federally listed desert tortoise in three ACECs. Roads were designated as either open and then properly signed, or as closed. The primary need for road designation in ACECs is to offset the loss of tortoise habitat in Southern Nevada from urbanization, proliferation of new roads and trails and other disturbances on public lands within the desert tortoise's occupied range. This project is identified as a top priority in the Desert Tortoise Recovery Plan and Las Vegas Resource Management Plan.



Off road tracks near Coyote Springs ACEC

Project Status

Completed. The BLM maintained a roads coordinator under contract throughout the biennium. The road inventory identified 1,162.71 miles of roads and trails in the following ACECs: Gold Butte Part A - 391.89 miles; Gold Butte Part B - 223.99 miles; Gold Butte Part C - 85.84 miles; Coyote Springs - 208.26 miles; and Mormon Mesa - 252.73 miles. A database of roads was compiled. The coordinator conducted 27 training sessions, 34 public meetings, events, and presentations, and also regularly attended Roads Working Groups meetings.



Four way intersection in Gold Butte ACEC

Partners and/or Subcontractors

MSHCP, UNR; interested public; the Native American community; and rural town boards

Agency Project Contact

Gayle Marrs-Smith, Botanist and Coordinator of the MSHCP for the BLM, Las Vegas field office, 4701 N. Torrey Pines Dr., Las Vegas, NV 89130, (702) 515-5156

Funding Amount Awarded

\$148,000

Contract Term

01/06/2004 through 02/28/2006, extended to 12/31/2006

LEAD AGENCY

Partners in Conservation

Project Title

Desert Conservation Week Pilot Program
2003-PIC-348
Planning

Project Description

This is an educational project for rural communities using the “respect, protect, and enjoy the desert” message. This project targets elementary school students and their families using facts and terms that residents of rural communities would accept and thus be receptive to. The goal of this project is to take the message to the rural schools, as well as personalize it, so students in northeast Clark County will internalize the message and subsequently want to “respect, protect, and enjoy THEIR desert.” PIC proposed to deliver this message using a series of components that would work together and reinforce that message.

Project Status

In progress. PIC expects to complete delivery of this project and its components to over 105 teachers and over 2,200 students in the four rural elementary schools of northeast Clark County: Virgin Valley, Bunkerville, Logandale, and Moapa. The project produced two supply boxes to supplement the activities in the teachers’ guide; one supply box for each valley. PIC implemented the Calendar Coloring Contest, selected winners, and produced four unique calendars featuring the winners; each school has their own unique calendar. Calendars were placed in each classroom, library, office, and joint-use rooms. Completing delivery of Mojave Max lessons to 300 students, with other presentations is scheduled after the first of the year.

Partners and/or Subcontractors

Clark County Desert Conservation Program; Clark County School District Elementary Schools (Virgin Valley, J. Bowler, Grant Bowler, Perkins); Red Rock Canyon Interpretative Association; BLM



Virgin Valley Elementary School student dresses up as a tortoise during a Mojave Max presentation to the entire first grade



Arranging pictures for the Calendar Coloring Contest

Agency Project Contact

Elise McAllister, Administrator, PIC, Moapa, NV, (702) 864-2464, (702) 864-2579,
(702) 219-2033, picorg@mvdsl.com

Funding Amount Awarded

\$20,500

Contract Term

09/28/2006 through 06/30/2008

LEAD AGENCY

U.S. Department of Agriculture-Agricultural Research Service, Bee Biology and Systematics Laboratory

Project Title

Pollinator Ecology
2003-USDA-ARS-349
Information Gathering and Analysis

Project Description

Studies on bees, the principal pollinators of flowering plants in the Mojave Desert, were conducted during the 2004 and 2005 flowering seasons to contribute toward three goals: 1) to determine the distribution and biological attributes of the 28 bees on the MSHCP evaluation and watch lists, toward the goal of developing predictive habitat models; 2) to assess the status of essential pollinator services on *Prosopis* (mesquite); and 3) to identify the bee pollinators of MSHCP listed plants. Samples of pollinators are collected using net collections and passive pan traps. Samples were taken throughout the county from March until October on a biweekly basis whenever bloom was present. Biweekly timed samples on individual mesquite trees were made at multiple sites. An all day sampling of mesquite trees was made to determine diurnal patterns of visitation.

Project Status

Completed. The project is complete and logged 676 person-days during the two field seasons, visiting 802 sites throughout the county. A summary of results follows:

Mesquite Pollinators. Mesquite, which is dependent on pollinators for reproductive success, is visited by a wide array of bees. Thirty-seven species were recorded visiting mesquite; 17 are entirely dependent, or “specialists”, on mesquite for nest provisions. Mesquite specialists differed greatly in their abundance and in the number of locations where they were present. The specialist fauna was dominated by three species of *Perdita* (*P. punctosignata sulphurea*, *P. luciae decora*, and *P. triangulifera*). They accounted for 64% of the total individuals. Four specialists were rare both in abundance and in the number of sites where they were encountered: *Perdita pallidipes*, *Perdita prosopidis*, *Perdita punctosignata flava*, *Perdita sonorensis*, and *Colletes aff. perileucus*. Mesquite patches varied significantly in richness and abundance. Individual trees within a patch also varied greatly in their attractiveness to pollinators. For example, one of the six trees in an all day study at Corn Creek Springs accounted for 86% of the recorded visitors from all six trees.

Pollinators of MSHCP Plants. During this biennium, the project sampled bee pollinators at 14 plant species that are on the MSHCP lists. Most are poorly visited. Low pollinator visitation rates may limit reproductive success as has been shown in an extensive study of more than 30 rare plants in the Intermountain Region conducted by the USDA-Agricultural Research Service (ARS) Bee Biology & Systematics Laboratory.

MSHCP Listed Bees. Studies of the bees were challenging due to the transient nature of adult activity. All species are solitary nesters with highly seasonal, short adult lives. Most collect pollen solely from one genus of plants and many have specialized requirements for nesting substrate. Species specializing on annuals are especially unpredictable and are absent in some years at localities where they are known to exist. The exceptional rainfall of 2005 was conducive to studies of MSHCP species; 17 of 21 evaluation species were studied documenting additional populations. Studies confirm that most evaluation species are rare. Two species remain known only from the unique original collection. One is widespread and could be considered for removal from the MSHCP list. The flat-faced cactus bee (*Lithurgus listrotus*), a rare endemic of the eastern Mojave Desert and one of the watch list species, was recorded from Clark County for the first time.

Sand Dunes and Vegetated Sands. Sandy habitats appear to be some of the richest bee environments in Clark County. A number of species are restricted to dunes because of nesting specialization or because they specialize on sand restricted host plants. These sand communities can be negatively impacted by vehicular activity. Systematic sampling of dunes is needed to evaluate sites of particular value.

Partners and/or Subcontractors

Southern Nevada Rare Plant Group, MSHCP Low Elevation Plant Group

Agency Project Contact

Terry Griswold, Research Entomologist, USDA-ARS Bee Biology and Systematics Laboratory, Logan, UT (435) 797-2526

Funding Amount Awarded

\$208,611

Contract Term

01/06/2004 through 03/31/2006

LEAD AGENCY

Bureau of Land Management
National Park Service

Project Title

Virgin River Conservation Management Assessment
2003-BLM-350
2003-ENTRIX-350A
2003-NPS-350C
Planning

Project Description

These projects contributed to the development of a Conservation Management Assessment for the Virgin River and Virgin River Conservation Management Plan. While developing the CMS and Virgin River Conservation Management Plan, the project required substantial coordination among the diverse groups and stakeholders that meet on Virgin River issues to synthesize management objectives, conservation strategies, and planning efforts.

Project Status

In progress. The Conservation Management Assessment is completed. ENTRIX, Inc., an environmental and natural resource management consulting firm, collected and analyzed available data to determine the existing conditions, conducted background scoping for species and species threats, developed a web-based database for organizing and housing species data, identified and evaluated information gaps, and prepared conservation objectives and draft conservation actions. Work outside of these projects to complete the Conservation Management Assessment includes finalizing the conservation actions and developing an implementation strategy incorporating a prioritization scheme, assessment of funding and staffing issues, and identifying implementation responsibilities and a schedule for implementation.

Partners and/or Subcontractors

NPS, SNWA, Virgin Valley Water Authority, Virgin River Working Group, Bureau of Reclamation, Nevada Division of Wildlife, Virgin River Recovery Implementation Team, Clark County, State of Arizona, Arizona BLM Strip Office, and assorted non-governmental organizations

Agency Project Contact

Gayle Marrs-Smith, Botanist and Coordinator of the MSHCP for the BLM, Las Vegas field office, 4701 N. Torrey Pines Dr., Las Vegas, NV 89130, (702) 515 5156

Funding Amount Awarded

2003-BLM-350	\$213,150
2003-ENTRIX-350A	\$1,229,600
2003-NPS-350C	\$87,000

Contract Term

2003-BLM-350	01/06/2004 through 02/28/2006
2003-ENTRIX-350A	04/04/2006 through 06/30/2008
2003-NPS-350C	01/06/2004 through 02/28/2006

LEAD AGENCY

Outside Las Vegas Foundation

Project Title

Virgin River Conservation Partnership Facilitation
2003-OLVF-350B
2003-OLVF-350D
Planning

Project Description

The Virgin River Conservation Partnership (VRCP) is a collaborative group of public and private stakeholders formed to coordinate conservation and restoration activities throughout the Virgin River watershed. This project consists of monthly meetings at various partner agencies throughout Clark County, with meetings in the Lower Virgin River Corridor (Mesquite area), a minimum of twice a year, featuring field trips along the Virgin River. The Clark County DCP on behalf of Clark County, NPS, USFWS, City of Mesquite and the SNWA funded a contracted position to coordinate and facilitate the meetings and activities of the VRCP through June 2008.

Project Status

In progress. The VRCP met as a group 18 times and included an independent neutral facilitator. Over the course of this biennium, meeting attendance increased roughly 25%.

Representatives from the participants indicated principal benefits for them included the opportunity to meet on a scheduled basis, share information, and coordinate common efforts in the Virgin River corridor. On August 17, 2006, the VRCP held its regular meeting jointly with the Upper Virgin River Collaborative. The meeting was convened by the U.S. Army Corps of Engineers, which secured federal funding for

a Virgin River Watershed Study, more than 70 individuals met. Attendees were from agencies representing Nevada, Utah, Arizona and other stakeholders along the Virgin River corridor. Key outputs of the VRCP group during the contract period included discussion, and design, production and distribution of a public education brochure. The group also oversaw the development and posting of a VRCP webpage on the ENTRIX, Inc. VRHCP website (an internal site to date) located at <http://dev.fargeo.com/vrhcp>.



Virgin River

Partners and/or Subcontractors

City, town, counties, and regions: Bunkerville Town Advisory Board, City of Mesquite Nevada, Las Vegas – Public Lands Institute, Virgin Valley Water District; and Muddy River Regional Environmental Impact Alleviation Committee. Clark County Department

of Air Quality and Environmental Management, Clark County Regional Flood Control District, and Clark County Rural Town Services

States and associations: Arizona Department of Environmental Quality, Arizona Department of Water Resources, Arizona Game and Fish; Nevada Department of Conservation and Natural Resources, NDOW, Nevada Division of Environmental Protection, University of Nevada, SNWA, Southern Nevada Interpretive Association, The Conservation Fund, Trust for Public Land, Colorado River Commission of Nevada, and Old Spanish Trail Association

Consultants: ROBCYN, LLC, a Nevada consulting company, and ENTRIX, Inc. environmental consultants from Walnut Creek, CA

Federal agencies: NPS, LMNRA; NPS, Water Resources Division; U.S. Army Corp of Engineers, Sacramento District; U.S. BLM, Arizona Strip Field Office; U.S. BLM, Las Vegas Field Office; U.S. Bureau of Reclamation, Lower Colorado Regional Field Office; USDA, Natural Resource Conservation Service; USDA, Wildlife Services; USFWS; and USGS

Agency Project Contact

Alan O'Neill, Executive Director, Outside Las Vegas Foundation, Las Vegas, NV, (702) 461-6162; Deborah Campbell, VRCP Facilitator Coordinator, Deborah Campbell and Associates, Henderson, NV, (702) 845-4393

Funding Amount Awarded

2003-OLVF-350B \$101,000
2003-OLVF-350D \$90,000

Contract Term

2003-OLVF-350B 04/06/2007 through 06/30/2008
2003-OLVF-350D 04/01/2005 through 03/31/2007

LEAD AGENCY

Bureau of Land Management

Project Title

Geographic Information Systems Support
2003-BLM-353
Operations

Project Description

The BLM has contracted a GIS technician and a GIS analyst for GIS support for all BLM projects under contract to the Clark County MSHCP. The technician and analyst will perform general GIS functions to include documentation of disturbances, track restoration, surveys of rare species/habitats, analysis of the impact of human use on sensitive resources, map-making to accomplish other resource work. Moreover, the contractors create and support a number of additional GIS themes, such as roads, sensitive habitats, and sensitive species not yet available for data sharing due to lack of coverage editing, lack of metadata, inconsistent data collection for the same theme, and lack of data standards.

Project Status

Completed. This project supported all GIS functions for the following BLM projects; Ecological Site Inventory, 2003-BLM-344, Road Designation, 2003-BLM-347, Monitoring Vegetation Plots, 2003-BLM-361, Virgin River Conservation Management Strategy, 2003-BLM-350 and Mesquite/Acacia Habitat Conservation Management Strategy, 2003-BLM-367

Partners and/or Subcontractors

A GIS technician and an analyst, Clark County, Federal Land Management Agencies, UNR, and PIC

Agency Project Contact

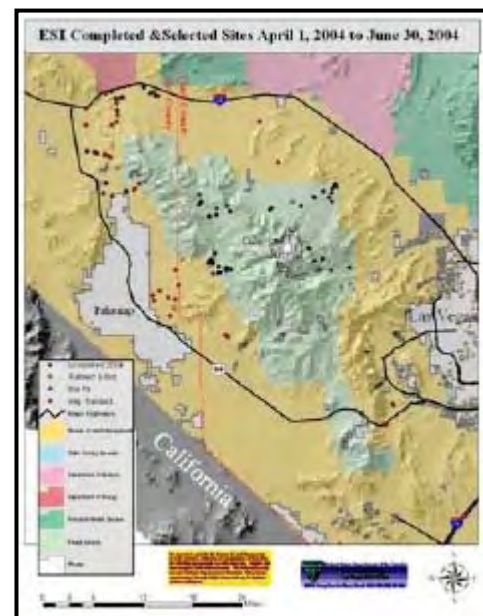
Carolyn Ronning, BLM, 4701 North Torrey Pines Dr.,
Las Vegas, NV 89130, (702) 515-5143

Funding Amount Awarded

\$390,600

Contract Term

01/06/2004 through 02/28/2006



Map of ESI Completed and Selected Sites
for 2004

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LEAD AGENCY

Bureau of Land Management

Project Title

Evaluating the Impact of Cattle Grazing on Vegetation and Vegetative Recovery Following Removal of Cattle Grazing
2003-BLM-361
Information Gathering and Analysis

Project Description

The purpose of this project was to resample vegetation trend plots in all areas within critical desert tortoise habitat where grazing has been removed. Data collected during trend analysis includes frequency and cover, and can be used to determine species diversity. In addition, to better quantify the impact of grazing on vegetation, data collected during a research project cooperatively sponsored by the BLM and the USFWS investigating the effects of cattle grazing on desert tortoise habitat, will be compiled, analyzed, and summarized.



Field crew surveys the Joshua Park Reservoir plot

Project Status

In progress. Trend data collection was completed on May 4, 2005. The data has been entered into a database and includes all frequency and cover data, trend photos, and grazing history for the entire range of trend studies within critical desert tortoise habitat dating back to 1982. A list of plants by species has been compiled. USGS-Biological Research Division (BRD) provided guidance for data summaries and analysis methods. Data analysis started for all sites including historic and current year data. Although the contract term ended, completion of the data analysis is pending further guidance from USGS-BRD. A GIS-based interactive map was created to facilitate visual comparison between photo points over time. Preparation of the scientific report is underway.



Field crew surveys the Gold Butte #1 plot

Partners and/or Subcontractors

Dr. Kenneth Nussear, USGS-BRD, Great Basin Institute

Agency Project Contact

Carolyn Ronning, Wildlife Biologist and Coordinator of the MSHCP, BLM, Las Vegas field office, (702) 515-5143

Funding Amount Awarded

\$160,200

Contract Term

01/06/2004 through 02/28/2006, extended through 06/30/2006

LEAD AGENCY

National Park Service, Lake Mead National Recreation Area

Project Title

Vegetation Monitoring Program: Rare Plants, Plant Poaching, and Weed Management Programs
2003-NPS-363
Information Gathering and Analysis

Project Description

This monitoring and management project consisted of four program elements: rare plant and habitat monitoring, weed sentry program, habitat protection, planning and program administration. In general, actions associated with this project included: providing information on the locations, status, abundance, trends, and potential threats to rare plants and their habitats within the LMNRA; the development and implementation of an inventory and monitoring program for emergent weeds on prioritized federal lands within Clark County; appropriate management actions to protect habitats; and active agency participation in a wide variety of planning and compliance activities aimed at meeting the objectives and goals of the Clark County MSHCP.



Three corner milk vetch partly covered in drifting sand

Project Status

Completed. Reports were submitted on monitoring and management of Las Vegas bearpoppy (*Arctomecon californica*), sticky buckwheat (*Eriogonum viscidulum*), threecorner milk vetch (*Astragalus geyeri* var. *triquetrus*), ringstem (*Anulocaulis leiosolenus* var. *leiosolenus*) and other select plants of concern; the weed sentry program and the use of interns within weed sentry, and an affiliated project on Sahara mustard (*Brassica tournefortii*) control efforts.

Partners and/or Subcontractors

Public Lands Institute, UNLV, BLM, USFS, USFWS

Agency Project Contact

Alice C. Newton, Resource Management, NPS, LMNRA, (702) 293-8977, alice_corrine_newton@nps.gov

Funding Amount Awarded

\$611,270

Contract Term

01/06/2004 through 02/28/2006

LEAD AGENCY

Bureau of Land Management

Project Title

Integrated Mesquite-Acacia Conservation
Management Strategy Plan
2003-BLM-367
Planning

Project Description

This project required developing an integrated management plan for mesquite/acacia woodlands for multiple agencies including BLM, NPS and USFWS – Desert Refuge lands. Information on mesquite-acacia distribution was incorporated. The project developed criteria for evaluating acacia habitat and identified acacia habitat using aerial photography and satellite imagery including Gap Analysis Program data. The project also verified acacia habitat on BLM and NPS lands using GPS and criteria developed for evaluation, and expanded BLM’s Mesquite Management Plan to include mesquite and acacia habitat distribution on BLM, NPS, and USFWS – Desert Refuge lands.



Mesquite trees

Project Status

Completed. Criteria for acacia surveys and a map of potential acacia woodlands within Clark County were developed in conjunction with BLM, NPS, and USFWS Desert Refuges. The potential acacia woodlands areas were ground verified and a draft composite map of mesquite-acacia habitat was produced. An integrated mesquite-acacia conservation strategy plan for all key mesquite-acacia areas on federal lands was also completed. The plan describes and prioritizes actions necessary to maintain and improve mesquite acacia habitat, research needs, and monitoring within the context of adaptive management.



Acacia habitat

Partners and/or Subcontractors

National Park Service, U.S. Fish and Wildlife Service Desert Refuge Complex

Agency Project Contact

Gayle Marrs-Smith, Botanist and Coordinator of the MSHCP for the BLM, Las Vegas field office, 4701 N. Torrey Pines Dr., Las Vegas, NV 89130, (702) 515-5156

Funding Amount Awarded

\$128,100

Contract Term

01/06/2004 through 02/20/2006, extended through 03/31/2006

LEAD AGENCY

University of Nevada, Reno

Project Title

Red Rocks to the Summit
2003-UNR-369
Information Gathering and Analysis

Project Description

The original intent of the Red Rocks to the Summit project was to assess the roles of various sources of disturbance as they affect biotic diversity at springs and their wetland and riparian ecological communities in the Spring Mountains. The focal disturbance of concern was that caused by feral horses and other ungulates. The primary tools in assessing disturbance were to collect before and after measurements of vegetation conditions, and plant and animal species richness at springs, where exclosure fencing was to be installed or removed. Changes in the conditions of various elements of biodiversity would be measured across the period of management actions, then beyond. Because of changes in previously planned management actions by federal land managers, the pre-action/post-action data collection scheme was altered; and replaced with an intensive assessment of multiple plant and animal taxa in an experimental design that considered past and current disturbance stressors, including feral grazers.

Project Status

Completed. The project mined historical data from the mountain range in reports submitted to the land management agencies. The project concurrently employed a multi-disciplinary team which sampled vegetation (including plant species composition, structure, and other variables), aquatic invertebrates, butterflies, and measured disturbances at 32 springs and spring-courses (or subsets of them). The resulting data were analyzed for patterns and deterministic relations among physical characteristics of springs, their biotic attributes, and anthropogenically generated disturbances. Results pertinent to the prioritization of spring resources were presented to USFS resource staff, BLM, and USFWS. Many of the management-informing findings from this study were published as scientific journal articles.

Partners and/or Subcontractors

UNR; Desert Research Institute; USGS; Nevada Natural History Museum and Historical Society; Mills College; and Stanford University

Agency Project Contact

Dr. Dennis Murphy, Research Professor, BRRC, UNR, (775) 784-1303,
ddmurphy@biodiversity.unr.edu

Funding Amount Awarded

\$447,600

Contract Term

02/17/2004 through 03/31/2006

LEAD AGENCY

Clark County

Project Title

Public Information and Education Program Development
2005-CC-377
2005-BERT-377A
2005-RRCIA-377B
Planning

Project Description

This project provided further development of the Mojave Max Environmental Education Program. The volunteer training program (training volunteers in the Mojave Max lesson, for delivery to classrooms), was expanded. The Mojave Max teacher's education manual was revised and enhanced. The assembly program was improved, the Mojave Max website was redesigned, and the annual winner's field trip was administered.



Mojave Max assembly

Project Status

Completed. Through partnerships with the Clark County School District and the BLM, and contracts with the Red Rock Canyon Interpretive Association, more than 20,000 Clark County students were reached through the Mojave Max Education Program. Six environmental education videos were produced with the following titles: 1) The Life of a Desert Tortoise, 2) So You Want to Adopt a Desert Tortoise, 3) Ewwww....a Reptile!, 4) OHV Travel in the Desert, 5) Desert Sense and Sensitivity, and 6) Preserving the Past.

Partners and/or Subcontractors

BLM, Red Rock Canyon Interpretive Association,
Clark County School District

Agency Project Contact

Christina Gibson, 500 S. Grand Central Pky.,
Las Vegas NV 89155-5210,
(702) 455-2860, cng@co.clark.nv.us



Winner's field trip and awarding of prizes, 2007

Funding Amount Awarded

2005-CC-377	\$260,000
2005-BERT-377A	\$100,000
2005-RRCIA-377B	\$100,000

Contract Term

2005-CC-377	Clark County project effective dates 07/01/2003 through 06/30/2007 (internal project/no contract term)
2005-BERT-377A	12/20/2005 through 12/31/2006
2005-RRCIA-377B	01/01/2006 through 12/31/2006

LEAD AGENCY

The Shipley Group

Project Title

Desert Wildlife Management Areas Conservation
Management Strategies
2003-SHIPLEY-380A
Planning

Project Status

This project report was incorporated into the project 548A report. See project 548A for complete project report.

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LEAD AGENCY

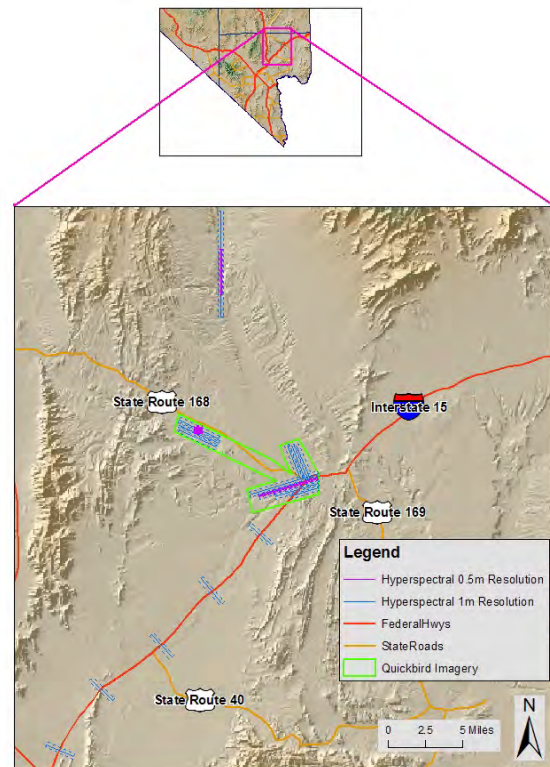
University of Nevada, Reno

Project Title

Ecosystem Indicators
2003-UNR-BRRC-387
Information Gathering and Analysis

Project Description

The objective of this project was to explore remote sensing methods and tools for the monitoring of native and non-native vegetation species as indicators of ecosystem health. Previous phases of this research centered on the identification of ecosystem indicators using selected members of the biota as indicators. This method was prohibitively expensive when used to monitor ecosystem health. As a result, a new approach was proposed—the use of remote sensing to monitor ecosystem health. After review of remote sensing platforms, it was determined that a high spatial and hyperspectral remote sensing imagery, SpecTIRs HyperSpecTIR HST platform, would be required to identify and map vegetation at the species level. The identification of individual plant species in arid environments is complicated, among other things, by large soil background signatures, plants that are adapted to hot dry climates (i.e. reduced leaf area, sun tracking, increased albedo, sparse cover, etc.), the extremely short growing season of most vegetation species, and a short time window for image acquisition. An area covering approximately 55 sq km (21.24 sq. mi.) was flown with remote sensing equipment in the spring of 2005 at a total cost of \$29,000.



Hyperspectral and Quickbird Imagery Acquisition Areas

Project Status

Completed. Hand held spectrometer spectral signatures for salt cedar, honey mesquite, catclaw, desert willow, tall white top (*Lepidium latifolium*), mistletoe, dry Sahara mustard (*Brassica tournefortii*) and Russian knapweed (all weed species or indicators of some aspect of ecological status) were obtained simultaneously to SpecTIR image acquisition. Due to time constraints and image processing requirements, a subset of the total area was selected for preliminary analysis and classification was limited to salt cedar and honey mesquite. The methods, tools, and analysis techniques developed

during this research will be applied in the future for analysis of the remaining area for these two species and/or for identification of other species.

Partners and/or Subcontractors

BLM, USFWS, and NPS

Agency Project Contact

Dr. Jill Heaton, Assistant Professor, UNR (775) 784-8056; Dr. C. Richard Tracy, Professor, UNR, (775) 784-4565; Dr. Ron Marlow, Assistant Research Professor, UNR, (702) 493-0754

Funding Amount Awarded

\$582,100

Contract Term

02/17/2004 through 03/01/2006

LEAD AGENCY

U.S. Forest Service

Project Title

Bat Inventories of the Spring Mountains
2003-USFS-388
Information Gathering and Analysis

Project Description

The purpose of this project was to conduct inventories to determine diversity and habitat use of bats within the SMNRA. The objective of the project was to gain insight on the habitat use by bat species of concern and the implications of forest management on these species.

Project Status

Completed. In partnership with bat experts, short-term and long-term bats echolocation sites were deployed during 2004 and 2005. These inventories provided a tool to determine the distribution of up to 13 rare or sensitive species of bats, which provided guidance in project planning to minimize impacts to bats.

A total of 16 different bat species were documented during the project. Six of these species have state threatened, sensitive, or protected status and an additional four species are listed as Federal Species of Special Concern. Four of the state-listed species are also listed as Federal Species of Special Concern. At the short-term sites, five sites had three or less species, 10 had five to seven species, and five had eight to 10 species. The long-term sites documented between 13 and 16 species.

Partners and/or Subcontractors

Dr. Michael O'Farrell, Private Consultant, Las Vegas, NV

Agency Project Contact

Amy Nichols, Natural Resource Officer, SMNRA, Las Vegas, NV, (702) 515-5421,
anichols@fs.fed.us

Funding Amount Awarded

\$44,000

Contract Term

03/16/2004 through 12/31/2005

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LEAD AGENCY

U.S. Forest Service

Project Title

All Bird Monitoring Program in Clark County, Nevada
2003-USFS-390
Information Gathering and Analysis

Project Description

The long-term objective of the All Bird Monitoring Program was to provide a scientifically sound database for evaluating status and trends in bird populations for each of Clark County's major habitats. The program provided data for analyses at different spatial scales, including state-wide assessments, habitat-wide assessments, as well as comparisons of specific project sites with similar sites in the rest of the state.



A Great Basin Bird Observatory volunteer conducts bird surveys

Project Status

Completed. The work was conducted from 2002 through 2005 during the main breeding season of small land birds, using 109 transects, surveyed repeatedly. A total of 172 species were detected in Clark County during the surveys; of these, 11 species were assumed to be non-breeders in Clark County based on Nevada Breeding Bird Atlas data, resulting in 161 species recorded as possible breeders in the study area, which represents almost two-thirds of the species richness of breeding birds in the state. A total of 100 species were detected in the Spring Mountains, with wooded habitats such as montane riparian areas supporting the greatest species richness. For Clark County as a whole, species richness was highest in lowland riparian area, and all land birds covered or under evaluation by the Clark County MSHCP were detected, with the exception of the yellow-billed cuckoo.

Partners and/or Subcontractors

Great Basin Bird Observatory; NDOW; BLM; USFWS; NPS; Bureau of Reclamation; SNWA; UNLV; UNR; NNHP; Nevada Partners in Flight; Nellis Air Force Range

Agency Project Contact

Amy Nichols, Natural Resource Officer, SMNRA,
Las Vegas, NV, (702) 515-5421, anichols@fs.fed.us



A young flammulated owl encountered during a survey

Funding Amount Awarded

\$88,300

Contract Term

03/16/2004 through 12/31/2005

LEAD AGENCY

U.S. Forest Service

Project Title

Northern Goshawk Survey of the Spring Mountains
and other Suitable Nesting Areas in Clark County
2003-USFS-392
Information Gathering and Analysis

Project Description

This project detected and mapped northern goshawk nest sites within the SMNRA. The project also provided data allowing better management of forest activities within the goshawk's breeding territories.

Project Status

Completed. Over 4,500 acres of potentially suitable goshawk habitat were surveyed during 2004 and 2005. This represented the first comprehensive work on the species in the Spring Mountains. During this time, 11 individuals in five active territories were located. Two of the five active territories were confirmed active breeding territories, both of which produced young in 2005. One of the nesting territories was previously unknown.

Partners and/or Subcontractors

Great Basin Institute; UNR; Dr. Michael Morrison, Texas A&M University,
College Station, TX

Agency Project Contact

Amy Nichols, Natural Resource Officer, SMNRA, Las Vegas, NV, (702) 515-5421,
anichols@fs.fed.us

Funding Amount Awarded

\$40,080

Contract Term

03/16/2004 through 02/01/2006

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LEAD AGENCY

U.S. Forest Service, Spring Mountains National Recreation Area

Project Title

Butterfly Monitoring in the Spring Mountains
2003-USFS-394
Information Gathering and Analysis

Project Description

The intent of this study was to document potential changes in the behavior and distribution of Carole's silverspot (*Speyeria carolae*) in response to seasonal progression, resource availability, and use. Known resources include nectar, minerals, and larval host plants. Findings from this project are being used as a tool to guide management decisions having a potential to affect rare and endemic butterflies. In addition, information was gathered regarding habitat requirements of this species.



Carole's silverspot butterfly on a Clokey thistle

Project Status

Completed. The study answered a number of questions regarding the phenology, distribution, resource use, and peak flights of this species. Understanding more about the resource needs and distributions of this species is already helping with management decisions and will continue to do so in the future.

Partners and/or Subcontractors

Bruce Boyd, butterfly researcher

Agency Project Contact

Amy Nichols, Natural Resource Officer, SMNRA,
Las Vegas, NV, (702) 515-5421, anichols@fs.fed.us

Funding Amount Awarded

\$11,000

Contract Term

03/16/2004 through 12/31/2005



The Charleston violet is a larval host plant of the Carole's silverspot butterfly

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LEAD AGENCY

The Nature Conservancy

Project Title

Muddy River Interim Management Plan Development
and Partner Coordination
2003-TNC-437
Operations

Project Description

This project continued acquisition efforts in coordination with public and private conservation partners and planned for cooperative management and restoration of key riparian acquisitions. TNC and partners continued work begun during the 2003-2005 biennium to implement conservation activities on the Muddy River in support of the Clark County DCP. Nevada's Muddy River has the highest concentration of at-risk riparian and aquatic species in Clark County. The upper 15 miles of the Muddy River watershed is primarily in private and tribal ownership. Recent and ongoing acquisitions allow the transfer of small but strategic, formerly private acres, into public ownership. Property management is needed for these acquisitions, which also offer the opportunity to enhance or restore habitat values.



View of Muddy River, looking north across S. Perkins property

Project Status

Completed. In the last two years, 110 acres, including nearly two miles of riparian corridor, were afforded permanent protection through acquisition. In late 2003, the S. Perkins Ranch was acquired by TNC on behalf of the Clark County DCP, and nominated for acquisition under the SNPLMA. The Henrie property was acquired by TNC in 2004 on behalf of the Clark County DCP and also nominated for acquisition through the SNPLMA. TNC has contacted other property owners along the Muddy River to explore property protection options. TNC continues to participate in discussions with the coalition of parties



View east of the S. Perkins property pond

interested in the Muddy River to identify acquisition and management priorities, including the Muddy River Working Group, Muddy River Recovery Implementation Team, and the stakeholders identified in the communications plan.

Property management activities in this biennium included sale and removal of nursery stock from the Alamo property, building management, and irrigation equipment maintenance. TNC also worked toward the resolution of boundary line disputes with neighboring properties.

The final draft Preliminary Management Plan (PMP) for the Upper Muddy River was completed in March 2005. The PMP provides short-term management direction for upper Muddy River parcels acquired under the DCP, in anticipation of longer term management in public ownership consistent with the BLM, Las Vegas Resource Management Plan, the Clark County MSHCP, the Recovery Plan for the Rare Aquatic Species of the Muddy River Ecosystem, and the Desert National Wildlife Refuge Complex's Comprehensive Conservation Plan document. The PMP integrates biological, geological, cultural, and recreation management actions.

The Communications Plan for Muddy River activities was completed in March 2004. This plan describes objectives and a process for facilitating and enhancing communications among the various public and private partners involved in conservation activities on the upper Muddy River.

Partners and/or Subcontractors

Clark County DCP and its Muddy River Working Group, BLM, USFWS, USGS, NDOW, Muddy River Regional Environmental Impact Alleviation Committee, PIC, and The Conservation Fund

Agency Project Contact

Janet Bair, Director of Conservation Programs TNC Reno Field office, Reno, NV, (775) 322-4990

Funding Amount Awarded

\$177,147

Contract Term

01/06/2004 through 02/28/2006, extended to 12/31/2006

LEAD AGENCY

Clark County

Project Title

Adaptive Management Program: Coordination, Science Advice, and Effectiveness Monitoring Strategy
2003-CC-439
2005-UNR-BRRC-321
2005-USGS-1010
Operations

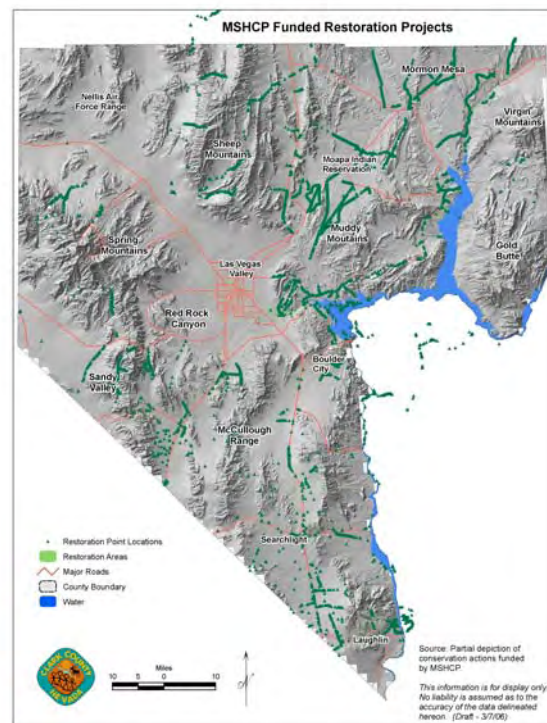
Project Description

This project fulfills MSHCP requirements to develop and implement an AMP as described in Sections 2.1.8.1 and 2.8.2.2 of the MSHCP.

Project Status

In progress. In the 2005-2007 biennium, the AMP chartered and seated the Adaptive Management Science Team (AMST), followed up on the status of technical conditions for funding of 2005-2007 biennium projects, prepared a systems dynamic model of the MSHCP, produced the 2006 Adaptive Management Report and received a peer review of that report, provided science advice to the DCP, maintained an MSHCP implementation project database, developed a prototype data collection and storage system for law enforcement projects, and developed an online species information database. The program completed analyses described in the MSHCP documents including: habitat loss by ecosystem, land use trends, species status and ecosystem health, and MSHCP implementation and effectiveness. The results of these analyses were reported in the 2006 Adaptive Management Report.

To accomplish the above, the AMP project funded two staff persons and several subcontracts. Staff positions funded by this project are the Adaptive Management Coordinator and Senior GIS Specialist. The two staff members coordinated the program, gathered and organized information from the DCP and partners for use in adaptive management analyses, performed several of those analyses, managed subcontracts, and provided technical assistance to the DCP. Subcontracts funded by this project



Map of several MSHCP funded restoration projects from 2006 Adaptive Management Report

included the Science Advisor Team (UNR-BRRC), AMST members (USGS and SWCA Environmental Consultants) AMST Modeler (Facilitated Systems), and several peer reviewers of proposals and the 2006 Adaptive Management Report.

Products of this project produced during the 2005-2007 biennium included: 2006 Adaptive Management Report; Final Report, 2005-UNR-BRRC-321, Science Advisory Team; Restoration Projects Effectiveness Report, 2005-USGS-1010, Adaptive Management Science Team - Medica; Final Report, Facilitated Systems project; System Dynamics Model of the MSHCP, Facilitated Systems project; Adaptive Management Science Team Charter; DCP geodatabase of MSHCP datasets; and review of 2005-2007 amended proposal responses to technical conditions for funding, SWCA Environmental Consultants.

Work is required to further develop the AMP, to develop and populate the database of data produced by MSHCP projects, and to address technical conditions for funding the 2005-2007 biennium continuing projects.

Partners and/or Subcontractors

UNR-BRRC; USGS; SWCA Environmental Consultants, Facilitated Systems, U.S. Forest Survey-Rocky Mountain Research Station, USFWS

Agency Project Contact

Sue Wainscott, Adaptive Management Coordinator, Desert Conservation Program, Las Vegas, NV, (702) 455-3849, swainsco@co.clark.nv.us

Funding Amount Awarded

2003-CC-439	\$1,593,015
2005-UNR-BRRC-321	\$925,355
2005-USGS-1010	\$45,000
SWCA	\$40,000
Facilitated Systems	\$23,560

Contract Term

2003-CC-439	Clark County project effective dates 07/01/2003 through 06/30/2007 (internal project/no contract term)
2005-UNR-BRRC-321	02/17/2004 through 03/31/2006
2005-USGS-1010	10/12/2004 through 06/30/2007
SWCA	06/01/2004 through 06/30/2006
Facilitated Systems	10/19/2005 through 06/30/2006

LEAD AGENCY

U.S. Forest Service Spring Mountains National Recreation Area

Project Title

Bristlecone Habitat Protection Project
2005-USFS-SMNRA-490
Implementation

Project Description

The primary goal for the Bristlecone Habitat Protection project was to protect the sensitive habitat near the Bristlecone Trail and Las Vegas Ski and Snowboard Resort, where recreation use is high. During the 2005 through 2007 period, this was accomplished by constructing a total of 1100 meters of fence along both sides of the Bristlecone trail and west of the Bristlecone Trailhead near the Ski Area entrance to help manage recreation use and keep visitors on the trail. Trails created by users were restored, interpretive signage about the project and its purpose were designed and placed along the trail to provide information. The following five MSHCP covered species and their habitats benefited from this project: *Astragalus oophorus* var. *clokeyanus* (Clokey egg vetch), *Townsendia jonesii* var. *tumulosa* (Charleston ground daisy), *Arenaria kingii* ssp. *rosea* (rosy king sandwort), *Pedicularis semibarbata* var. *charlestonensis* (Charleston pinewood lousewort), and *Icaricia shasta charlestonensis* (Mt. Charleston blue butterfly).



Fence installation in progress

Project Status

In progress. Protecting resources and reducing disturbance by the project itself, were two priority objectives. The project followed the National Environmental Policy Act (NEPA) process. Cultural and botanical surveys were conducted in 2005, 2006, and 2007 to provide the needed information for NEPA and were completed in May of 2007. Field review of the project area and planning to determine fence location was initiated in the fall of 2006. Surveys as well as field review determined that 1100 meters of fence were needed to protect the sensitive habitat. Much of the fence had to be placed in bedrock, which required a rock drill to place posts. The rock drill was capable of drilling a three inch diameter hole. In an effort to reduce resource damage by only drilling one hole, metal pipe, less than three inches in diameter, was used for posts, then pipe rails were run between the posts. Using larger diameter posts of any material type would have required drilling five to six holes close together with the rock drill and then using a jackhammer to open up the area large enough to fit a post. This would have increased

the trampling around the hole by workers five to seven times and increased the surface area disturbance ultimately removing more rare plants. By using the pipe fence, only one hole was drilled, reducing the amount of disturbance in the area by the workers and allowing posts to be set in between sensitive plants. Because of the difficulty of placing the posts in bedrock and the number of sensitive plants close to the project area, it was important to use a fence that would require minimal maintenance in the future. The powder coated pipe fence is estimated to be maintenance free for up to 50 to 80 years.

Fence construction began in June of 2007 and was completed within the month to help manage recreation use. Restoration of over 800 meters of trails was completed through the use of volunteers and the Nevada Conservation Corporation. Three interpretive signs were placed along the trail.

The area will be monitored in following years to help determine the effectiveness of the project. A final project report will be submitted to the Clark County DCP.

Partners and/or Subcontractors

USFWS, Nevada Conservation Corp Volunteers

Agency Project Contact

Amy Nichols, 4701 North Torrey Pines, Las Vegas, NV 89130, (702) 515-5421, anichols@fs.fed.us

Funding Amount Awarded

\$83,780

Contract Term

07/05/2005 through 10/31/2007

LEAD AGENCY

National Park Service, Lake Mead National Recreation Area

Project Title

Resource Protection and Law Enforcement
at the Lake Mead NRA
2003-NPS-233
2005-NPS-495
Implementation

Project Description

Lake Mead Rangers performed Law Enforcement (LE) and resource protection activities within their jurisdiction in Clark County, Nevada. Patrols focused on areas of significant tortoise habitat, desert wildlife management areas, and lands designated as intensively managed areas (IMAs). The purpose of these patrol efforts was to educate the public, detect illegal activities, investigate crimes on public lands and provide a safe experience for the visiting public. Rangers also took proactive steps to curb and deter further resource damage through signing, barrier construction, and focused multi-ranger patrols.

Thousands of visitors were contacted in backcountry areas during this time period and are now more aware of issues regarding protection of the fragile desert landscape and species that inhabit it. Through the application of these funds there was an increased LE presence in areas that may not have seen regular ranger patrols. Their presence serves as a major deterrent to illegal activities and helps the public identify with the lands they are using for their recreational pursuits.



LE Ranger with desert tortoise

Project Status

Completed. Two permanent, full-time LE Ranger positions were funded. The Rangers were hired, trained, equipped and then they patrolled the LMNRA DWMA and IMAs during this contract period. The Rangers conducted at least 951 patrols for a total of 3,009 hours during the 2005-2007 Biennium. During this and previously funded bienniums, Lake Mead saw a significant reduction in the numbers of destructive off-road activities. Several violators were apprehended in the act, and this enabled the recoupment of actual damage amounts in



LE Rangers at work near Lake Mead

court. Rangers also detected and investigated many resource theft cases, from cactus and mesquite, to reptile species and rocks.

Partners and/or Subcontractors

USFS and BLM

Agency Project Contact

John Tesar, NPS, Boulder City, NV, (702) 293-8944

Funding Amount Awarded

2003-NPS-233	\$271,990
2005-NPS-495	\$416,530

Contract Term

2003-NPS-233	07/02/2003 through 08/01/2005
2005-NPS-495	08/02/2005 through 06/30/2007

LEAD AGENCY

U.S. Department of the Interior Bureau of Land Management

Project Title

Law Enforcement
2005-BLM-496
Implementation

Project Description

The project supported four full-time BLM LE Rangers who patrolled the four Desert Tortoise ACECs and other high value habitats consistent with MSHCP goals.

Project Status

Completed. Between July 1, 2005 and June 30, 2007, BLM LE Rangers patrolled 1,016 days in four patrol areas consisting of the Coyote Springs, Gold Butte, Mormon Mesa, Piute/Eldorado and Rainbow Gardens ACECs, Logandale Trails, wilderness areas, and the mesquite habitat around Glendale. Each patrol area contained Multiple Use Management Areas, which have a large percentage of the habitat for MSHCP covered and evaluation species. Additional work days were spent completing reports, attending court for citations issued, coordinating with BLM staff to resolve resource impacts, and mandatory training such as weapon qualifications.

A total of 13,157 public contacts were made during the project, 1,161 citations issued, and 168 arrests made. Eight out of 15 monitoring sites showed no change during the project. Seven sites did receive damage of varying degrees and duration.

Partners and/or Subcontractors

U.S. Department of the Interior, NPS, USFWS, USDA, USFS, local LE agencies including Las Vegas Metropolitan Police and Moapa Tribal Police



Unauthorized vehicle route in the Gold Butte ACEC



An interagency LE task force discovered evidence of people residing in caves within the Rainbow Gardens ACEC

Agency Project Contact

Carolyn Ronning, BLM Las Vegas Field Office, Las Vegas, NV, (702) 515-5143

Funding Amount Awarded

\$672,000

Contract Term

07/01/2005 through 06/30/2007

LEAD AGENCY

U.S. Department of the Interior Bureau of Land Management

Project Title

Restoration in Desert Tortoise Critical Habitat
2005-BLM-500
Implementation

Project Description

The project continued restoration and monitoring activities in desert tortoise ACECs. These areas were established by the BLM Las Vegas Field Office in accordance with the Desert Tortoise Recovery Plan (1994) for the protection and recovery of the desert tortoise species across nearly one million acres. The project resulted in restoration of 90 habitat disturbance sites and monitoring of four long-term monitoring sites.



Site PV0906k before restoration treatment (with trail)

Project Status

Completed. Ninety sites, totaling approximately 498 acres of desert tortoise habitat received restoration treatments. The project funded a restoration team of two crew members and several periodic 10-person conservation crews that completed restoration on a total 90 disturbed sites, 37 in the Piute/Eldorado ACEC, 40 in the Coyote Springs ACEC, and 13 in the Gold Butte ACEC. All 90 restoration sites were revisited and monitored for social success and recovery. Four sites restored during 2003-2004 were established as long term monitoring sites and monitored for both social success and biological success. When comparing 2004 and 2007 data at the long term monitoring sites we see a significant increase in plant cover and soil stability on the disturbed-restored areas in 2007. These are good indicators that the sites are on the path of recovery. In spring of 2007, 42 restoration sites were revisited to determine social success of active restoration. Of 22 sites monitored in Piute/Eldorado Valley ACEC, 0% of sites were fully restored, 5% were mostly restored, 59% were recovering, and 36% were not recovering. In addition to the 2005-2007 sites monitored, 230 older restoration sites were also monitored for social and qualitative biological success as it relates to vegetative cover. Of 209 sites monitored in Piute/Eldorado ACEC, 62% of all the sites were undisturbed, 29% of all the sites were redisturbed by off-highway vehicle (OHV) use, and 9% of all the sites were completely reopened by OHV use. Of 21 sites monitored in Gold Butte ACEC, 71%



Site PV0906k after restoration treatment
(natural habitat restored)

of all the sites were undisturbed, 23% were redisturbed, and 6% were reopened. Of 209 sites monitored in Piute/Eldorado Valley ACEC, 3% of sites were fully restored, 12% were mostly restored, 68% were recovering, and 17% were not recovering. Of 21 sites monitored in Gold Butte ACEC, 5% of sites were fully restored, 10% were mostly restored, 71% were recovering, and 14% were not recovering.

Partners and/or Subcontractors

The BLM utilized Great Basin Institute personnel as Crew Leaders and the Nevada Conservation Corps for large crews as required for projects.

Agency Project Contact

Carolyn Ronning, BLM Las Vegas Field Office, Las Vegas, NV, (702) 515-5143

Funding Amount Awarded

\$353,131

Contract Term

07/01/2005 through 06/30/2007

LEAD AGENCY

Nevada System of Higher Education

Project Title

Sediment Transport of Source Materials to White-Margined
Penstemon Habitat
2005-NSHE-502A
Information Gathering and Analysis

Project Description

The purpose of this study is to characterize the location, nature, magnitude, and frequency of sediment transport of selected study areas to the sandy habitats of *Penstemon albomarginatus*. The results of this study will determine the exact source and flux of sandy and suspended mineral dust material and the process by which the material is moved through the study areas. Study results will help develop understanding of the possible impacts development has on the ecological processes that maintain healthy populations of *P. albomarginatus*. This analysis will provide needed information to managers, air quality specialists, and developers.



The southernmost study site, Roach Lake South is closest to the proposed Ivanpah airport location. The photo is taken from the site location looking southwest with Roach Lake in the background

Project Status

In progress. The project was awarded in May 2007. Identification of the flux gate locations and instruments is complete. The data management plan and work plan with detailed timeline were submitted and approved. The project kickoff meeting involved all partners in the project. The fabrication and calibration of all instrumentation has begun and installation of instrumentation will follow.



A flowering *P. albomarginatus* from one site during a 2006 field trip. Plant width is ~20cm

Partners and/or Subcontractors

BLM, University of Guelph, Ontario, Canada

Agency Project Contact

Dr. Vic Etyemezian, Principal Investigator, Nevada System of Higher Education,
755 E. Flamingo Rd., Las Vegas, NV 89119

Funding Amount Awarded

\$800,553

Contract Term

05/05/2007 through 01/04/2010

LEAD AGENCY

U.S. Forest Service, Spring Mountains National Recreation Area

Project Title

Resource Protection Law Enforcement
2003-USFS-234
2005-USFS-504
Implementation

Project Description

This project provided resource protection and LE in the SMNRA. The area experienced an increase of use by visitors and it became necessary to provide LE presence to deter illegal activities. This project focused on educating and instructing visitors in appropriate use and issuing tickets, warnings, and enforcement actions when mitigation was required. Warnings and enforcement actions were issued for vehicle and OHV violations, damage to natural resources and recreation signs, litter and dumping, damage to natural resources, spark arrester violations, target shooting, abandoned and unauthorized campfires, abandoned personal property, and blocked roadways. "Tread Lightly and Leave No Trace" information was provided to visitors and informational signs were installed and maintained in high use locations.

Project Status

Completed. This project is completed but not closed because final payment is pending. A LE Officer, Resource Protection Officer, and Forest Protection Officer were funded, hired, trained, equipped and patrolled the SMNRA during this contract period. USFS-SMNRA was able to provide complete LE coverage during the contract term due to staffing turnover. USFS-SMNRA requested an extension of the project so that the remaining funding could be used to provide LE during the 2007-2009 Biennium, however, the Clark County DCP was unable to grant that extension.

Partners and/or Subcontractors

None

Agency Project Contact

Erick Walker, RELM Officer, USFS, 4701 N. Torrey Pines Dr., Las Vegas, NV 89130,
(702) 515-5440

Funding Amount Awarded

2003-USFS-234	\$517,010
2005-USFS-504	\$544,919

Contract Term

2003-USFS-234	08/19/2003 through 05/31/2007
2005-USFS-504	07/05/2005 through 06/30/2007

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LEAD AGENCY

Robert Oliver

Project Title

Law Enforcement for the
Boulder City Conservation Easement
2005-OLIVER-512
Implementation

Project Status

This project report was incorporated into the project 714 report. See project 714 for complete project report.

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LEAD AGENCY

National Park Service, Lake Mead National Recreation Area

Project Title

Sahara Mustard Control In Rare Plant Habitats
2005-NPS-533
Information Gathering and Analysis

Project Description

The goal of this project was to initiate and expand control efforts for *Brassica tournefortii* (Sahara mustard) invasions on high priority rare plant habitats within Clark County. The objective was to provide emergency conservation actions to protect sand-loving rare plants. The index of success was the removal or destruction of a significant portion of Sahara mustard plants from rare plant, sandy habitats over a two-year period.



Sahara mustard infestation

Project Status

Completed. The two-year emergency control effort for Sahara mustard was completed. A grand total of 500,491 plants were removed from rare plant habitat in a two year period. Sahara mustard control was focused on several known rare plant populations and their habitats throughout Clark County. The areas and rare plants were:

- Sandy Cove, LMNRA - three-corner milk vetch
- Virgin River dunes, LMNRA and BLM - threecorner milk vetch, sticky buckwheat, and Beaver Dam breadroot
- Jean Dry Lake, Hidden Valley, and Ivanpah Valley - white-margined penstemon
- Sandy areas in the Muddy River Drainage- threecorner milk vetch and Beaver Dam breadroot
- Sandy areas in Logandale Management Area - threecorner milk vetch and Beaver Dam breadroot
- Sandy/Saline areas in Pahrump Valley and Sandy Valley - Pahrump Valley buckwheat



Removal effort for Sahara mustard

Partners and/or Subcontractors

Josh Hoines and Dianne Bangle, Research Assistants, NPS Monitoring Programs, Public Lands Institute, UNLV

Agency Project Contact

Alice C. Newton, Supervisory Resource Management Specialist, LMNRA,
601 Nevada Way, Boulder City, NV 89005, alice_corrine_newton@nps.gov

Funding Amount Awarded

\$150,566

Contract Term

08/02/2005 through 06/30/2007

LEAD AGENCY

Clark County

Project Title

Desert Conservation Program Administration
2005-CC-544
2005-CC-544P
Operations

Project Description

The purpose of this project is to provide for the day-to-day administration and operations of the DCP and implementation of the MSHCP by Clark County, on behalf of the cities of Las Vegas, North Las Vegas, Henderson, Mesquite, Boulder City, and the Nevada Department of Transportation. The administration and operations of the program during this reporting period focused on the completion of the 2003-2005 and 2005-2007 IPBs recommended by the advisory committee (AC) and the implementation of nearly 60 recommendations made in the December 2005 Program Management Analysis (PMA).

Many projects from the 2003-2005 IPB continued into the 2005-2007 biennium. The 2005-2007 IPB was the largest adopted since the inception of the MSHCP, including nearly 100 mitigation and conservation projects and a total biennial budget of \$38 million. The PMA primarily focused on management of the program, the implementation of the AMP, and the functioning of the stakeholder advisory group.

Project Status

In progress. Administration of the program is ongoing. Administration of the program for this biennium included an overhaul of the AC and public participation process, including the development of a comprehensive ethics and conflict of interest education program for committee participants and staff. A new AC was chartered and seated in 2006. This committee's work is highlighted in Project Number 544A.

As a result of a staffing analysis, eight new staff positions were added to the program. Project Managers and Contract Managers were assigned to all projects on the basis of project complexity and priority. A Deputy District Attorney was assigned to the Department of Air Quality and Environmental Management on a full-time basis. A Purchasing Analyst was also dedicated to the Department to assist the program with contracting activities.

The program made significant progress re-engineering its business processes to employ best management practices for contract administration, project management, and accounting. Examples include the Program's template interlocal agreement and contract revision, to ensure that the scope, budget, schedule and quality of the projects improved and could be enforced. In addition, a comprehensive Project Management Handbook (http://www.accessclarkcounty.com/daqem/epd/desert/dcp_forms.html) was

produced. Substantial progress was made on creating an automated contract management and project tracking system and a new financial accounting database was created and implemented to track expenditures.

Starting January 2006 forward, each individual mitigation fee form submitted to the program from the permittee agencies was audited and an audit inquiry form was returned to permittee agencies to reconcile any discrepancies found. Emergency interim procedures were put in place to standardize how fee forms were completed, how fees were assessed and collected, and reporting requirements were standardized. The error rate has decreased significantly as a result of these efforts.

The administration of the program funded the facilitation of AC meetings (Project Number 544A), legal consultation services (Project Number 615), and surface water rights consulting (Michael Buschelman).

The program directly carried out projects related to public information and education, cooperative weed management, the development of conservation management strategies for key species and ecosystems, implementation of the AMP, management of the Boulder City Conservation Easement (BCCE), desert tortoise fencing, operation of the DTCC, and desert tortoise translocation.

Partners and/or Subcontractors

City of Las Vegas, City of North Las Vegas, City of Henderson, City of Mesquite, City of Boulder City, Nevada Department of Transportation

Agency Project Contact

Marci Henson, Clark County DCP, Las Vegas, NV, (702) 455-3118, mhenson@co.clark.nv.us

Funding Amount Awarded

2005-CC-544	\$581,150
2005-CC-544P	\$1,743,540

Contract Term

Clark County project effective dates - 07/01/2003 through 06/30/2007 (internal project/no contract term)

LEAD AGENCY

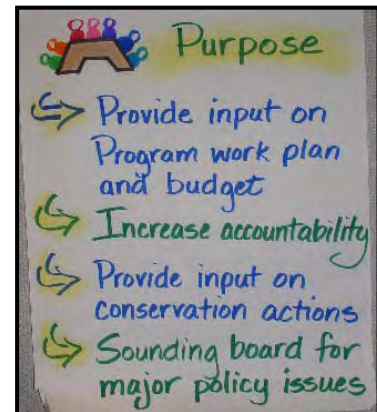
Ruth Siguenza, Certified Public Facilitator

Project Title

Facilitation Services for the Clark County Desert Conservation Program
2005-SIGUENZA-544A
Operations

Project Description

This project convened and facilitated a new DCP AC and assisted in the development of consensus recommendations on the 2007-2009 IPB. The Committee was comprised of 12 members appointed by the Clark County Board of County Commissioners and 16 ex-officio members representing the MSHCP permittees, Implementation Agreement agency partners, and the federal regulator for the incidental take permit, the USFWS. The 2007-2009 IPB will guide the project priorities for implementation and monitoring of the 78-species HCP under the federal ESA. Facilitation work included: issue identification; interagency coordination; process design (including biennial budget development process); meeting design; graphic facilitation and support; conflict resolution; and evaluation of the 2006 committee process.



The four primary purposes of the 2006 DCP AC as posted at every meeting

Project Status

Completed. Convening and facilitating the new DCP-AC was completed. The DCP AC was chartered for a single year, 2006, in response to the 2005 PMA and its recommendations. The Committee met eight times in 2006, in May, June, July, August, September, October, November, and December. There was a published meeting agenda with goals for each agenda item for each meeting. In addition, there were more detailed meeting designs, outline methods, approaches, processes, and suggested timing for each agenda item. Meeting designs also included coordination across meetings for issues and activities requiring multiple meetings to address. Meeting preparation included clarifying goals for the meeting as a whole and for each agenda item and coordination with the appropriate county staff, contractors, committee members, and other interested parties to assure that expectations were clear prior to meetings.



Ruth E.N. Siguenza, CPF

In addition to DCP AC meetings, the facilitator was involved in a number of other meetings with key parties to implement the MSHCP, including two permittee meetings in

May 2006 and February 2007; one Southern Nevada Agency Partnership federal managers meeting in June 2006; one Implementation Agreement group meeting in July 2006; and HCP training in November 2006. For each meeting, there was a published meeting agenda with goals for each agenda item, more detailed meeting designs for each meeting. Meeting preparation included clarifying goals for the meeting as a whole and for each agenda item and coordination with the appropriate staff, agencies, and other interested parties to assure that expectations were clear.

The work also involved developing a series of options and associated graphics regarding the possible long-term structure of the program's AC, and a written survey and compilation of results of the 2006 committee DCP AC.

The DCP AC successfully developed consensus recommendations on the 2007-2009 IPB that the plan administrator and MSHCP permittees could also fully support.

Partners and/or Subcontractors

MSHCP permittees, plan administrator and DCP staff, DCP Advisory Committee Chair, Mike Ford

Agency Project Contact

Ruth E.N. Siguenza, Certified Professional Facilitator, 914 – 164th Street SE, #1702, Mill Creek, Washington 98012-6385, (425) 385-2700, Ruth@RuthSiguenza.net
www.RuthSiguenza.net

Funding Amount Awarded

\$130,000

Contract Term

02/21/2006 through 02/28/2007

LEAD AGENCY

The Shipley Group

Project Title

Desert Wildlife Management Area Conservation
Management Strategy Development
2003-SHIPLEY-380A
2003-SHIPLEY-548A
Planning

Project Description

Developed and completed a CMS for the Piute Eldorado, Coyote Springs, Mormon Mesa, and Gold Butte DWMA's in support of Clark County's DCP and in support of a condition for the county's Section 10(a)(1)(B) incidental take permit issued by the USFWS. The CMSs will help the county prioritize conservation projects and establish a budget for the implementation of these strategies.



Mormon Mesa DWMA

Project Status

Completed.

Partners and/or Subcontractors

None

Agency Project Contact

Dr. Paul Rusanowski, and Dr. Anthony Krzysik,
The Shipley Group, Woods Cross, UT
(801) 298-7800



Coyote Spring Valley DWMA

Funding Amount Awarded

2003-SHIPLEY-380A \$210,000
2003-SHIPLEY-548A \$210,000

Contract Term

2003-SHIPLEY-380A 04/06/2004 through 05/31/2006
2003-SHIPLEY-548A 04/06/2004 through 05/31/2006

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LEAD AGENCY

Clark County

Project Title

Public Information and Education Core Programs
2005-CC-558
Implementation

Project Description

This project supports outreach events, the purchase and distribution of promotional products, and advertising campaigns supporting the “Respect, Protect, and Enjoy” theme.

Project Status

Completed. During this biennium, this project updated and reformatted the DCP and Mojave Max websites (<http://www.accessclarkcounty.com/daqem> and www.mojavemax.com). Billboards and print media were produced with “Stay on the Trail” and “Use Only as Directed” OHV messages. Collaborative partnerships were expanded and information and representation was provided at outreach events. The Clark County DCP attended the annual Clark County Fair and Rodeo, provided outreach alongside 25 partners, and provided program demonstrations in a 2,400 sq. foot tent area titled “Explore Your Nevada.”



2007 Clark County Fair

Partners and/or Subcontractors

Clark County Fair and Rodeo, Federal Agencies,
County Departments, Shonkwiler Partners

Agency Project Contact

Christina Gibson, Clark County DCP,
500 S. Grand Central Pky., Las Vegas, NV 89155-5210,
(702) 455-2860, cng@co.clark.nv.us

Funding Amount Awarded

\$110,000

Contract Term

Clark County project effective date - 07/01/2003 through
06/30/2007 (internal project/no contract term)



Logo used for Mojave Max products

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LEAD AGENCY

Clark County

Project Title

Mojave Max Emergence Contest
2005-CC-560
2005-SHONKWILER-560A
Implementation



Live Mojave Max,
Red Rock Canyon Natural
Conservation Area

Project Description

This project supported the costumed Mojave Max appearances, the winning class field trip, educational projects, distribution of promotional products, and advertising campaigns supporting the Mojave Max Education Program.

Project Status

Completed. During this biennium, Mojave Max assemblies, the Mojave Max emergence contest, and the Mojave Max winner's field trip were administered. The project also promoted the emergence contest and education through articles, news releases, and outreach events.

Partners and/or Subcontractors

BLM, Red Rock Canyon Interpretative Association,
Clark County School District, Steve-N-Kids, Shonkwiler
Partners

Agency Project Contact

Christina Gibson, Clark County DCP,
500 S. Grand Central Pky., Las Vegas, NV 89155-5210,
(702) 455-2860, cng@co.clark.nv.us



Mojave Max mascot

Funding Amount Awarded

2005-CC-560	\$180,000
2005-SHONKWILER-560A	\$135,000

Contract Term

2005-CC-560	Clark County project effective dates 07/01/2003 through 06/30/2007 (internal project/no contract term)
2005-SHONKWILER-560A	08/16/2005 through 06/30/2007

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LEAD AGENCY

Clark County

Project Title

Retro-Fencing
2005-CC-562
2005-NDF-562A
2005-AmericanFence-562B
2005-PIC-562D
Implementation

Project Description

This project supports retrofitting of existing fencing, and inventory and maintenance of tortoise-proof barriers to reduce tortoise mortality along roadways as defined in Section 2.8.3.6 of the MSHCP and Condition N of the Clark County incidental take permit.

Project Status

In progress. The project for this biennium is completed, however, fencing and administration work is ongoing. Contracted work with NDF during this biennium included: retrofitting high priority roads with tortoise-proof mesh and monitoring along I-15 in the northwest area of Clark County; and maintaining previously installed tortoise-proof barriers along the north and south boundaries of the LSTS and the north and south sides of Nipton Road. Approximately 25 additional miles of fencing was completed during this biennium. Twenty miles of fencing mesh was purchased from American Fence for these projects. PIC also completed fencing portions of I-15 in the northwest area of Clark County using Boy Scout troops and church groups.



Standard 4-strand barbed wire fencing where tortoise-proof fencing material is attached

Partners and/or Subcontractors

NDF, Nevada Department of Transportation, American Fence Company

Agency Project Contact

Christina Gibson, Clark County DCP,
500 S. Grand Central Pky., Las Vegas, NV,
(702) 455-2860, cng@co.clark.nv.us



Fencing materials

Funding Amount Awarded

2005-CC-562	\$792,000
2005-NDF-562A	\$200,000
2005-AMERICANFENCE-562B	\$123,970
2005-PIC-562D	\$137,500

Contract Term

2005-CC-562	Clark County project effective dates 07/01/2003 through 06/30/2007 (internal project/no contract term)
2005-NDF-562A	01/30/2006 through 01/29/2010
2005-AMERICANFENCE-562B	03/20/2007 through 06/30/2007
2005-PIC-562D	07/01/2005 through 06/30/2007

LEAD AGENCY

University of Nevada Reno

Project Title

Butterfly Monitoring in the Spring Mountains
2005-UNR-570
Information Gathering and Analysis

Project Description

This project is monitoring 11 species of rare butterflies and mapping their habitats in the SMNRA. Habitat characteristics to be described and mapped include gradients in climate, topography, land cover, nectar resources, host plants, human land use and other abiotic characteristics. The project will also document how the butterflies move between habitat patches, when they are flying, and whether any of the eleven butterfly species exhibit metapopulation structure with different patches acting as either source or sink populations.



Acastus butterfly host plant

Project Status

In progress. Project began on March 20, 2007, and subcontractor and other staffing was completed. Site selection was completed and field data collection began in May 2007 and continued through the end of the biennium. Butterfly sampling was accelerated due to climate patterns, habitat patch area description and mapping has not yet started.

Partners and/or Subcontractors

Bruce Boyd, butterfly researcher

Agency Project Contact

Dr. Dennis Murphy, Research Professor, BRRC,
UNR, (775) 784-1303,
ddmurphy@biodiversity.unr.edu

Funding Amount Awarded

\$115,700

Contract Term

03/20/2007 through 11/30/2009



Bruce Boyd and Dr. Murphy

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LEAD AGENCY

National Park Service, Lake Mead National Recreation Area

Project Title

Spring-fed Wetlands and Riparian Restoration
2005-NPS-573
Implementation

Project Description

This project provided funds for NPS to conduct weed control and revegetation at a number of sites throughout Clark County on federal lands primarily. Springs and washes were the primary habitat of focus. Most of the spring and wash work consisted of projects ranging in size from one to 50 acres. Nearly every spring that was invaded by high priority weed species within Clark County federal lands were included in this project. Most of the sites are located within Integrated Management Areas.



Weed control at springs and washes

Project Status

Completed. This project was completed with weed control and revegetation conducted at approximately 37 sites. Tamarisk was eradicated at approximately 25 springs including Red Rock Canyon National Conservation Area, Gold Butte, Muddy Mountains, Newberry Mountains and Spring Mountains. Tamarisk control continues and requires minimal site maintenance to keep tamarisk under control. An increase in desirable native species recovery was observed after weed control during site monitoring. Reducing existing weed populations, eradicating tamarisk and other weeds from isolated areas was successful.

Partners and/or Subcontractors

NPS, Biological Resource Management Division; Exotic Plant Management Team, Ft. Collins, Colorado; Bureau of Reclamation, Lower Colorado River Region, Boulder City; SNWA and Clark County Wetlands Park, Las Vegas, NV, City of Henderson, Nevada (Project Green, Pittman Wash)

Agency Project Contact

Curt Deuser, Liaison, Lake Mead Exotic Plant Management Team, NPS, 601 Nevada Way, Boulder City, NV, 89005, (702) 293-8979



Preparing for revegetation

Funding Amount Awarded

\$391,575

Contract Term

08/02/2005 through 06/30/2007

LEAD AGENCY

Clark County

Project Title

Adaptive Management Program
2005-CC-574
2005-DRI-574A
Operations

Project Description

This project is a continuation of previous AMP projects and was initiated prior to completion of the 2003-2005 AMP project (2003-CC-439). The 2005-2007 AMP project continued to refine the adaptive management analyses defined in the MSHCP and Biological Opinion. These analyses are: habitat loss by ecosystem, land use trends, species status and ecosystem health, and MSHCP implementation and effectiveness. In addition, the 2005-2007 AMP project focused on improvements recommended by the DCP's PMA (December 2005). These improvements included: competitive selection process for the Science Advisor Team, award of the successful proponent for the Science Advisor Team Request for Proposal - Desert Research Institute, annual progress report symposia for DCP projects with an AMP panel of experts providing feedback, elimination of perceived and real conflicts of interest within the AMST and Science Advisor Team, and wider distribution of the products of the DCP, including those of the AMP.

Project Status

In progress. DCP Staff, working with the District Attorney's Office, developed a conflict of interest policy for the DCP Science Advisor Team and those who peer review the work of the DCP Science Advisor Team. This policy bars those organizations who receive MSHCP funds from concurrently serving as either Science Advisor Team members or peer reviewer of the Science Advisor Team's work. After a successful Request for Proposal process, Desert Research Institute was selected to be the Science Advisor for the DCP and was awarded a subcontract for the term of June 5, 2007, to June 30, 2009. Work began on the Annual Work Plan and Data Management Plan, and two project management meetings were held. Data was transferred from the DCP to the Science Advisor. The Adaptive Management Science Plan and Charter for the AMST was revised to focus on peer reviews of DCP programmatic products, including the products of the Science Advisor. This charter includes the DCP Science Advisor Team conflict of interest policy. Because the Science Advisor subcontract was not awarded until June 2007, due to funding delays, the AMST was not yet reseeded. Selection of potential members of the AMST began in anticipation of peer review of a draft of the 2008 Adaptive Management Report in late 2007.

Negotiations were completed on an interlocal agreement with USGS to provide peer review to technical and biological project products for a term ending June 30, 2010. This agreement had not been awarded by the end of the 2005-2007 biennium, but was

scheduled for award on July 3, 2007. A proposed scope of work for a similar peer review interlocal agreement was also presented to USFS-Rocky Mountain Research Station, and negotiations were started.

Partners and/or Subcontractors

Desert Research Institute, USGS, USFS-RMRS

Agency Project Contact

Sue Wainscott, Adaptive Management Coordinator, DCP, Las Vegas, NV
(702) 455-3849, swainsco@co.clark.nv.us

Funding Amount Awarded

2005-CC-574 \$2,950,335
2005-DRI-574A \$1,700,000

Contract Term

2005-CC-574 Clark County project effective dates
 07/01/2003 through 06/30/2007
 (internal project/no contract term)
2005-DRI-574A 06/05/2007 through 06/30/2009

LEAD AGENCY

University of Nevada Reno

Project Title

Desert Tortoise Monitoring
2005-UNR-585
Information Gathering and Analysis

Project Description

The Clark County Short-Term Desert Tortoise HCP, the DCP and the MSHCP all identify monitoring desert tortoise populations as an essential element of desert tortoise conservation. The Desert Tortoise Recovery Plan recommended monitoring desert tortoise populations as an essential part of any sound conservation or management plan. UNR/USGS has collaborated with the USFWS and Topoworks to conduct desert tortoise monitoring training for range-wide monitoring, improve monitoring techniques, and develop new monitoring techniques. The contract provides UNR funds to prepare for and train desert tortoise line distance sampling crews and provide support for desert tortoise monitoring conducted in the field each spring.



Training for tortoise monitoring

Project Status

In progress. Three months of the contract work was performed during the 2005-2007 biennium. During these months, UNR and USGS provided quality control and analysis of desert tortoise monitoring data being collected in the field and made suggestions for improving the collection of the data. In addition, they participated in post-field season debriefings to identify areas for improvement in future field seasons and to plan for the 2008 line distance sampling field season.

Partners and/or Subcontractors

Roy Averil-Murray and Linda Allison, USFWS; Richard Tracy, Jill Heaton and Ron Marlow, UNR

Agency Project Contact

Dr. Ron Marlow, UNR, (702) 493-0754, Dr. C. Richard Tracy, (775) 784-4565

Funding Amount Awarded

\$1,217,072

Contract Term

04/03/2007 through 11/02/2009

LEAD AGENCY

University of Nevada, Las Vegas, School of Life Sciences

Project Title

Habitat Manipulations for Relict Leopard Frog Populations
2005-UNLV-597
Information Gathering and Analysis

Project Description

The relict leopard frog (*Rana onca*) is one of the most imperiled vertebrate taxon covered under the Clark County MSHCP. The populations within the north shore springs complex of LMNRA are of primary concern. These populations appear to be declining. The encroachment of emergent native vegetation following reductions in regional burro numbers appears to be degrading habitat quality. The presence of non-native fish within the spring system may also negatively impact population persistence by reducing tadpole survivorship and recruitment into the adult population.

The purpose of this study is to test the hypotheses that reduction of vegetation cover and density along study area springs will increase the use of modified areas by relict leopard frogs, thus potentially allowing for higher adult frog numbers. This study will also test methods to create potential habitats adjacent to the springs that are free of non-native fish and test the hypothesis of whether these fish-free habitats will increase numbers of frog eggs and tadpoles. The ultimate goal is the development of a habitat management plan for relict leopard frogs within the north shore springs complex.



Created fish-free side channel (left) and modified habitat along main channel (right) at upper Blue Point Spring (February 2007)



Field crew conducting vegetation reductions at Rogers Spring (February 2007)

Project Status

In progress. This project was initiated on January 16, 2007. It is approximately 20% complete. Over 130 linear meters (along stream courses) of experimental habitat improvements for relict leopard frogs were conducted. Data describing baseline vegetation conditions prior to habitat experiments was collected, and vegetation monitoring to evaluate the efficacy of these actions was initiated. A fish-free channel (three pools of approximately 21 linear meters) and a smaller fish-free pool (approximately four linear meters) were constructed. Surveys to estimate frog populations and monitor population responses to experimental actions were initiated.

Partners and/or Subcontractors

Relict Leopard Frog Conservation Team, Resource Management at LMNRA, NPS

Agency Project Contact

Dr. Jef Jaeger, Primary Investigator, Research Assistant Professor, School of Life Sciences, UNLV, Box 454004, 4505 S. Maryland Parkway, Las Vegas, NV 89154-4004, (702) 895-2463, jef.jaeger@unlv.edu

Funding Amount Awarded

\$87,267

Contract Term

01/16/2007 through 05/01/2009

LEAD AGENCY

USDA-Animal and Plant Health Inspection Service-Wildlife Services
Nevada Department of Agriculture-Division of Resource Protection

Project Title

Wildlife Damage Management for the Protection of
Identified Threatened and/or Endangered Species
2005-USDA-ADC-598-1
2005-USDA-ADC-598-2
Implementation

Project Description

Part A: One of the projects for the Nevada Department of Resource Protection (NDRP), formally known as NADCP, is feral cat damage management for the protection of the Palmer's chipmunk. Feral cat detection initiates control measures for removal. Cats are humanely captured in cage traps, and if determined to be feral, the cats are euthanized. Biological samples are obtained for disease testing and stomach samples are obtained for gut content analysis and for monitoring efficacy. Disease monitoring efforts are applied to both target and non-target species.

Part B: NDRP also protects the desert tortoise from raven predation. NDRP continually monitors sites in Clark County where ravens are subsidized by human enhancements such as landfills and dairies. Where ravens are above acceptable levels for the area, raven reduction efforts are conducted.

Project Status

In progress.

Part A: During this reporting period, an additional four feral cats were removed from the Spring Mountains. Samples were obtained from each for disease monitoring, since the pneumonic plague was discovered in previously trapped feral cats. Stomach samples were obtained from the captured feral cats for potential genetic analysis of Palmer chipmunk ingestion.



Feral cat pictured in Palmer chipmunk habitat



Egg baits set for raven control project

Part B: During this reporting period, seven raven control projects were conducted. These projects combined for the removal of 444 ravens from the area. USDA-ADC also removed one raven nest. Raven control projects are continuing, because raven levels are still above an acceptable threshold for the area. USDA-ADC will continue monitoring raven population levels, to ensure that our efforts address the change in dynamics.

Partners and/or Subcontractors

USDA Animal and Plant Health Inspection services – Wildlife Services, NDOA, Division of Resource Protection.

Agency Project Contact

Mark Jensen, State Director: USDA-Wildlife Services-NDRP,
8775 Technology Way, Reno NV 89521, 775-851-4848,
Mark.A.Jensen@aphis.usda.gov

Funding Amount Awarded

\$92,768 (funding amount combines 598-1 and 598-2, \$46,384 each)

Contract Term

2005-USDA-ADC-598-1 and -598-2 01/17/2006 through 01/31/2008

LEAD AGENCY

Clark County

Project Title

Adaptive Management of Information Gathering
and Analysis Projects
2005-CC-609
Information Gathering and Analysis

Project Description

This project provides for additional supplemental funding for MSHCP 2005-2007 projects that are required to address technical conditions per their approval by the Clark County Board of County Commissioners, USFWS, and the Secretary of the Interior.

Project Status

In progress. DCP staff identified 2005-2007 SNPLMA Round 6-funded projects eligible to use funding from this project, and also identified a procedure for allocation and accounting for those funds. No funds from this project have yet been allocated to any of the eligible projects. Of the 32 eligible projects, four were awarded, and staff were able to address the technical conditions for funding without use of this project's funds.

Partners and/or Subcontractors

None

Agency Project Contact

Sue Wainscott, Adaptive Management Coordinator, DCP, Las Vegas, NV
(702) 455-3859, swainsco@co.clark.nv.us

Funding Amount Awarded

\$550,000 (including 10% contingency)

Contract Term

Clark County project effective date - 07/01/2003 through 06/30/2007 (internal project/no contract term)

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LEAD AGENCY

Paul T. Selzer, Esq., Attorney at Law

Project Title

Consulting Services
2005-SELZER-615
Operations

Project Description

The purpose of the project was to provide the following services: advise and consult with the administrator regarding the federal ESA and the Permit; advise and consult with the administrator regarding proposed amendments to the federal ESA and the effects of federal cases dealing with the federal ESA; prepare for and attend meetings of the IMC and AMP Working Group; respond to questions and inquiries from members of the IMC; advise and consult with administrator regarding the SNPLMA; review proposed budgets and advise administrator regarding budget proposals and potential effects of budget proposals on the Permit; review and advise administrator regarding LE issues; advise and propose strategies dealing with the Permit, the IMC and the federal ESA; review and prepare advice regarding “no Unmitigated Net Loss” requirements of federal law; prepare briefings and reports requested by the administrator; and begin preparation of a history of the DCP.

Project Status

Completed. Consultant has provided consulting services to the County since the inception of its endangered species program in 1989.

Partners and/or Subcontractors

None

Agency Project Contact

Paul T. Selzer, Esq, Attorney at Law, 1037 S. Palm Canyon Drive, Palm Springs, CA 92264; (760) 327-4085, fax: (760) 327-4085, ptslaw@aol.com

Funding Amount Awarded

\$250,000

Contract Term

07/01/2005 through 06/30/2007

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LEAD AGENCY

Robert Oliver

Project Title

Boulder City Conservation Easement Resource Protection
2005-OLIVER-512
2007-OLIVER-714
Implementation

Project Description

These projects provide LE for the BCCE, a desert tortoise conservation area set aside by the County in order to meet its federal take permit requirements. The property contains significant natural resource, ecological and native habitat values as well as various indigenous flora and fauna. The BCCE is approximately 85,000 acres of land that lies due south of Boulder City and on both sides of U.S. 95 Highway. The area attracts many users for assorted recreational endeavors because of its close proximity to Boulder City and Las Vegas. Due to its status as a desert tortoise conservation area, the BCCE has a number of ordinances in place to protect the natural habitat and prevent against inappropriate use. These include, but are not limited to, rules against off-road travel, dumping, vandalism, speeding, shooting, and camping.



Officer on patrol

Project Status

Completed. Project 2005-OLIVER-512 was completed. One permanent, full-time LE Officer was funded, equipped and patrolled the BCCE during this contract period. His activities included patrolling approximately 40 hours per week, court appearances as necessary, drafting patrol plans, and submitting weekly patrol reports and quarterly summary reports. During the 2005-2007 biennium, the Officer had 5,160 contacts with the public and issued 34 citations.



Sign indicating limited use area

In progress. Project 2007-OLIVER-714 is a continuation of the previous project and provides the same LE services in the BCCE.

Partners and/or Subcontractors

None

Agency Project Contact

Robert Oliver, Henderson, NV 89015, (702) 565-0740

Funding Amount Awarded

2005-OLIVER-512	\$149,900
2007-OLIVER-714	\$183,280

Contract Term

2005-OLIVER-512	10/01/2005 through 06/30/2007
2007-OLIVER-714	06/19/2007 though 06/30/2009

LEAD AGENCY

University of Nevada, Las Vegas

Project Title

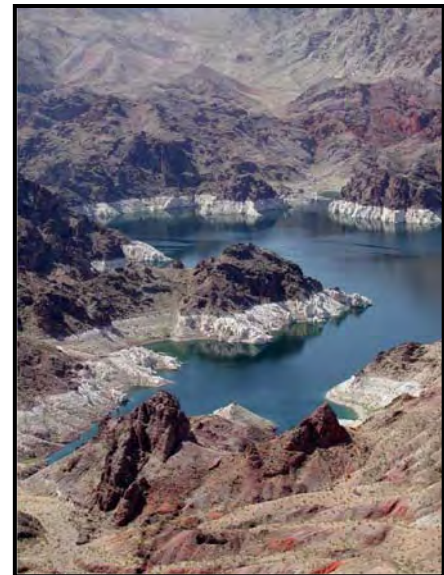
Floristic Survey of the Black Mountains
2003-UNLV-1006
Information Gathering and Analysis

Project Description

This project consists of a floristic survey of the Black Mountains in Clark County, Nevada. The intent is to increase knowledge of location and abundance of rare plants and threats to those species. It is expected that this survey will aid in the preparation of a Low Elevation Rare Plants Conservation Plan.

Project Status

Completed. Accessible areas in the Black Mountains were surveyed, including Boathouse Cove Road, North Shore Road, Calville and Echo Washes, and areas accessible by boat along the Lake Mead shoreline. Each survey included a collection list, voucher specimens, and a sighting list of plants observed in the study area, but not collected. A total of 289 vascular plant species were identified during the surveys. This included four species of special concern, twenty non-native introduced species, and one species previously undocumented in Clark County and Nevada.



Black Mountains

Partners and/or Subcontractors

National Park Service

Agency Project Contact

Dr. Wesley Niles, Ph.D., Herbarium, School of Life Sciences, UNLV, or Fred Landau, Research Associate, School of Life Sciences, UNLV, (702) 895-4752, fred.landau@unlv.edu

Funding Amount Awarded

\$26,570

Contract Term

04/20/2005 through 12/31/2006



Las Vegas bear poppy

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LEAD AGENCY

Southern Nevada Environmental, Inc.

Project Title

Desert Tortoise Transfer and Holding Facility and
Desert Tortoise Translocation Program
2003-SNEI-251-1, 2005-SNEI-251-2, 2003-SNEI-329-1,
2005-SNEI-329-2, 2003-SNEI-336, 2005-SNEI-1007
Operations

Project Description

Clark County operated the Desert Tortoise Transfer and Holding Facility (DTTHF) through ongoing professional services contracts with Southern Nevada Environmental Incorporated (SNEI) since 1993. In 1997, SNEI was contracted to manage the DTCC and manage the Translocation Program.

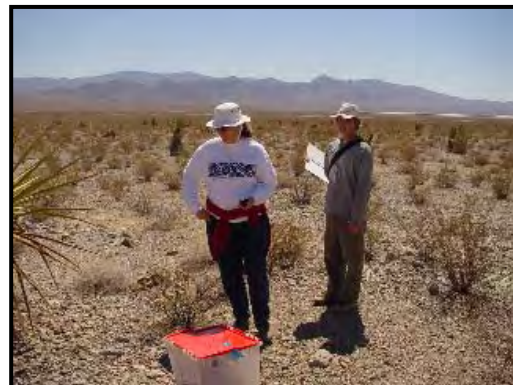
Operation and management of the DTTHF included operating the desert tortoise hotline and county-wide pickup service, entailing a comprehensive call log and database. The service operates 365 days per year. In addition, the holding facility was responsible for a disease screening program, data collection and tagging, maintaining a database of all incoming animals, and care and feeding. The pickup service has picked up over 15,000 desert tortoises since 1995 and averaged approximately 2,400 pick-ups a biennium over the last three biennia. Less than 100 tortoises that entered the DTCC per biennium were wild tortoises.

Management responsibilities for the DTCC included maintenance of holding pens, the DTCC administrative building, landscaping, research pens, irrigation system, well system, care and feeding of BLM tortoises and tortoises not currently in a research program. Additional responsibilities included coordinating various research projects and assisting research activities.

Clark County tortoises held in the DTTHF that were eligible for translocation were taken to the LSTS as part of the Clark County translocation program. More than 6,900 tortoises have been released since 1997.



Testing and evaluating a desert tortoise



Translocation of desert tortoises into the LSTS

Project Status

Completed. All contracts for services have been completed.

Incoming tortoises to the DTTHF in the 2005-2007 biennium totaled 2,269, 143 of which were known wild tortoises. The remainder of the tortoises entering the facility were either unwanted pets or of unknown origin.

As part of their responsibilities under management of the DTCC, SNEI assisted and coordinated with researchers from the Smithsonian institute, UNR; USGS – BRD; San Diego Zoo – Center for Reproduction of Endangered Species; Georgia Southern University; University of California, Los Angeles; and the Desert Research Institute.

SNEI released 1,148 tortoises at the LSTS during the 2005-2007 biennium. Translocated tortoises were required to test negative on the ELISA, indicating it is likely the tortoise has not been exposed to an upper respiratory tract disease.

Partners and/or Subcontractors

None

Agency Project Contact

Chuck LaBar, President, SNEI, Las Vegas, NV (702) 248-5370, Michelle McDermott, Facility Manager, SNEI, (702) 525-5957

Funding Amount Awarded

2003-SNEI-251-1	\$402,867 (S10)
2005-SNEI-251-2	\$79,188 (S7)
2003-SNEI-329-1	\$72,389 (S10)
2005-SNEI-329-2	\$19,312 (S7)
2003-SNEI-336	\$98,202 (\$80,202 + \$18,000 amendment) (S7)
2005-SNEI-1007	\$382,298 (S7)

Contract Term

2003-SNEI-251-1	06/17/2003 through 08/01/2005, amended through 09/06/2005
2005-SNEI-251-2	09/06/2005 through 12/31/2005
2003-SNEI-329-1	06/17/2003 through 08/01/2005, amended through 09/06/2005
2005-SNEI-329-2	09/06/2005 through 12/31/2005
2003-SNEI-336	06/17/2003 through 06/30/2005, amended through 12/30/2005
2005-SNEI-1007	01/03/2006 through 12/31/2006, amended through 06/30/2007

LEAD AGENCY

U.S. Geological Survey

Project Title

USGS Adaptive Management Science Team Member – Medica
2003-USGS-1010
Information Gathering and Analysis

Project Status

This project report was incorporated into the project 439 report. See project 439 for complete project report.

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LEAD AGENCY

Michael Buschelman Consulting, Inc.

Project Title

Surface Water Rights Consulting
2003-BUSCHELMAN
Operations

Project Description

The Clark County DCP acquired several water rights as a result of purchasing grazing allotments. In order for Clark County to hold permitted water rights, a series of applications, reports of conveyance, extensions of time, abstracts of water right titles, and proofs of completion and beneficial use needed to be completed and filed by Clark County and accepted by the Office of the State Engineer. The Clark County DCP hired Michael Buschelman Consulting, Inc. to prepare and file the necessary paperwork to establish Clark County as the owner of record and to obtain permitted water rights on approximately 67 surface water rights. The manner of use for the water rights was also to be changed from grazing to wildlife enhancement.

Project Status

Completed. During the term of this project, 17 surface water rights were permitted under Clark County's name and the manner of use has been changed to wildlife enhancement. Applications for eight of the surface water rights were withdrawn due to a lack of water and one application was denied because it was no longer active due to adjudication of the Colorado River. Applications for the remaining 33 water rights were submitted to the Office of the State Engineer and are under review. The work to permit these water rights will be addressed during the biennium 2007-2009 as part of a new contract.

Partners and/or Subcontractors

None

Agency Project Contact

Michael D. Buschelman Consulting, Inc., P.O. Box 51371, Sparks, NV 89435,
(775) 355-9628

Funding Amount Awarded

\$30,500

Contract Term

03/16/2004 through 06/30/2007

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LEAD AGENCY

Clark County

Project Title

Desert Tortoise Habitat at
Clark County Government Center
2005-CC-DTHABITAT
Implementation

Project Description

This project included creating a desert tortoise habitat at the Clark County Government Center and providing public information and education about the desert tortoise and the DCP for Clark County employees and the public.

Project Status

Completed. The Desert Tortoise habitat was completed and a pet tortoise named Cactus Cate was adopted by Clark County and placed in the habitat in July, 2006. The total amount spent on this project was \$109,000.



Cactus Cate

Partners and/or Subcontractors

Clark County Department of Real Property
Tortoise Group

Agency Project Contact

Christina Gibson, Clark County DCP,
500 S. Grand Central Pky.,
Las Vegas, NV 89155-5210,
(702) 455-2860, cng@co.clark.nv.us

Funding Amount Awarded

\$91,000 Section 10
\$50,000 SNPLMA R4



Habitat construction, 2006

Contract Term

Clark County project effective dates - 07/01/2003
through 06/30/2007 (internal project/no contract term)

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PROJECT INDEX TABLES

Project Index Tables have been included to simplify the location of projects by categories of agency, funding source and project category. Project reports in this document have been sorted by project number.

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INDEX TABLE SORTED BY AGENCY

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
S07	05-07	Implementation	American Fence	562B	Fencing Materials	\$123,970
S10	05-07	Implementation	BLM	496	Law Enforcement	\$672,000
S10	05-07	Implementation	BLM	500	Restoration in Desert Tortoise Critical Habitat	\$353,131
SNPLMA	R4	Information Gathering & Analysis	BLM	344	Ecological Site Inventory for the Spring Mountains Ecosystem	\$885,170
SNPLMA	R4	Implementation	BLM	347	Development of Designated Roads Network in the Northeast Desert Tortoise Desert Wildlife Management Areas	\$148,000
SNPLMA	R4	Planning	BLM	350	Virgin River Conservation Management Strategy	\$213,150
SNPLMA	R4	Operations	BLM	353	Geographic Information Systems Support	\$390,600
SNPLMA	R4	Information Gathering & Analysis	BLM	361	Evaluating Impacts of Cattle Grazing on Vegetation and Vegetative Recovery Following Removal of Cattle Grazing	\$160,200
SNPLMA	R4	Planning	BLM	367	Integrated Mesquite-Acacia Conservation Management Strategy Plan	\$128,100
SNPLMA	R6	Information Gathering & Analysis	BLM	497	Rare Plant Inventories	\$376,688
SNPLMA	R6	Operations	BLM	498	GIS Support	\$645,488
SNPLMA	R6	Planning	BLM	499	Support of the Virgin River Conservation Management Strategy	\$256,623
SNPLMA	R6	Information Gathering & Analysis	BLM	502	Sediment Transport of Source Materials to White-margined Penstemon	\$1,192,522
SNPLMA	R6	Information Gathering & Analysis	BLM	503	Roads Monitoring on BLM Lands	\$432,589
S10	05-07	Operations	Buschelman, Michael	BUSCHELMAN	Surface Water Rights Consulting	\$30,500
S07	05-07	Implementation	CC	563	New Fencing Projects	\$80,000
S07	05-07	Implementation	CC	564	Fencing Monitoring and Maintenance Projects	\$1,500,000
S07	05-07	Implementation	CC	562	Retro Fencing Projects	\$792,000
S10	05-07	Operations	CC	544	Desert Conservation Program Administration	\$581,150
S10	05-07	Planning	CC	546	Boulder City Conservation Easement Plan	\$30,000
S10	05-07	Planning	CC	548	Conservation Management Strategy Development	\$650,000
S10	05-07	Implementation	CC	558	Pie Core Programs: Rural Outreach, Community Participation, and Public Outreach	\$110,000
S10	05-07	Implementation	CC	560	Mojave Max Emergence Contest	\$180,000
S10	05-07	Implementation	CC	DTHABITAT	Desert Tortoise Habitat at Government Center	\$141,000
SNPLMA	R4	Planning	CC	338	Cooperative Weed Management Program Development	\$126,500
SNPLMA	R4	Planning	CC	377	Public Information and Education - Mojave Max Education Project	\$260,000
SNPLMA	R4	Planning	CC	380	CMS Development	\$500,000

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Planning	CC	393	Desert NWR/Developed Community Interface Conservation Resource Plan	\$10,000
SNPLMA	R4	Operations	CC	439	MSHCP Adaptive Management Program Coordination, Science Advice and Effectiveness Monitoring Strategy	\$1,593,015
SNPLMA	R4	Operations	CC	544P	Desert Conservation Program Administration	\$1,743,540
SNPLMA	R6	Implementation	CC	553	Media and Outreach Development	\$264,000
SNPLMA	R6	Implementation	CC	559	Mojave Max Emergence Contest Partnership and Partnership Development	\$440,000
SNPLMA	R6	Operations	CC	574	Adaptive Management Program	\$2,950,335
SNPLMA	R6	Information Gathering & Analysis	CC	605	Volunteer Resource Stewardship Pilot Program	\$250,000
SNPLMA	R6	Information Gathering & Analysis	CC	606	Buckwheat and Bearpoppy Inventory	\$50,000
SNPLMA	R6	Information Gathering & Analysis	CC	607	Rick Analysis	\$100,000
SNPLMA	R6	Information Gathering & Analysis	CC	608	Effectiveness Monitoring for Conservation Actions	\$500,000
SNPLMA	R6	Information Gathering & Analysis	CC	609	Adaptive Management of Information Gathering and Analysis Projects	\$550,000
SNPLMA	R6	Information Gathering & Analysis	CC	609A	Historical and Current Assessment of Six Covered and Three Evaluation Bird Species	\$133,500
SNPLMA	R4	Planning	David Bert	377A	Public Information and Education - Mojave Max Education Project	\$100,000
SNPLMA	R6	Operations	DRI	574A	Science Advisor	\$1,700,000
SNPLMA	R4	Planning	ENTRIX	350A	Virgin River Conservation Assessment	\$1,229,600
SNPLMA	R6	Information Gathering & Analysis	GBBO	581	Developing Habitat Models and Monitoring Techniques for Nine Rare Bird Species of the Clark County MSHCP	\$719,940
S10	01-03	Information Gathering & Analysis	LVSP	101	Las Vegas Bearpoppy Research, Buckwheat Salvage Study, Soil Studies, Germination Trails	\$50,000
S10	03-05	Implementation	Moapa Band of Piutes	103	Control of Russian Knapweed	\$40,000
SNPLMA	R6	Operations	Natural Heritage Program	557	Sensitive Species Data Management	\$81,500
S07	05-07	Implementation	NDF	562A	Fencing	\$200,000
S10	05-07	Operations	NDF	547	Forester II Position	\$135,430
SNPLMA	R6	Information Gathering & Analysis	NDOW	549	Peregrine Falcon Monitoring in Clark County	\$23,283
SNPLMA	R6	Information Gathering & Analysis	NDOW	568	Long-term Conservation Strategy for Palmer's Chipmunk	\$104,431

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R6	Information Gathering & Analysis	Nevada System of Higher Education (NSHE)	502A	Sediment Transport of Source Materials to White-margined Penstemon Habitat	\$800,553
S07	03-05	Implementation	NPS	255	Burro Removal at Lake Mead National Recreation Area	\$34,500
S07	05-07	Implementation	NPS	492	Burro Capture and Removal	\$34,500
S10	03-05	Implementation	NPS	233	Law Enforcement	\$271,990
S10	03-05	Implementation	NPS	272	Plant Material Production	\$51,750
S10	05-07	Implementation	NPS	495	Resource Protection and Law Enforcement at the Lake Mead NRA	\$416,530
S10	05-07	Implementation	NPS	533	Sahara Mustard Control in Rare Plant Habitats	\$150,566
S10	05-07	Implementation	NPS	573	Spring-fed Wetlands and Riparian Restoration	\$391,575
SNPLMA	R4	Information Gathering & Analysis	NPS	178	Songbird Monitoring as a tool for Guiding Habitat Restoration at Lake Mead NRA	\$118,000
SNPLMA	R4	Information Gathering & Analysis	NPS	179	Relict Leopard Frog Monitoring and Management	\$182,850
SNPLMA	R4	Information Gathering & Analysis	NPS	229	Wildlife Inventory Monitoring and Management	\$239,108
SNPLMA	R4	Information Gathering & Analysis	NPS	235	Lake Mead National Recreation Area Data Collection and Analysis	\$221,950
SNPLMA	R4	Information Gathering & Analysis	NPS	314	Lake Mead National Recreation Area Monitoring of Ground Disturbance; Illegal Tracks and Traces	\$50,600
SNPLMA	R4	Planning	NPS	350C	Virgin River Conservation Strategy (with Bureau of Land Management)	\$87,000
SNPLMA	R4	Information Gathering & Analysis	NPS	363	Lake Mead National Recreation Area Vegetation Monitoring Program: Rare Plants, Plant Poaching, and Weed Management Programs	\$611,270
SNPLMA	R6	Information Gathering & Analysis	NPS	475	Peregrine Falcon Monitoring at Lake Mead NRA	\$30,120
SNPLMA	R6	Information Gathering & Analysis	NPS	476	Relict Leopard Frog Monitoring and Management	\$333,000
SNPLMA	R6	Operations	NPS	525	Lake Mead GIS and Data Management Support	\$312,788
SNPLMA	R6	Information Gathering & Analysis	NPS	526	Monitoring of Illegal Ground Disturbance in Response to Management Actions	\$105,287
SNPLMA	R6	Information Gathering & Analysis	NPS	529	Monitoring and Road Conditions and Signs	\$114,737
SNPLMA	R6	Information Gathering & Analysis	NPS	532	Threats, Research and Monitoring on the Invasive Species Sahara Mustard	\$94,554
SNPLMA	R6	Information Gathering & Analysis	NPS	535	Inventory, Research, and Monitoring for Covered Plant Species	\$347,054

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R6	Information Gathering & Analysis	NPS	536	Inventory, Research, and Monitoring of Evaluation and Watch Plant Species on Lake Mead NRA and Adjacent Lands.	\$163,277
SNPLMA	R6	Information Gathering & Analysis	NPS	537	Interagency Week Sentry Project	\$905,688
SNPLMA	R6	Information Gathering & Analysis	NPS	540	Bald Eagle Monitoring	\$21,589
SNPLMA	R6	Information Gathering & Analysis	NPS	542	Historical and Current Assessment of Six Covered and Three Evaluation Bird Species	\$219,903
SNPLMA	R6	Information Gathering & Analysis	NPS	545	Desert Tortoise Monitoring and Management at Lake Mead NRA	\$37,609
S10	05-07	Implementation	Oliver, Robert	512	Law Enforcement for the Boulder City Conservation Easement	\$149,900
S10	07-09	Implementation	Oliver, Robert	714	BCCE Resource Protection	\$183,280
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350B	Virgin River Conservation Partnership Facilitator	\$101,000
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350D	Virgin River Conservation Partnership Facilitator	\$90,000
SNPLMA	R4	Operations	Partners In Conservation (PIC)	256	GPS Roads and Mapping	\$297,000
SNPLMA	R4	Implementation	Partners In Conservation (PIC)	319	OHV Videos	\$99,700
SNPLMA	R4	Planning	Partners In Conservation (PIC)	348	Desert Conservation Week Pilot Program	\$20,500
S07	05-07	Implementation	PIC	562D	Public Outreach for the DCP, Fencing	\$137,500
SNPLMA	R6	Implementation	PIC	577	PIC and Volunteer Support for BLM Roads Monitoring Project	\$322,000
SNPLMA	R4	Planning	RRCIA	377B	Public Information and Education - Mojave Max Education Project	\$100,000
SNPLMA	R6	Implementation	RRCIA	559A	Mojave Max Emergence Contest Partnership and Partnership Development	\$400,000
S10	05-07	Operations	Selzer, Paul	615	Consulting Services	\$250,000
S10	05-07	Implementation	Shonkwiler	560A	Mojave Max Emergence Contest	\$135,000
S10	05-07	Operations	Siguenza, Ruth	544A	Facilitation Services for the Clark County Desert Conservation Program	\$130,000
SNPLMA	R6	Information Gathering & Analysis	Smithsonian	602	Impact of Nutritional Stress on URTD and Immune Function in the Desert Tortoise	\$698,480
S07	03-05	Operations	SNEI	251-2	Clark County Desert Tortoise Transfer and Holding Facility	\$79,188
S07	03-05	Operations	SNEI	329-2	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$19,312
S10	03-05	Operations	SNEI	251-1	Clark County Desert Tortoise Transfer and Holding Facility	\$402,867
S10	03-05	Operations	SNEI	329-1	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$72,389

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
S10	03-05	Operations	SNEI	336	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$98,202
S10	05-07	Operations	SNEI	1007	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$382,298
S10	03-05	Implementation	SNWA	345	Habitat Enhancement in the LV Wash	\$73,500
SNPLMA	R4	Information Gathering & Analysis	SNWA	266	Investigation of Bat Species Diversity and Distribution along the LV Wash	\$35,797
SNPLMA	R4	Information Gathering & Analysis	SNWA	286	Investigation of Amphibian Species Diversity and Distribution along the Las Vegas Wash	\$27,810
S10	05-07	Planning	The Shipley Group	548A	Desert Wildlife Management Area Conservation Management Strategy Development	\$210,000
SNPLMA	R4	Planning	The Shipley Group	380A	Desert Wildlife Management Areas Conservation Management Strategies (contracted with The Shipley Group) 4 DWMAS	\$210,000
SNPLMA	R4	Planning	TNC	330	Low Elevation Rare Plant Conservation Management Strategy	\$113,100
SNPLMA	R4	Operations	TNC	437	Muddy River Interim Management Plan Development and Partner Coordination	\$177,147
SNPLMA	R6	Operations	TNC	561	Muddy River Property Management Acquisition and Partner Coordination	\$260,660
SNPLMA	R6	Information Gathering & Analysis	TNC	572	Effectiveness Monitoring for Saltcedar and Knapweed Control on the Upper Muddy River Floodplain	\$540,902
S10	99-01	Information Gathering & Analysis	UNLV	102	Desert Pocket Mouse Study	\$45,000
SNPLMA	R4	Information Gathering & Analysis	UNLV	230	Temperature Acclimation and Oxygen Consumption Rana Onca Larvae (with National Park Service)	\$83,450
SNPLMA	R4	Information Gathering & Analysis	UNLV	232	Lake Mead National Recreation Area Evaluation of Impact of Vegetation Encroachment on Relict Leopard Frog Populations (with National Park Service)	\$145,526
SNPLMA	R4	Information Gathering & Analysis	UNLV	294	The effects of Athel (Tamarix aphylla) on Riparian Habitats at the Lake Mead National Recreation Area (with National Park Service)	\$64,500
SNPLMA	R4	Information Gathering & Analysis	UNLV	305	Factors Affecting Rarity of the Las Vegas Bearpoppy	\$55,500
SNPLMA	R4	Information Gathering & Analysis	UNLV	331	Lake Mead National Recreation Area Evaluation of Non-Vascular Plants of Concern in Clark County (with National Park Service)	\$30,340
SNPLMA	R4	Information Gathering & Analysis	UNLV	1006	Floristic Survey of the Black Mountains	\$26,570
SNPLMA	R6	Information Gathering & Analysis	UNLV	575	Delineation of Distribution, Evaluation of Relatedness, and Assessment of Connectivity for Leopard from Population within the Management Zone of the Relict Leopard Frog.	\$147,836

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R6	Information Gathering & Analysis	UNLV	597	Evaluation and Experimental Habitat Manipulations of Relict Leopard Frog Populations	\$87,267
SNPLMA	R4	Information Gathering & Analysis	UNR	252	Baseline Density Monitoring: Southern NV Desert Wildlife Management Area Populations of Desert Tortoise	\$1,377,000
SNPLMA	R4	Information Gathering & Analysis	UNR	289	Translocation Long-Term Monitoring, Desert Tortoise Density Evaluation and Establishment of New LSTs	\$161,400
SNPLMA	R4	Information Gathering & Analysis	UNR	369	Red Rocks to the Summit	\$447,600
SNPLMA	R4	Information Gathering & Analysis	UNR	387	Ecosystem Indicators	\$582,100
SNPLMA	R6	Information Gathering & Analysis	UNR	570	Butterfly Monitoring in the Spring Mountains	\$115,700
SNPLMA	R6	Information Gathering & Analysis	UNR	585	Desert Tortoise Monitoring	\$1,217,072
S07	03-05	Information Gathering & Analysis	UNR-BRRC	248	Desert Tortoise Epidemiology	\$657,500
S07	03-05	Information Gathering & Analysis	UNR-BRRC	249	Development of Range-wide Desert Tortoise Monitoring Training Program	\$161,000
S07	03-05	Information Gathering & Analysis	UNR-BRRC	257	Increasing Effectiveness and Economy in Density Monitoring of the Desert Tortoise	\$312,000
S07	03-05	Information Gathering & Analysis	UNR-BRRC	264	Techniques for Monitoring Desert Tortoise Juvenile Recruitment	\$313,000
SNPLMA	R4	Operations	UNR-BRRC	321	Adaptive Management Program	\$925,355
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	567	Epidemiology of Desert Tortoise	\$779,726
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	569	Assessment of Listed and Other species of Concern at the Urban Edge	\$550,128
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	576	Movements and Barriers to Movement for Desert Tortoise	\$719,210
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	578	Ecosystem Indicators: Change Indicators	\$2,752,306
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	588	The Distribution and Abundance of Upland Amphibians and Reptiles	\$1,029,070
S07	05-07	Implementation	USDA-ADC	598-2	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
S10	05-07	Implementation	USDA-ADC	598-1	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384
SNPLMA	R4	Information Gathering & Analysis	USDA-ADC	332	Assist in Development of Wildlife Damage Management for Threatened Species from Predation or Parasitism in Clark County	\$91,418
SNPLMA	R6	Information Gathering & Analysis	USDA-ADC	596	Distribution and Movements of Common Ravens in Relation to Desert Tortoise Habitat	\$326,140
SNPLMA	R4	Information Gathering & Analysis	USDA-ARS	349	Pollinator Ecology	\$208,611
SNPLMA	R6	Information Gathering & Analysis	USDA-ARS	583	Native Bee Pollinators: Status and Plant Relationships	\$261,696
S10	03-05	Implementation	USFS	234	Law Enforcement	\$517,010
S10	03-05	Information Gathering & Analysis	USFS	322	Seed Collection of Rare and Native Species	\$565,970
S10	03-05	Information Gathering & Analysis	USFS	322A	Seed Collection of Rare and Native Species	\$48,960
S10	05-07	Implementation	USFS	504	Resource Protection Law Enforcement	\$544,919
SNPLMA	R4	Planning	USFS	196A	Spring Mountain National Recreation Area Landscape Assessment	\$679,082
SNPLMA	R4	Information Gathering & Analysis	USFS	200	Inventory and Monitoring of Rare Plant Species Spring Mountain National Recreation Area	\$90,513
SNPLMA	R4	Information Gathering & Analysis	USFS	344A	Spring Mountains Ecological Site Inventory Phase II	\$88,500
SNPLMA	R4	Information Gathering & Analysis	USFS	388	Bat Inventories within the Spring Mountains	\$44,000
SNPLMA	R4	Information Gathering & Analysis	USFS	390	All Bird Monitoring Program in Clark County	\$88,300
SNPLMA	R4	Information Gathering & Analysis	USFS	392	Northern Goshawk Survey of the Spring Mountains	\$40,080
SNPLMA	R4	Information Gathering & Analysis	USFS	394	Butterfly Monitoring in the Spring Mountains	\$11,000
S10	05-07	Implementation	USFS-SMNRA	490	Bristle Cone Habitat Protection for MSHCP Covered Species on the Spring Mountains National Recreation Area	\$83,780
SNPLMA	R4	Planning	USFS-SMNRA	196	Spring Mountain National Recreation Area Landscape Assessment	\$2,231,036
SNPLMA	R6	Implementation	USFS-SMNRA	486	Annual Inspection and Maintenance of Riparian Protective Fencing within the Spring Mountains National Recreation Area	\$204,045

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	488	Monitoring of Northern Goshawks and Owls within the Spring Mountains National Recreation Area	\$31,307
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	515	Inventory for Covered Plant Species in the Spring Mountains National Recreation Area and adjacent lands.	\$282,426
SNPLMA	R6	Operations	USFS-SMNRA	531	Forest Service GIS Support of MSHCP applications	\$24,300
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	534	Monitoring Rare Plant Species on the Spring Mountains NRA	\$179,396
SNPLMA	R6	Information Gathering & Analysis	USFWS	585A	Desert Tortoise Monitoring	\$1,372,218
SNPLMA	R6	Operations	USFWS	593	U.S. Fish and Wildlife Service GIS Support, Data Management and Coordination	\$90,100
SNPLMA	R6	Implementation	USFWS	595	Establishment of Rana Onca Population in a Created Aquatic Habitat	\$200,195
S10	05-07	Information Gathering & Analysis	USGS	584	Distribution of Kit Foxes (<i>Vulpes macrotis</i>) in Clark County, Nevada	\$286,400
SNPLMA	R4	Information Gathering & Analysis	USGS	1010	USGS AMST Member - Medica	\$45,000
SNPLMA	R6	Information Gathering & Analysis	USGS	551	Effectiveness Monitoring of Fuel Management Treatments in the Spring Mountains National Recreation Area	\$321,501
SNPLMA	R6	Information Gathering & Analysis	USGS	552	Effectiveness Monitoring of Spring-fed Wetlands and Riparian Restoration Treatments	\$899,959
SNPLMA	R6	Information Gathering & Analysis	USGS	580	Long-term Conservation Strategy for Palmer's Chipmunk	\$276,447
SNPLMA	R6	Information Gathering & Analysis	USGS	582	Population Status and Reproductive Ecology of the Western Burrowing Owl	\$408,232

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FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
S07	05-07	Implementation	American Fence	562B	Fencing Materials	\$123,970
S07	05-07	Implementation	CC	563	New Fencing Projects	\$80,000
S07	05-07	Implementation	CC	564	Fencing Monitoring and Maintenance Projects	\$1,500,000
S07	05-07	Implementation	NDF	562A	Fencing	\$200,000
S07	03-05	Implementation	NPS	255	Burro Removal at Lake Mead National Recreation Area	\$34,500
S07	05-07	Implementation	PIC	562D	Public Outreach for the DCP, Fencing	\$137,500
S07	03-05	Information Gathering & Analysis	UNR-BRRC	248	Desert Tortoise Epidemiology	\$657,500
S07	03-05	Information Gathering & Analysis	UNR-BRRC	249	Development of Range-wide Desert Tortoise Monitoring Training Program	\$161,000
S07	03-05	Information Gathering & Analysis	UNR-BRRC	257	Increasing Effectiveness and Economy in Density Monitoring of the Desert Tortoise	\$312,000
S07	03-05	Information Gathering & Analysis	UNR-BRRC	264	Techniques for Monitoring Desert Tortoise Juvenile Recruitment	\$313,000
S07	03-05	Operations	SNEI	251-2	Clark County Desert Tortoise Transfer and Holding Facility	\$79,188
S07	03-05	Operations	SNEI	329-2	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$19,312
S07	05-07	Implementation	CC	562	Retro Fencing Projects	\$792,000
S07	05-07	Implementation	NPS	492	Burro Capture and Removal	\$34,500
S07	05-07	Implementation	USDA-ADC	598-2	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384
S10	01-03	Information Gathering & Analysis	LVSP	101	Las Vegas Bearpoppy Research, Buckwheat Salvage Study, Soil Studies, Germination Trails	\$50,000
S10	03-05	Implementation	Moapa Band of Piutes	103	Control of Russian Knapweed	\$40,000
S10	03-05	Implementation	NPS	233	Law Enforcement	\$271,990
S10	03-05	Implementation	NPS	272	Plant Material Production	\$51,750
S10	03-05	Implementation	SNWA	345	Habitat Enhancement in the LV Wash	\$73,500
S10	03-05	Implementation	USFS	234	Law Enforcement	\$517,010
S10	03-05	Information Gathering & Analysis	USFS	322	Seed Collection of Rare and Native Species	\$565,970
S10	03-05	Information Gathering & Analysis	USFS	322A	Seed Collection of Rare and Native Species	\$48,960
S10	03-05	Operations	SNEI	251-1	Clark County Desert Tortoise Transfer and Holding Facility	\$402,867
S10	03-05	Operations	SNEI	329-1	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$72,389

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
S10	03-05	Operations	SNEI	336	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$98,202
S10	05-07	Implementation	BLM	496	Law Enforcement	\$672,000
S10	05-07	Implementation	BLM	500	Restoration in Desert Tortoise Critical Habitat	\$353,131
S10	05-07	Implementation	CC	558	Pie Core Programs: Rural Outreach, Community Participation, and Public Outreach	\$110,000
S10	05-07	Implementation	CC	560	Mojave Max Emergence Contest	\$180,000
S10	05-07	Implementation	CC	DTHABITAT	Desert Tortoise Habitat at Government Center	\$141,000
S10	05-07	Implementation	NPS	495	Resource Protection and Law Enforcement at the Lake Mead NRA	\$416,530
S10	05-07	Implementation	NPS	533	Sahara Mustard Control in Rare Plant Habitats	\$150,566
S10	05-07	Implementation	NPS	573	Spring-fed Wetlands and Riparian Restoration	\$391,575
S10	05-07	Implementation	Oliver, Robert	512	Law Enforcement for the Boulder City Conservation Easement	\$149,900
S10	05-07	Implementation	Shonkwiler	560A	Mojave Max Emergence Contest	\$135,000
S10	05-07	Implementation	USDA-ADC	598-1	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384
S10	05-07	Implementation	USFS	504	Resource Protection Law Enforcement	\$544,919
S10	05-07	Implementation	USFS-SMNRA	490	Bristle Cone Habitat Protection for MSHCP Covered Species on the Spring Mountains National Recreation Area	\$83,780
S10	05-07	Information Gathering & Analysis	USGS	584	Distribution of Kit Foxes (<i>Vulpes macrotis</i>) in Clark County, Nevada	\$286,400
S10	05-07	Operations	Buschelman, Michael	BUSCHELMAN	Surface Water Rights Consulting	\$30,500
S10	05-07	Operations	CC	544	Desert Conservation Program Administration	\$581,150
S10	05-07	Operations	NDF	547	Forester II Position	\$135,430
S10	05-07	Operations	Selzer, Paul	615	Consulting Services	\$250,000
S10	05-07	Operations	Siguenza, Ruth	544A	Facilitation Services for the Clark County Desert Conservation Program	\$130,000
S10	05-07	Operations	SNEI	1007	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$382,298
S10	05-07	Planning	CC	546	Boulder City Conservation Easement Plan	\$30,000
S10	05-07	Planning	CC	548	Conservation Management Strategy Development	\$650,000
S10	05-07	Planning	The Shipley Group	548A	Desert Wildlife Management Area Conservation Management Strategy Development	\$210,000
S10	07-09	Implementation	Oliver, Robert	714	BCCE Resource Protection	\$183,280
S10	99-01	Information Gathering & Analysis	UNLV	102	Desert Pocket Mouse Study	\$45,000

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Implementation	BLM	347	Development of Designated Roads Network in the Northeast Desert Tortoise Desert Wildlife Management Areas	\$148,000
SNPLMA	R4	Implementation	Partners In Conservation (PIC)	319	OHV Videos	\$99,700
SNPLMA	R4	Information Gathering & Analysis	BLM	344	Ecological Site Inventory for the Spring Mountains Ecosystem	\$885,170
SNPLMA	R4	Information Gathering & Analysis	BLM	361	Evaluating Impacts of Cattle Grazing on Vegetation and Vegetative Recovery Following Removal of Cattle Grazing	\$160,200
SNPLMA	R4	Information Gathering & Analysis	NPS	178	Songbird Monitoring as a tool for Guiding Habitat Restoration at Lake Mead NRA	\$118,000
SNPLMA	R4	Information Gathering & Analysis	NPS	179	Relict Leopard Frog Monitoring and Management	\$182,850
SNPLMA	R4	Information Gathering & Analysis	NPS	229	Wildlife Inventory Monitoring and Management	\$239,108
SNPLMA	R4	Information Gathering & Analysis	NPS	235	Lake Mead National Recreation Area Data Collection and Analysis	\$221,950
SNPLMA	R4	Information Gathering & Analysis	NPS	314	Lake Mead National Recreation Area Monitoring of Ground Disturbance; Illegal Tracks and Traces	\$50,600
SNPLMA	R4	Information Gathering & Analysis	NPS	363	Lake Mead National Recreation Area Vegetation Monitoring Program: Rare Plants, Plant Poaching, and Weed Management Programs	\$611,270
SNPLMA	R4	Information Gathering & Analysis	SNWA	266	Investigation of Bat Species Diversity and Distribution along the LV Wash	\$35,797
SNPLMA	R4	Information Gathering & Analysis	SNWA	286	Investigation of Amphibian Species Diversity and Distribution along the Las Vegas Wash	\$27,810
SNPLMA	R4	Information Gathering & Analysis	UNLV	230	Temperature Acclimation and Oxygen Consumption Rana Onca Larvae (with National Park Service)	\$83,450
SNPLMA	R4	Information Gathering & Analysis	UNLV	232	Lake Mead National Recreation Area Evaluation of Impact of Vegetation Encroachment on Relict Leopard Frog Populations (with National Park Service)	\$145,526
SNPLMA	R4	Information Gathering & Analysis	UNLV	294	The effects of Athel (Tamarix aphylla) on Riparian Habitats at the Lake Mead National Recreation Area (with National Park Service)	\$64,500
SNPLMA	R4	Information Gathering & Analysis	UNLV	305	Factors Affecting Rarity of the Las Vegas Bearpoppy	\$55,500
SNPLMA	R4	Information Gathering & Analysis	UNLV	331	Lake Mead National Recreation Area Evaluation of Non-Vascular Plants of Concern in Clark County (with National Park Service)	\$30,340

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Information Gathering & Analysis	UNLV	1006	Floristic Survey of the Black Mountains	\$26,570
SNPLMA	R4	Information Gathering & Analysis	UNR	252	Baseline Density Monitoring: Southern NV Desert Wildlife Management Area Populations of Desert Tortoise	\$1,377,000
SNPLMA	R4	Information Gathering & Analysis	UNR	289	Translocation Long-Term Monitoring, Desert Tortoise Density Evaluation and Establishment of New LSTs	\$161,400
SNPLMA	R4	Information Gathering & Analysis	UNR	369	Red Rocks to the Summit	\$447,600
SNPLMA	R4	Information Gathering & Analysis	UNR	387	Ecosystem Indicators	\$582,100
SNPLMA	R4	Information Gathering & Analysis	USDA-ADC	332	Assist in Development of Wildlife Damage Management for Threatened Species from Predation or Parasitism in Clark County	\$91,418
SNPLMA	R4	Information Gathering & Analysis	USDA-ARS	349	Pollinator Ecology	\$208,611
SNPLMA	R4	Information Gathering & Analysis	USFS	200	Inventory and Monitoring of Rare Plant Species Spring Mountain National Recreation Area	\$90,513
SNPLMA	R4	Information Gathering & Analysis	USFS	344A	Spring Mountains Ecological Site Inventory Phase II	\$88,500
SNPLMA	R4	Information Gathering & Analysis	USFS	388	Bat Inventories within the Spring Mountains	\$44,000
SNPLMA	R4	Information Gathering & Analysis	USFS	390	All Bird Monitoring Program in Clark County	\$88,300
SNPLMA	R4	Information Gathering & Analysis	USFS	392	Northern Goshawk Survey of the Spring Mountains	\$40,080
SNPLMA	R4	Information Gathering & Analysis	USFS	394	Butterfly Monitoring in the Spring Mountains	\$11,000
SNPLMA	R4	Information Gathering & Analysis	USGS	1010	USGS AMST Member - Medica	\$45,000
SNPLMA	R4	Operations	BLM	353	Geographic Information Systems Support	\$390,600
SNPLMA	R4	Operations	CC	439	MSHCP Adaptive Management Program Coordination, Science Advice and Effectiveness Monitoring Strategy	\$1,593,015
SNPLMA	R4	Operations	CC	544P	Desert Conservation Program Administration	\$1,743,540
SNPLMA	R4	Operations	Partners In Conservation (PIC)	256	GPS Roads and Mapping	\$297,000
SNPLMA	R4	Operations	TNC	437	Muddy River Interim Management Plan Development and Partner Coordination	\$177,147
SNPLMA	R4	Operations	UNR-BRRC	321	Adaptive Management Program	\$925,355
SNPLMA	R4	Planning	BLM	350	Virgin River Conservation Management Strategy	\$213,150

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Planning	BLM	367	Integrated Mesquite-Acacia Conservation Management Strategy Plan	\$128,100
SNPLMA	R4	Planning	CC	338	Cooperative Weed Management Program Development	\$126,500
SNPLMA	R4	Planning	CC	377	Public Information and Education - Mojave Max Education Project	\$260,000
SNPLMA	R4	Planning	CC	380	CMS Development	\$500,000
SNPLMA	R4	Planning	CC	393	Desert NWR/Developed Community Interface Conservation Resource Plan	\$10,000
SNPLMA	R4	Planning	David Bert	377A	Public Information and Education - Mojave Max Education Project	\$100,000
SNPLMA	R4	Planning	ENTRIX	350A	Virgin River Conservation Assessment	\$1,229,600
SNPLMA	R4	Planning	NPS	350C	Virgin River Conservation Strategy (with Bureau of Land Management)	\$87,000
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350B	Virgin River Conservation Partnership Facilitator	\$101,000
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350D	Virgin River Conservation Partnership Facilitator	\$90,000
SNPLMA	R4	Planning	Partners In Conservation (PIC)	348	Desert Conservation Week Pilot Program	\$20,500
SNPLMA	R4	Planning	RRCIA	377B	Public Information and Education - Mojave Max Education Project	\$100,000
SNPLMA	R4	Planning	The Shipley Group	380A	Desert Wildlife Management Areas Conservation Management Strategies (contracted with The Shipley Group) 4 DWMAS	\$210,000
SNPLMA	R4	Planning	TNC	330	Low Elevation Rare Plant Conservation Management Strategy	\$113,100
SNPLMA	R4	Planning	USFS	196A	Spring Mountain National Recreation Area Landscape Assessment	\$679,082
SNPLMA	R4	Planning	USFS-SMNRA	196	Spring Mountain National Recreation Area Landscape Assessment	\$2,231,036
SNPLMA	R6	Implementation	CC	553	Media and Outreach Development	\$264,000
SNPLMA	R6	Implementation	CC	559	Mojave Max Emergence Contest Partnership and Partnership Development	\$440,000
SNPLMA	R6	Implementation	PIC	577	PIC and Volunteer Support for BLM Roads Monitoring Project	\$322,000
SNPLMA	R6	Implementation	RRCIA	559A	Mojave Max Emergence Contest Partnership and Partnership Development	\$400,000
SNPLMA	R6	Implementation	USFS-SMNRA	486	Annual Inspection and Maintenance of Riparian Protective Fencing within the Spring Mountains National Recreation Area	\$204,045
SNPLMA	R6	Implementation	USFWS	595	Establishment of Rana Onca Population in a Created Aquatic Habitat	\$200,195
SNPLMA	R6	Information Gathering & Analysis	BLM	497	Rare Plant Inventories	\$376,688
SNPLMA	R6	Information Gathering & Analysis	BLM	502	Sediment Transport of Source Materials to White-margined Penstemon	\$1,192,522

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R6	Information Gathering & Analysis	BLM	503	Roads Monitoring on BLM Lands	\$432,589
SNPLMA	R6	Information Gathering & Analysis	CC	605	Volunteer Resource Stewardship Pilot Program	\$250,000
SNPLMA	R6	Information Gathering & Analysis	CC	606	Buckwheat and Bearpoppy Inventory	\$50,000
SNPLMA	R6	Information Gathering & Analysis	CC	607	Rick Analysis	\$100,000
SNPLMA	R6	Information Gathering & Analysis	CC	608	Effectiveness Monitoring for Conservation Actions	\$500,000
SNPLMA	R6	Information Gathering & Analysis	CC	609	Adaptive Management of Information Gathering and Analysis Projects	\$550,000
SNPLMA	R6	Information Gathering & Analysis	CC	609A	Historical and Current Assessment of Six Covered and Three Evaluation Bird Species	\$133,500
SNPLMA	R6	Information Gathering & Analysis	GBBO	581	Developing Habitat Models and Monitoring Techniques for Nine Rare Bird Species of the Clark County MSHCP	\$719,940
SNPLMA	R6	Information Gathering & Analysis	NDOW	549	Peregrine Falcon Monitoring in Clark County	\$23,283
SNPLMA	R6	Information Gathering & Analysis	NDOW	568	Long-term Conservation Strategy for Palmer's Chipmunk	\$104,431
SNPLMA	R6	Information Gathering & Analysis	Nevada System of Higher Education (NSHE)	502A	Sediment Transport of Source Materials to White-margined Penstemon Habitat	\$800,553
SNPLMA	R6	Information Gathering & Analysis	NPS	475	Peregrine Falcon Monitoring at Lake Mead NRA	\$30,120
SNPLMA	R6	Information Gathering & Analysis	NPS	476	Relict Leopard Frog Monitoring and Management	\$333,000
SNPLMA	R6	Information Gathering & Analysis	NPS	526	Monitoring of Illegal Ground Disturbance in Response to Management Actions	\$105,287
SNPLMA	R6	Information Gathering & Analysis	NPS	529	Monitoring and Road Conditions and Signs	\$114,737
SNPLMA	R6	Information Gathering & Analysis	NPS	532	Threats, Research and Monitoring on the Invasive Species Sahara Mustard	\$94,554
SNPLMA	R6	Information Gathering & Analysis	NPS	535	Inventory, Research, and Monitoring for Covered Plant Species	\$347,054
SNPLMA	R6	Information Gathering & Analysis	NPS	536	Inventory, Research, and Monitoring of Evaluation and Watch Plant Species on Lake Mead NRA and Adjacent Lands.	\$163,277

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SNPLMA	R6	Information Gathering & Analysis	NPS	537	Interagency Week Sentry Project	\$905,688
SNPLMA	R6	Information Gathering & Analysis	NPS	540	Bald Eagle Monitoring	\$21,589
SNPLMA	R6	Information Gathering & Analysis	NPS	542	Historical and Current Assessment of Six Covered and Three Evaluation Bird Species	\$219,903
SNPLMA	R6	Information Gathering & Analysis	NPS	545	Desert Tortoise Monitoring and Management at Lake Mead NRA	\$37,609
SNPLMA	R6	Information Gathering & Analysis	Smithsonian	602	Impact of Nutritional Stress on URTD and Immune Function in the Desert Tortoise	\$698,480
SNPLMA	R6	Information Gathering & Analysis	TNC	572	Effectiveness Monitoring for Saltcedar and Knapweed Control on the Upper Muddy River Floodplain	\$540,902
SNPLMA	R6	Information Gathering & Analysis	UNLV	575	Delineation of Distribution, Evaluation of Relatedness, and Assessment of Connectivity for Leopard from Population within the Management Zone of the Relict Leopard Frog.	\$147,836
SNPLMA	R6	Information Gathering & Analysis	UNLV	597	Evaluation and Experimental Habitat Manipulations of Relict Leopard Frog Populations	\$87,267
SNPLMA	R6	Information Gathering & Analysis	UNR	570	Butterfly Monitoring in the Spring Mountains	\$115,700
SNPLMA	R6	Information Gathering & Analysis	UNR	585	Desert Tortoise Monitoring	\$1,217,072
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	567	Epidemiology of Desert Tortoise	\$779,726
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	569	Assessment of Listed and Other species of Concern at the Urban Edge	\$550,128
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	576	Movements and Barriers to Movement for Desert Tortoise	\$719,210
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	578	Ecosystem Indicators: Change Indicators	\$2,752,306
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	588	The Distribution and Abundance of Upland Amphibians and Reptiles	\$1,029,070
SNPLMA	R6	Information Gathering & Analysis	USDA-ADC	596	Distribution and Movements of Common Ravens in Relation to Desert Tortoise Habitat	\$326,140
SNPLMA	R6	Information Gathering & Analysis	USDA-ARS	583	Native Bee Pollinators: Status and Plant Relationships	\$261,696
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	488	Monitoring of Northern Goshawks and Owls within the Spring Mountains National Recreation Area	\$31,307
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	515	Inventory for Covered Plant Species in the Spring Mountains National Recreation Area and adjacent lands.	\$282,426

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	534	Monitoring Rare Plant Species on the Spring Mountains NRA	\$179,396
SNPLMA	R6	Information Gathering & Analysis	USFWS	585A	Desert Tortoise Monitoring	\$1,372,218
SNPLMA	R6	Information Gathering & Analysis	USGS	551	Effectiveness Monitoring of Fuel Management Treatments in the Spring Mountains National Recreation Area	\$321,501
SNPLMA	R6	Information Gathering & Analysis	USGS	552	Effectiveness Monitoring of Spring-fed Wetlands and Riparian Restoration Treatments	\$899,959
SNPLMA	R6	Information Gathering & Analysis	USGS	580	Long-term Conservation Strategy for Palmer's Chipmunk	\$276,447
SNPLMA	R6	Information Gathering & Analysis	USGS	582	Population Status and Reproductive Ecology of the Western Burrowing Owl	\$408,232
SNPLMA	R6	Operations	BLM	498	GIS Support	\$645,488
SNPLMA	R6	Operations	CC	574	Adaptive Management Program	\$2,950,335
SNPLMA	R6	Operations	DRI	574A	Science Advisor	\$1,700,000
SNPLMA	R6	Operations	Natural Heritage Program	557	Sensitive Species Data Management	\$81,500
SNPLMA	R6	Operations	NPS	525	Lake Mead GIS and Data Management Support	\$312,788
SNPLMA	R6	Operations	TNC	561	Muddy River Property Management Acquisition and Partner Coordination	\$260,660
SNPLMA	R6	Operations	USFS-SMNRA	531	Forest Service GIS Support of MSHCP applications	\$24,300
SNPLMA	R6	Operations	USFWS	593	U.S. Fish and Wildlife Service GIS Support, Data Management and Coordination	\$90,100
SNPLMA	R6	Planning	BLM	499	Support of the Virgin River Conservation Management Strategy	\$256,623

INDEX TABLE SORTED BY PROJECT CATEGORY

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
S07	05-07	Implementation	American Fence	562B	Fencing Materials	\$123,970
S07	05-07	Implementation	CC	563	New Fencing Projects	\$80,000
S07	05-07	Implementation	CC	564	Fencing Monitoring and Maintenance Projects	\$1,500,000
S07	05-07	Implementation	NDF	562A	Fencing	\$200,000
S07	03-05	Implementation	NPS	255	Burro Removal at Lake Mead National Recreation Area	\$34,500
S07	05-07	Implementation	PIC	562D	Public Outreach for the DCP, Fencing	\$137,500
S07	05-07	Implementation	CC	562	Retro Fencing Projects	\$792,000
S07	05-07	Implementation	NPS	492	Burro Capture and Removal	\$34,500
S07	05-07	Implementation	USDA-ADC	598-2	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384
S10	03-05	Implementation	Moapa Band of Piutes	103	Control of Russian Knapweed	\$40,000
S10	03-05	Implementation	NPS	233	Law Enforcement	\$271,990
S10	03-05	Implementation	NPS	272	Plant Material Production	\$51,750
S10	03-05	Implementation	SNWA	345	Habitat Enhancement in the LV Wash	\$73,500
S10	03-05	Implementation	USFS	234	Law Enforcement	\$517,010
S10	05-07	Implementation	BLM	496	Law Enforcement	\$672,000
S10	05-07	Implementation	BLM	500	Restoration in Desert Tortoise Critical Habitat	\$353,131
S10	05-07	Implementation	CC	558	Pie Core Programs: Rural Outreach, Community Participation, and Public Outreach	\$110,000
S10	05-07	Implementation	CC	560	Mojave Max Emergence Contest	\$180,000
S10	05-07	Implementation	CC	DTHABITAT	Desert Tortoise Habitat at Government Center	\$141,000
S10	05-07	Implementation	NPS	495	Resource Protection and Law Enforcement at the Lake Mead NRA	\$416,530
S10	05-07	Implementation	NPS	533	Sahara Mustard Control in Rare Plant Habitats	\$150,566
S10	05-07	Implementation	NPS	573	Spring-fed Wetlands and Riparian Restoration	\$391,575
S10	05-07	Implementation	Oliver, Robert	512	Law Enforcement for the Boulder City Conservation Easement	\$149,900
S10	05-07	Implementation	Shonkwiler	560A	Mojave Max Emergence Contest	\$135,000
S10	05-07	Implementation	USDA-ADC	598-1	Provide Assistance in the Development and Application of Wildlife Damage Management for the Protection of Identified Threatened and/or Endangered Species from Predation or Parasitism within Clark County	\$46,384
S10	05-07	Implementation	USFS	504	Resource Protection Law Enforcement	\$544,919
S10	05-07	Implementation	USFS-SMNRA	490	Bristle Cone Habitat Protection for MSHCP Covered Species on the Spring Mountains National Recreation Area	\$83,780
S10	07-09	Implementation	Oliver, Robert	714	BCCE Resource Protection	\$183,280

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Implementation	BLM	347	Development of Designated Roads Network in the Northeast Desert Tortoise Desert Wildlife Management Areas	\$148,000
SNPLMA	R4	Implementation	Partners In Conservation (PIC)	319	OHV Videos	\$99,700
SNPLMA	R6	Implementation	CC	553	Media and Outreach Development	\$264,000
SNPLMA	R6	Implementation	CC	559	Mojave Max Emergence Contest Partnership and Partnership Development	\$440,000
SNPLMA	R6	Implementation	PIC	577	PIC and Volunteer Support for BLM Roads Monitoring Project	\$322,000
SNPLMA	R6	Implementation	RRCIA	559A	Mojave Max Emergence Contest Partnership and Partnership Development	\$400,000
SNPLMA	R6	Implementation	USFS-SMNA	486	Annual Inspection and Maintenance of Riparian Protective Fencing within the Spring Mountains National Recreation Area	\$204,045
SNPLMA	R6	Implementation	USFWS	595	Establishment of Rana Onca Population in a Created Aquatic Habitat	\$200,195
S07	03-05	Information Gathering & Analysis	UNR-BRRC	248	Desert Tortoise Epidemiology	\$657,500
S07	03-05	Information Gathering & Analysis	UNR-BRRC	249	Development of Range-wide Desert Tortoise Monitoring Training Program	\$161,000
S07	03-05	Information Gathering & Analysis	UNR-BRRC	257	Increasing Effectiveness and Economy in Density Monitoring of the Desert Tortoise	\$312,000
S07	03-05	Information Gathering & Analysis	UNR-BRRC	264	Techniques for Monitoring Desert Tortoise Juvenile Recruitment	\$313,000
S10	01-03	Information Gathering & Analysis	LVSP	101	Las Vegas Bearpoppy Research, Buckwheat Salvage Study, Soil Studies, Germination Trails	\$50,000
S10	03-05	Information Gathering & Analysis	USFS	322	Seed Collection of Rare and Native Species	\$565,970
S10	03-05	Information Gathering & Analysis	USFS	322A	Seed Collection of Rare and Native Species	\$48,960
S10	05-07	Information Gathering & Analysis	USGS	584	Distribution of Kit Foxes (<i>Vulpes macrotis</i>) in Clark County, Nevada	\$286,400
S10	99-01	Information Gathering & Analysis	UNLV	102	Desert Pocket Mouse Study	\$45,000
SNPLMA	R4	Information Gathering & Analysis	BLM	344	Ecological Site Inventory for the Spring Mountains Ecosystem	\$885,170
SNPLMA	R4	Information Gathering & Analysis	BLM	361	Evaluating Impacts of Cattle Grazing on Vegetation and Vegetative Recovery Following Removal of Cattle Grazing	\$160,200
SNPLMA	R4	Information Gathering & Analysis	NPS	178	Songbird Monitoring as a tool for Guiding Habitat Restoration at Lake Mead NRA	\$118,000

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Information Gathering & Analysis	NPS	179	Relict Leopard Frog Monitoring and Management	\$182,850
SNPLMA	R4	Information Gathering & Analysis	NPS	229	Wildlife Inventory Monitoring and Management	\$239,108
SNPLMA	R4	Information Gathering & Analysis	NPS	235	Lake Mead National Recreation Area Data Collection and Analysis	\$221,950
SNPLMA	R4	Information Gathering & Analysis	NPS	314	Lake Mead National Recreation Area Monitoring of Ground Disturbance; Illegal Tracks and Traces	\$50,600
SNPLMA	R4	Information Gathering & Analysis	NPS	363	Lake Mead National Recreation Area Vegetation Monitoring Program: Rare Plants, Plant Poaching, and Weed Management Programs	\$611,270
SNPLMA	R4	Information Gathering & Analysis	SNWA	266	Investigation of Bat Species Diversity and Distribution along the LV Wash	\$35,797
SNPLMA	R4	Information Gathering & Analysis	SNWA	286	Investigation of Amphibian Species Diversity and Distribution along the Las Vegas Wash	\$27,810
SNPLMA	R4	Information Gathering & Analysis	UNLV	230	Temperature Acclimation and Oxygen Consumption Rana Onca Larvae (with National Park Service)	\$83,450
SNPLMA	R4	Information Gathering & Analysis	UNLV	232	Lake Mead National Recreation Area Evaluation of Impact of Vegetation Encroachment on Relict Leopard Frog Populations (with National Park Service)	\$145,526
SNPLMA	R4	Information Gathering & Analysis	UNLV	294	The effects of Athel (Tamarix aphylla) on Riparian Habitats at the Lake Mead National Recreation Area (with National Park Service)	\$64,500
SNPLMA	R4	Information Gathering & Analysis	UNLV	305	Factors Affecting Rarity of the Las Vegas Bearpoppy	\$55,500
SNPLMA	R4	Information Gathering & Analysis	UNLV	331	Lake Mead National Recreation Area Evaluation of Non-Vascular Plants of Concern in Clark County (with National Park Service)	\$30,340
SNPLMA	R4	Information Gathering & Analysis	UNLV	1006	Floristic Survey of the Black Mountains	\$26,570
SNPLMA	R4	Information Gathering & Analysis	UNR	252	Baseline Density Monitoring: Southern NV Desert Wildlife Management Area Populations of Desert Tortoise	\$1,377,000
SNPLMA	R4	Information Gathering & Analysis	UNR	289	Translocation Long-Term Monitoring, Desert Tortoise Density Evaluation and Establishment of New LSTs	\$161,400
SNPLMA	R4	Information Gathering & Analysis	UNR	369	Red Rocks to the Summit	\$447,600
SNPLMA	R4	Information Gathering & Analysis	UNR	387	Ecosystem Indicators	\$582,100
SNPLMA	R4	Information Gathering & Analysis	USDA-ADC	332	Assist in Development of Wildlife Damage Management for Threatened Species from Predation or Parasitism in Clark County	\$91,418

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Information Gathering & Analysis	USDA-ARS	349	Pollinator Ecology	\$208,611
SNPLMA	R4	Information Gathering & Analysis	USFS	200	Inventory and Monitoring of Rare Plant Species Spring Mountain National Recreation Area	\$90,513
SNPLMA	R4	Information Gathering & Analysis	USFS	344A	Spring Mountains Ecological Site Inventory Phase II	\$88,500
SNPLMA	R4	Information Gathering & Analysis	USFS	388	Bat Inventories within the Spring Mountains	\$44,000
SNPLMA	R4	Information Gathering & Analysis	USFS	390	All Bird Monitoring Program in Clark County	\$88,300
SNPLMA	R4	Information Gathering & Analysis	USFS	392	Northern Goshawk Survey of the Spring Mountains	\$40,080
SNPLMA	R4	Information Gathering & Analysis	USFS	394	Butterfly Monitoring in the Spring Mountains	\$11,000
SNPLMA	R4	Information Gathering & Analysis	USGS	1010	USGS AMST Member - Medica	\$45,000
SNPLMA	R6	Information Gathering & Analysis	BLM	497	Rare Plant Inventories	\$376,688
SNPLMA	R6	Information Gathering & Analysis	BLM	502	Sediment Transport of Source Materials to White-margined Penstemon	\$1,192,522
SNPLMA	R6	Information Gathering & Analysis	BLM	503	Roads Monitoring on BLM Lands	\$432,589
SNPLMA	R6	Information Gathering & Analysis	CC	605	Volunteer Resource Stewardship Pilot Program	\$250,000
SNPLMA	R6	Information Gathering & Analysis	CC	606	Buckwheat and Bearpoppy Inventory	\$50,000
SNPLMA	R6	Information Gathering & Analysis	CC	607	Rick Analysis	\$100,000
SNPLMA	R6	Information Gathering & Analysis	CC	608	Effectiveness Monitoring for Conservation Actions	\$500,000
SNPLMA	R6	Information Gathering & Analysis	CC	609	Adaptive Management of Information Gathering and Analysis Projects	\$550,000
SNPLMA	R6	Information Gathering & Analysis	CC	609A	Historical and Current Assessment of Six Covered and Three Evaluation Bird Species	\$133,500
SNPLMA	R6	Information Gathering & Analysis	GBBO	581	Developing Habitat Models and Monitoring Techniques for Nine Rare Bird Species of the Clark County MSHCP	\$719,940
SNPLMA	R6	Information Gathering & Analysis	NDOW	549	Peregrine Falcon Monitoring in Clark County	\$23,283

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SNPLMA	R6	Information Gathering & Analysis	NDOW	568	Long-term Conservation Strategy for Palmer's Chipmunk	\$104,431
SNPLMA	R6	Information Gathering & Analysis	Nevada System of Higher Education (NSHE)	502A	Sediment Transport of Source Materials to White-margined Penstemon Habitat	\$800,553
SNPLMA	R6	Information Gathering & Analysis	NPS	475	Peregrine Falcon Monitoring at Lake Mead NRA	\$30,120
SNPLMA	R6	Information Gathering & Analysis	NPS	476	Relict Leopard Frog Monitoring and Management	\$333,000
SNPLMA	R6	Information Gathering & Analysis	NPS	526	Monitoring of Illegal Ground Disturbance in Response to Management Actions	\$105,287
SNPLMA	R6	Information Gathering & Analysis	NPS	529	Monitoring and Road Conditions and Signs	\$114,737
SNPLMA	R6	Information Gathering & Analysis	NPS	532	Threats, Research and Monitoring on the Invasive Species Sahara Mustard	\$94,554
SNPLMA	R6	Information Gathering & Analysis	NPS	535	Inventory, Research, and Monitoring for Covered Plant Species	\$347,054
SNPLMA	R6	Information Gathering & Analysis	NPS	536	Inventory, Research, and Monitoring of Evaluation and Watch Plant Species on Lake Mead NRA and Adjacent Lands.	\$163,277
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SNPLMA	R6	Information Gathering & Analysis	NPS	545	Desert Tortoise Monitoring and Management at Lake Mead NRA	\$37,609
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SNPLMA	R6	Information Gathering & Analysis	UNLV	575	Delineation of Distribution, Evaluation of Relatedness, and Assessment of Connectivity for Leopard from Population within the Management Zone of the Relict Leopard Frog.	\$147,836
SNPLMA	R6	Information Gathering & Analysis	UNLV	597	Evaluation and Experimental Habitat Manipulations of Relict Leopard Frog Populations	\$87,267
SNPLMA	R6	Information Gathering & Analysis	UNR	570	Butterfly Monitoring in the Spring Mountains	\$115,700

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SNPLMA	R6	Information Gathering & Analysis	UNR	585	Desert Tortoise Monitoring	\$1,217,072
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	567	Epidemiology of Desert Tortoise	\$779,726
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	569	Assessment of Listed and Other species of Concern at the Urban Edge	\$550,128
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	576	Movements and Barriers to Movement for Desert Tortoise	\$719,210
SNPLMA	R6	Information Gathering & Analysis	UNR-BRRC	578	Ecosystem Indicators: Change Indicators	\$2,752,306
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SNPLMA	R6	Information Gathering & Analysis	USDA-ADC	596	Distribution and Movements of Common Ravens in Relation to Desert Tortoise Habitat	\$326,140
SNPLMA	R6	Information Gathering & Analysis	USDA-ARS	583	Native Bee Pollinators: Status and Plant Relationships	\$261,696
SNPLMA	R6	Information Gathering & Analysis	USFS-SMNRA	488	Monitoring of Northern Goshawks and Owls within the Spring Mountains National Recreation Area	\$31,307
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SNPLMA	R6	Information Gathering & Analysis	USGS	551	Effectiveness Monitoring of Fuel Management Treatments in the Spring Mountains National Recreation Area	\$321,501
SNPLMA	R6	Information Gathering & Analysis	USGS	552	Effectiveness Monitoring of Spring-fed Wetlands and Riparian Restoration Treatments	\$899,959
SNPLMA	R6	Information Gathering & Analysis	USGS	580	Long-term Conservation Strategy for Palmer's Chipmunk	\$276,447
SNPLMA	R6	Information Gathering & Analysis	USGS	582	Population Status and Reproductive Ecology of the Western Burrowing Owl	\$408,232
S07	03-05	Operations	SNEI	251-2	Clark County Desert Tortoise Transfer and Holding Facility	\$79,188
S07	03-05	Operations	SNEI	329-2	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$19,312
S10	03-05	Operations	SNEI	251-1	Clark County Desert Tortoise Transfer and Holding Facility	\$402,867
S10	03-05	Operations	SNEI	329-1	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$72,389

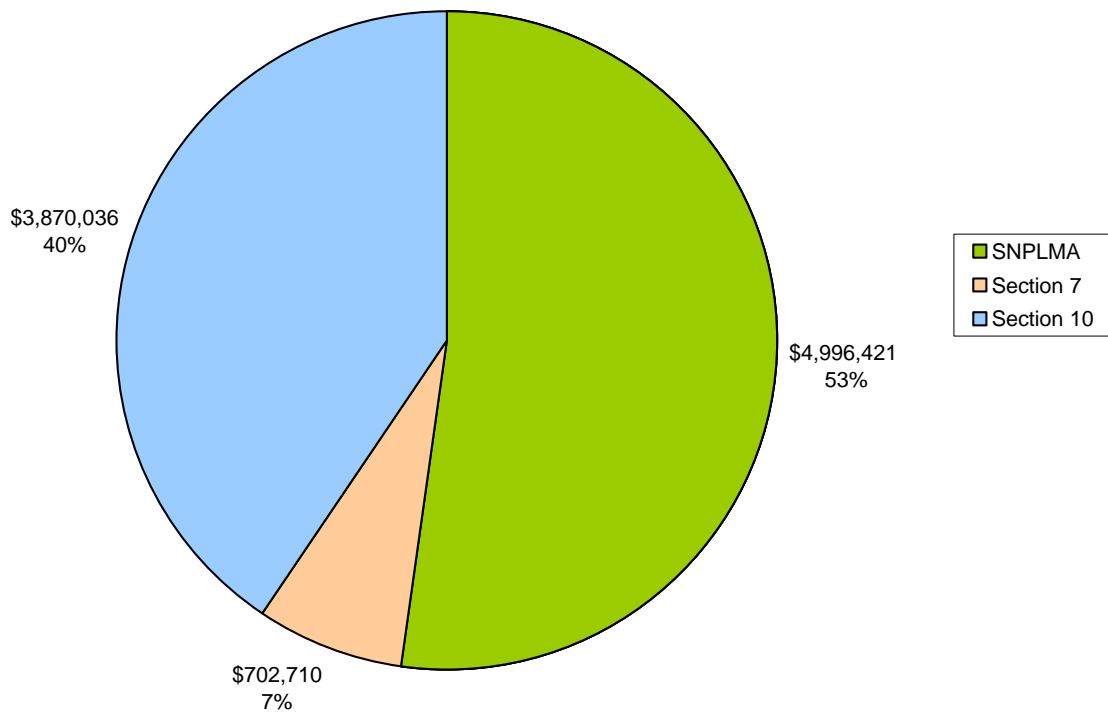
FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
S10	03-05	Operations	SNEI	336	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$98,202
S10	05-07	Operations	Buschelman, Michael	BUSCHELMAN	Surface Water Rights Consulting	\$30,500
S10	05-07	Operations	CC	544	Desert Conservation Program Administration	\$581,150
S10	05-07	Operations	NDF	547	Forester II Position	\$135,430
S10	05-07	Operations	Selzer, Paul	615	Consulting Services	\$250,000
S10	05-07	Operations	Siguenza, Ruth	544A	Facilitation Services for the Clark County Desert Conservation Program	\$130,000
S10	05-07	Operations	SNEI	1007	Desert Tortoise Transfer and Holding Facility & Desert Tortoise Translocation Program	\$382,298
SNPLMA	R4	Operations	BLM	353	Geographic Information Systems Support	\$390,600
SNPLMA	R4	Operations	CC	439	MSHCP Adaptive Management Program Coordination, Science Advice and Effectiveness Monitoring Strategy	\$1,593,015
SNPLMA	R4	Operations	CC	544P	Desert Conservation Program Administration	\$1,743,540
SNPLMA	R4	Operations	Partners In Conservation (PIC)	256	GPS Roads and Mapping	\$297,000
SNPLMA	R4	Operations	TNC	437	Muddy River Interim Management Plan Development and Partner Coordination	\$177,147
SNPLMA	R4	Operations	UNR-BRRC	321	Adaptive Management Program	\$925,355
SNPLMA	R6	Operations	BLM	498	GIS Support	\$645,488
SNPLMA	R6	Operations	CC	574	Adaptive Management Program	\$2,950,335
SNPLMA	R6	Operations	DRI	574A	Science Advisor	\$1,700,000
SNPLMA	R6	Operations	Natural Heritage Program	557	Sensitive Species Data Management	\$81,500
SNPLMA	R6	Operations	NPS	525	Lake Mead GIS and Data Management Support	\$312,788
SNPLMA	R6	Operations	TNC	561	Muddy River Property Management Acquisition and Partner Coordination	\$260,660
SNPLMA	R6	Operations	USFS-SMNRA	531	Forest Service GIS Support of MSHCP applications	\$24,300
SNPLMA	R6	Operations	USFWS	593	U.S. Fish and Wildlife Service GIS Support, Data Management and Coordination	\$90,100.00
S10	05-07	Planning	CC	546	Boulder City Conservation Easement Plan	\$30,000
S10	05-07	Planning	CC	548	Conservation Management Strategy Development	\$650,000
S10	05-07	Planning	The Shipley Group	548A	Desert Wildlife Management Area Conservation Management Strategy Development	\$210,000
SNPLMA	R4	Planning	BLM	350	Virgin River Conservation Management Strategy	\$213,150
SNPLMA	R4	Planning	BLM	367	Integrated Mesquite-Acacia Conservation Management Strategy Plan	\$128,100
SNPLMA	R4	Planning	CC	338	Cooperative Weed Management Program Development	\$126,500
SNPLMA	R4	Planning	CC	377	Public Information and Education - Mojave Max Education Project	\$260,000

FUNDING SOURCE	BN/ ROUND	PROJECT CATEGORY (Imp, Oper, Plan, or Info)	AGENCY	PROJECT NUMBER	PROJECT TITLE	AMOUNT AWARDED
SNPLMA	R4	Planning	CC	380	CMS Development	\$500,000
SNPLMA	R4	Planning	CC	393	Desert NWR/Developed Community Interface Conservation Resource Plan	\$10,000
SNPLMA	R4	Planning	David Bert	377A	Public Information and Education - Mojave Max Education Project	\$100,000
SNPLMA	R4	Planning	ENTRIX	350A	Virgin River Conservation Assessment	\$1,229,600
SNPLMA	R4	Planning	NPS	350C	Virgin River Conservation Strategy (with Bureau of Land Management)	\$87,000
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350B	Virgin River Conservation Partnership Facilitator	\$101,000
SNPLMA	R4	Planning	Outside Las Vegas Foundation	350D	Virgin River Conservation Partnership Facilitator	\$90,000
SNPLMA	R4	Planning	Partners In Conservation (PIC)	348	Desert Conservation Week Pilot Program	\$20,500
SNPLMA	R4	Planning	RRCIA	377B	Public Information and Education - Mojave Max Education Project	\$100,000
SNPLMA	R4	Planning	The Shipley Group	380A	Desert Wildlife Management Areas Conservation Management Strategies (contracted with The Shipley Group) 4 DWMAS	\$210,000
SNPLMA	R4	Planning	TNC	330	Low Elevation Rare Plant Conservation Management Strategy	\$113,100
SNPLMA	R4	Planning	USFS	196A	Spring Mountain National Recreation Area Landscape Assessment	\$679,082
SNPLMA	R4	Planning	USFS-SMNRA	196	Spring Mountain National Recreation Area Landscape Assessment	\$2,231,036
SNPLMA	R6	Planning	BLM	499	Support of the Virgin River Conservation Management Strategy	\$256,623

FINANCIAL REPORTS

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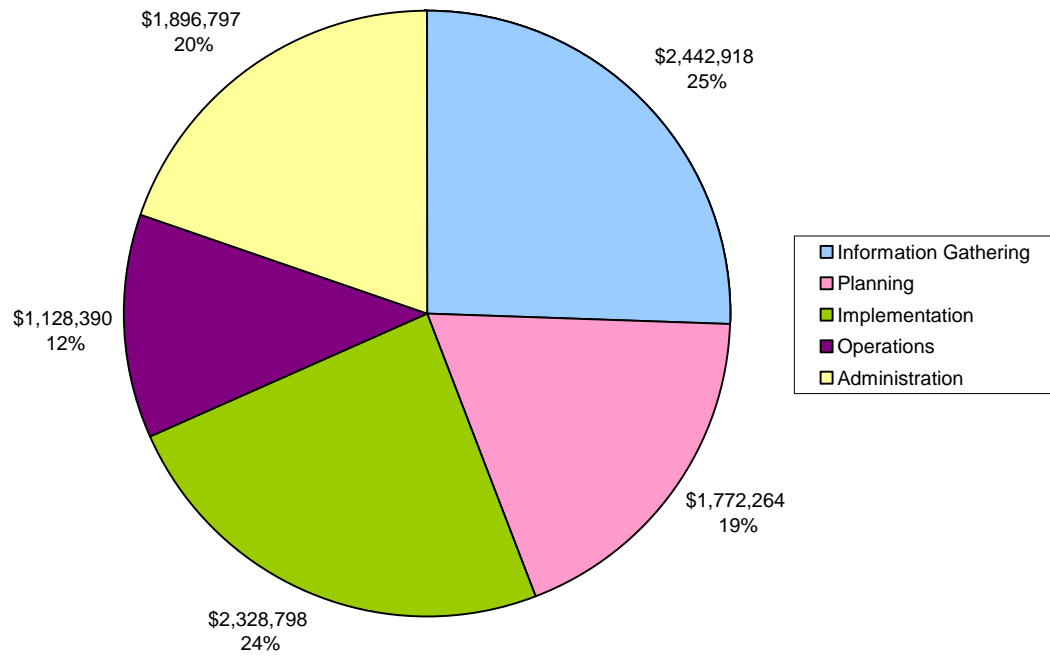
Expenses by Funding Source*
July 2005 through June 2007



* Reflects only expenses approved during the period

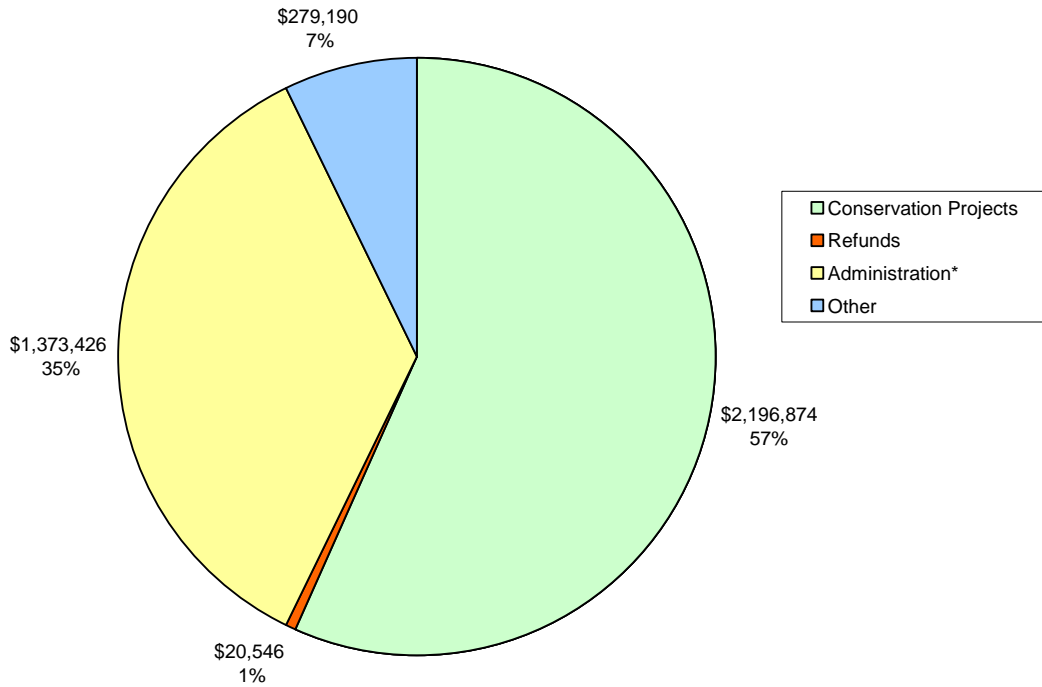
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**Funds Spent by Category for Conservation Projects and Administration
July 2005 through June 2007**



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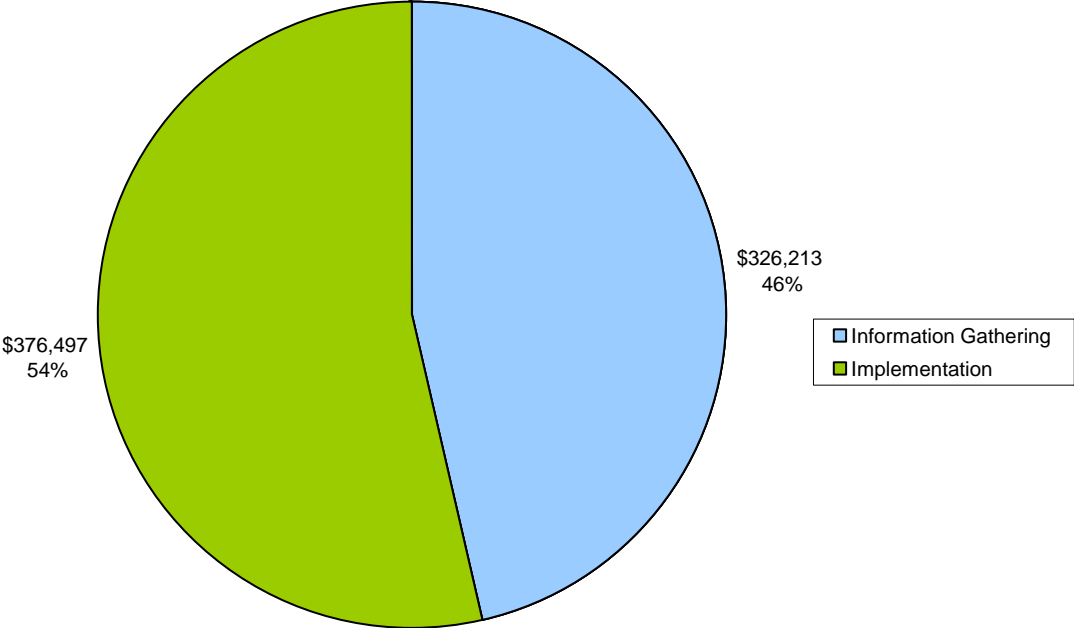
**Section 10 Expenses
July 2005 through June 2007**



* Administration costs for Section 10 include administration of Section 7 and SNPLMA Round 2 and Round 4

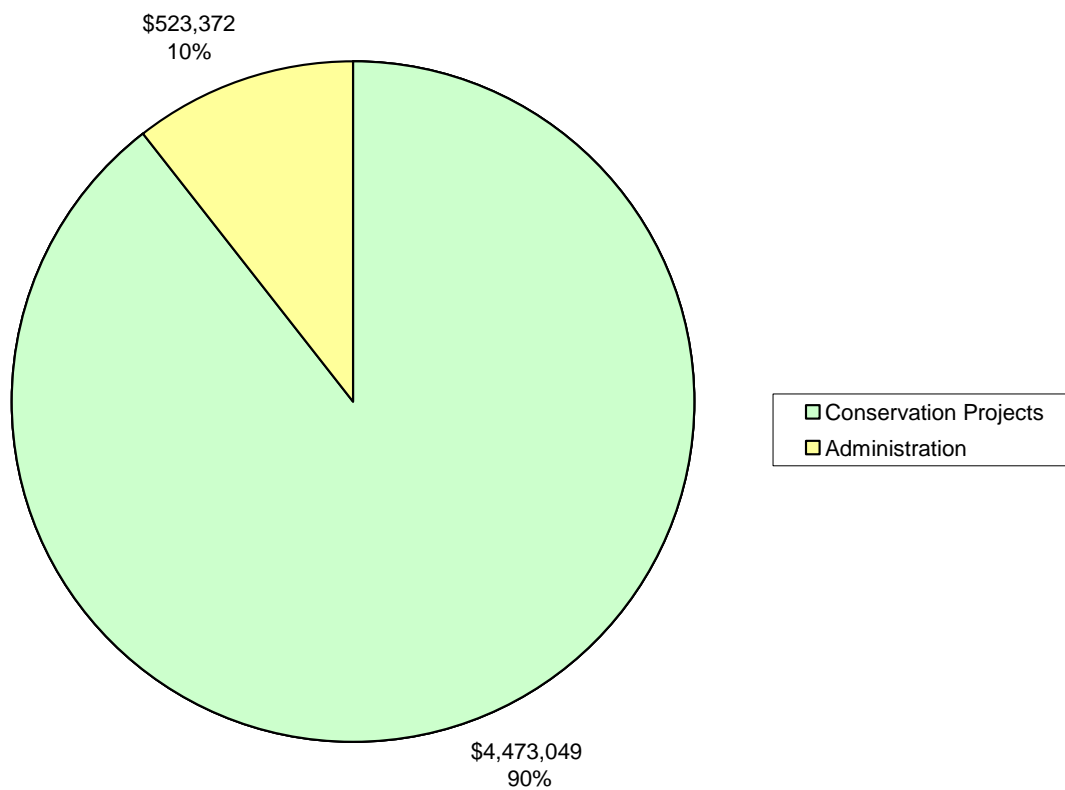
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**Section 7 Expenses
July 2005 through June 2007**



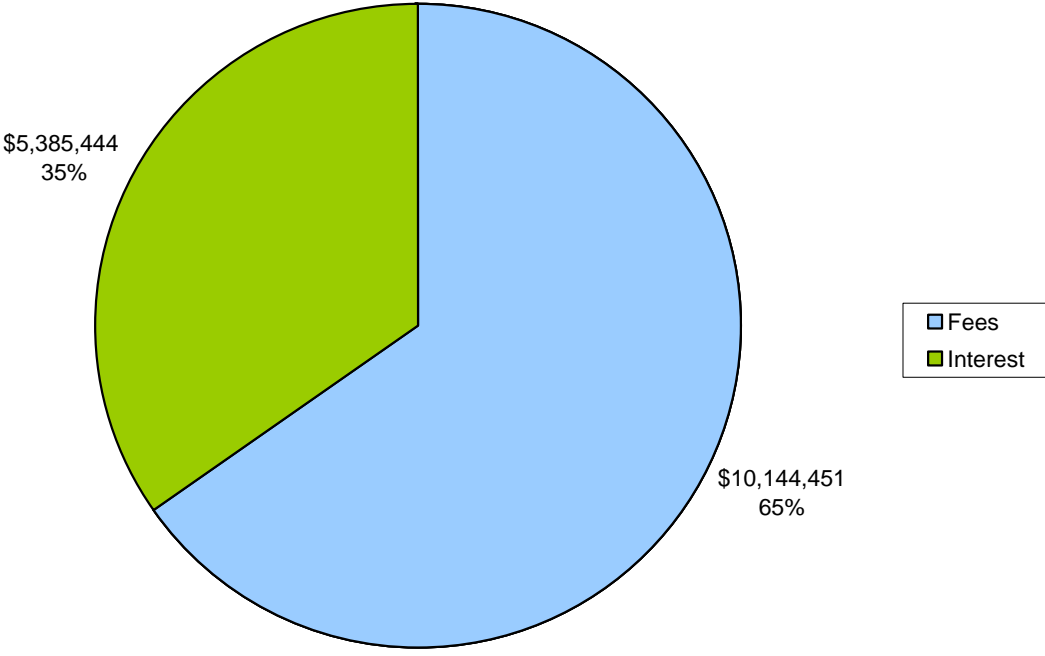
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**SNPLMA Expenses for Rounds 2, 4 and 6
July 2005 through June 2007**



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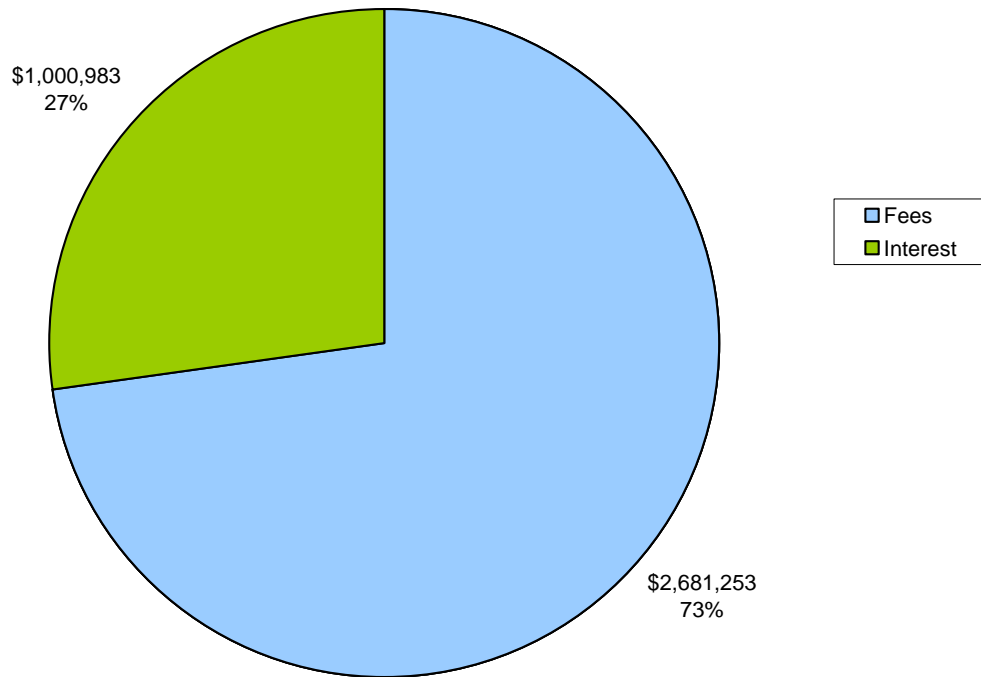
**Section 10 Revenues (Fees and Interest)*
July 2005 through June 2007**



* Fees collected and interest earned on endowment fund

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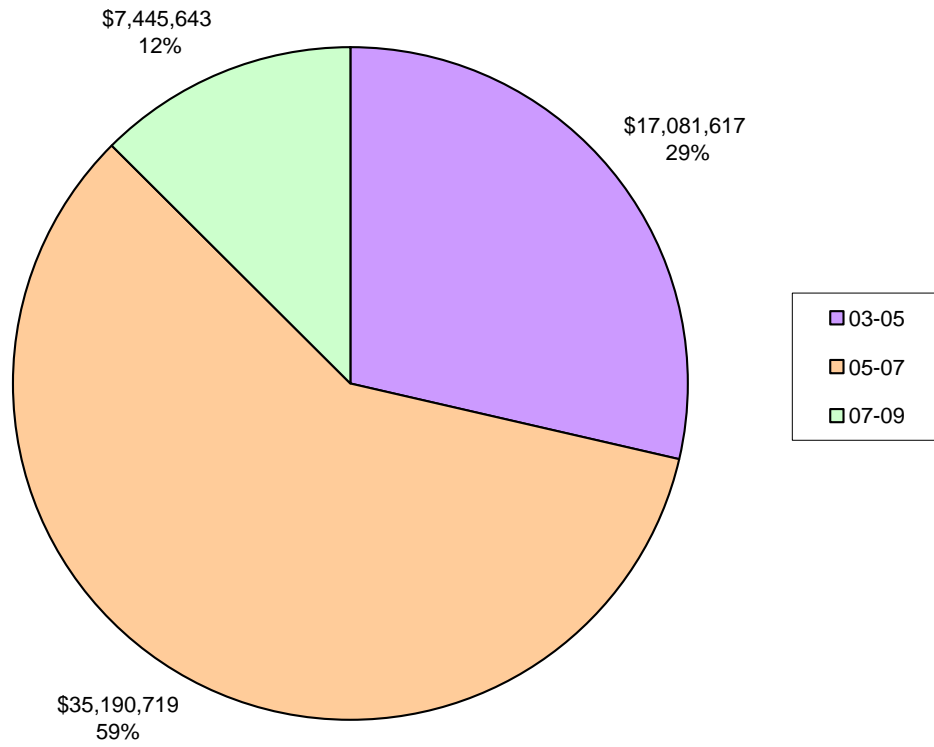
**Section 7 Revenues (Fees and Interest)*
July 2005 through June 2007**



* Fees collected and interest earned on endowment fund

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Projected Funding*



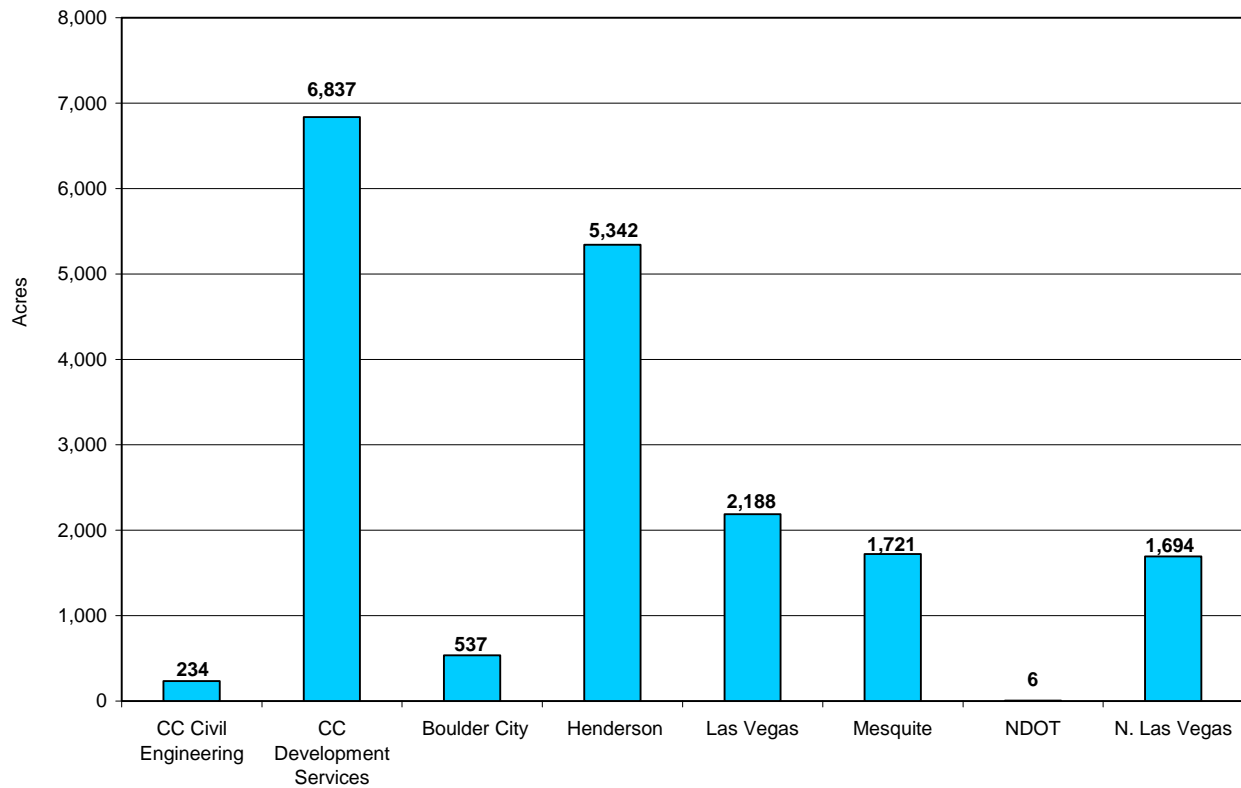
* Amount awarded less amount expended through June 30, 2007

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LAND DISTURBANCE REPORTS

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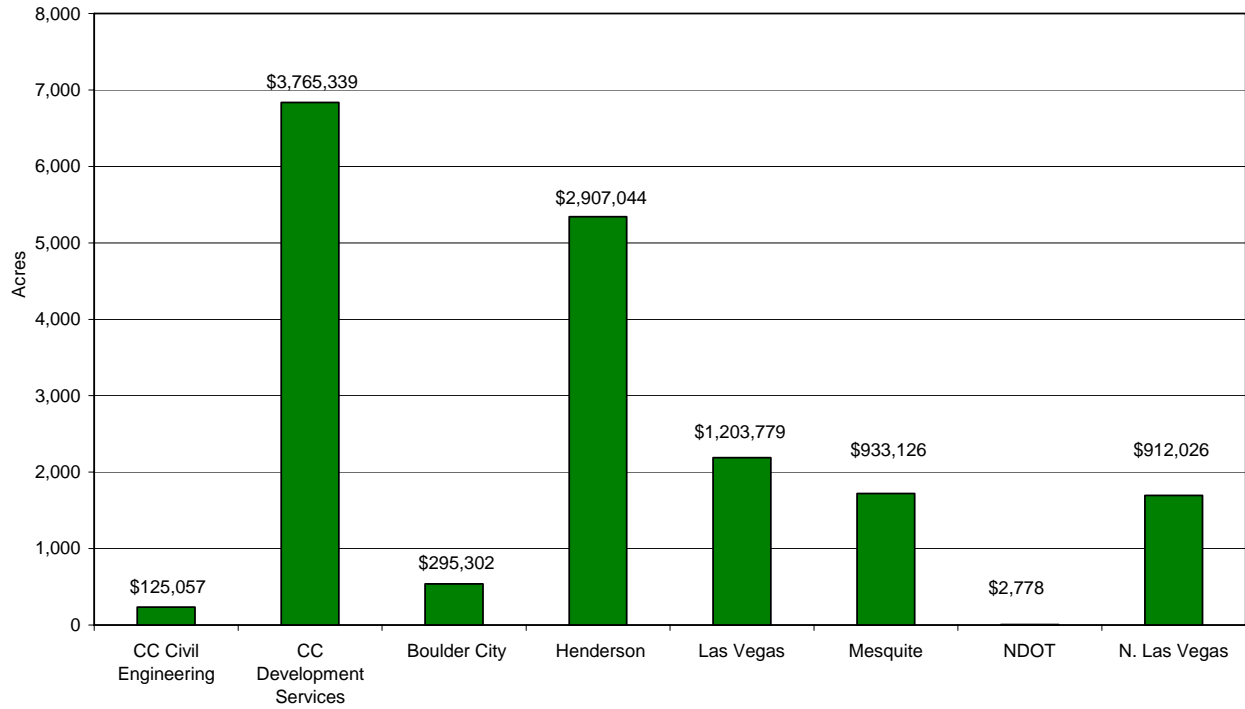
Section 10 Land Disturbance July 2005 through June 2007*



* Does not include fee exempt acres

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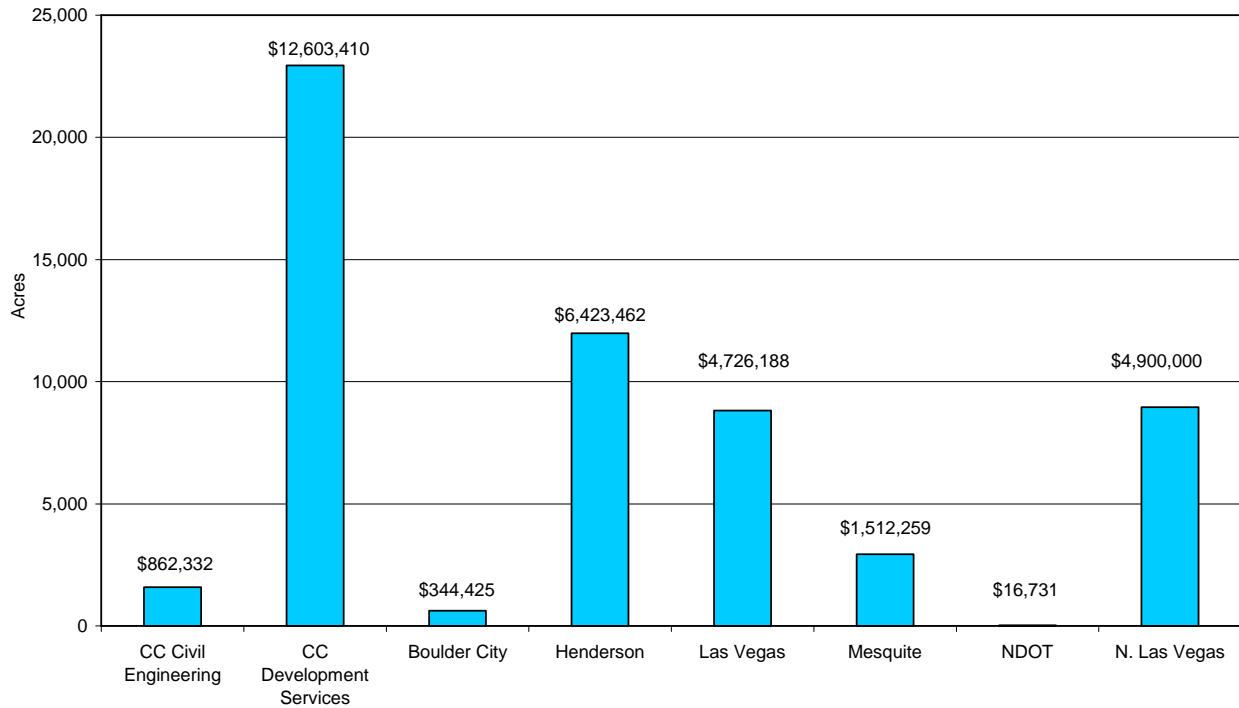
Section 10 Land Disturbance and Tortoise Mitigation Fees July 2005 through June 2007*



* Does not include fee exempt acres

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Section 10 Cumulative Land Disturbance and Tortoise Mitigation Fees February 2001 thru June 2007



* Does not include fee exempt acres

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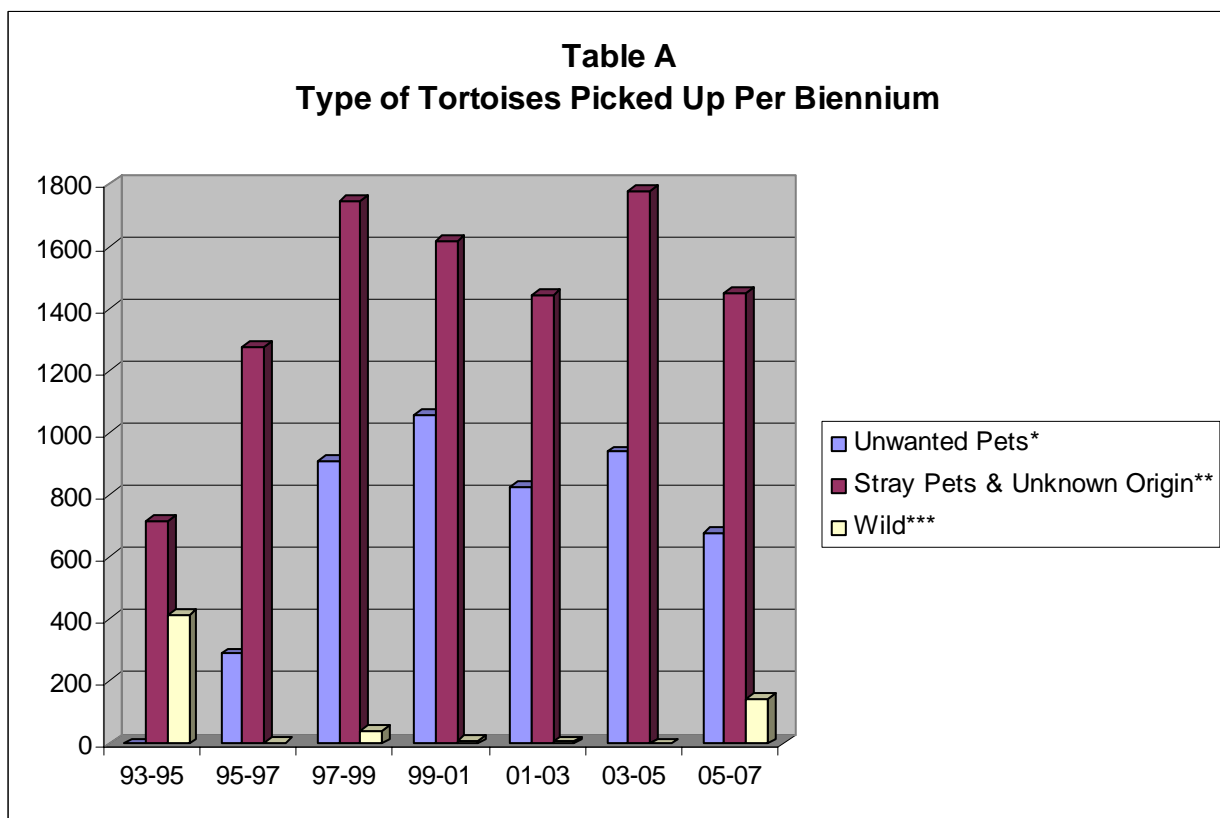
TORTOISE DISPOSITION SUMMARY

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Desert Tortoise Disposition

Clark County's responsibilities regarding desert tortoise pickup were established in the 1995 DCP and 2001 MSHCP and Section 10 Permit #TE034927-0. The DCP outlines the requirement to provide a pickup service to handle desert tortoises which are displaced by development or appear to be in harm's way within urban areas under section C.3.a. The service is currently free of charge and is provided to developers who do voluntary surveys of their property prior to disturbance and to individuals who find a tortoise wandering near urban development. The service began picking up pet tortoises in 1996. Table A, Type of Tortoises Picked Up Per Biennium, displays the number of unwanted pets, stray pets or tortoises of unknown origin, and wild tortoises picked up by the service since 1993.

The pickup service has handled over 15,000 desert tortoises since 1995 and averaged approximately 2,400 pick-ups a biennium over the last three biennia. All tortoises picked up by the service are taken to the DTCC for care and ultimate disposition. Table B, Tortoise Disposition Per Biennium, displays the number of tortoises per disposition option for each biennium (if data was available), for Clark County tortoises brought in to the DTCC through the pickup service.

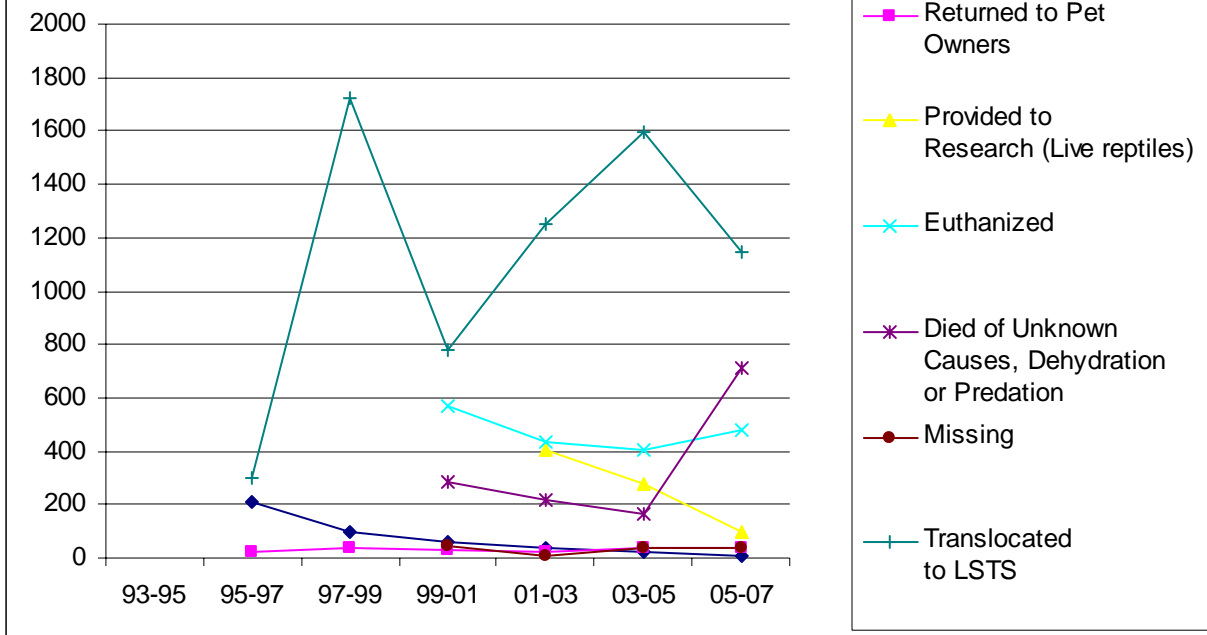


*The pickup of pet desert tortoises began as a pilot project in October 1996.

**The majority of these tortoises are found in urban areas and are considered stray pets.

***Includes tortoises found through mandatory clearances in 93-95, then optional S7 and S10 clearances after August 1995, and Coyote Springs (Clark County section) clearances.

**Table B
Tortoise Disposition Per Biennium**



NOTE: Data used to compile these charts was provided through the final biennial reports of Southern Nevada Environmental Inc., contractor to Clark County for management of the DTTHF including the Desert Tortoise Pickup Service (1993-2007), and management of the DTCC and Translocation Program (1997-2007).

GLOSSARY AND ACRONYMS

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**Desert Conservation Program
Glossary and Acronyms**



AC	Advisory Committee
ACEC	Area of Critical Environmental Concern
AMP	Adaptive Management Program
AMST	Adaptive Management Science Team
ARS	Agricultural Research Service
BCCE	Boulder City Conservation Easement
BLM	U.S. Bureau of Land Management
BRD	Biological Resources Division
BRRC	Biological Resources Research Center
CC	Clark County
CMS	Conservation Management Strategy
Contract	The formal legal agreement signed by all parties that guides the work and determines requirements of the contractor.
Contractor	The contractor who has the primary responsibility for developing, delivering and/or integrating the system. The contractor may hire and oversee various subcontracts to complete the required work. All subcontractors must be approved by the MSHCP.
DCP	Clark County Desert Conservation Program
DTCC	Desert Tortoise Conservation Center
DTMIC	Desert Tortoise Monitoring and Implementation Committee
DTTHF	Desert Tortoise Transfer and Holding Facility
DWMA	Desert Wildlife Management Area
ELISA	Enzyme-Linked Immunosorbent Assay
ESA	Endangered Species Act
GIS	Geographic Information System
GPS	Global Positioning System
HCP	Habitat Conservation Plan
IMA	Intensively Managed Area

Desert Conservation Program
Glossary and Acronyms



IMC	Implementation and Monitoring Committee
IPB	Implementation Plan and Budget
LE	Law Enforcement
LMNRA	Lake Mead National Recreation Area
LSTS	Large Scale Translocation Site
MOG	Management Oversight Group
MOG-TAC	Management Oversight Group Technical Advisory Committee
MSHCP	Multiple Species Habitat Conservation Program
NADCP	Nevada Animal Damage Control Program
NDF	Nevada Division of Forestry
NDOA	Nevada Department of Agriculture
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDRP	Nevada Department of Resource Protection
NEPA	National Environmental Policy Act
NNHP	Nevada Natural Heritage Program
NPS	U.S. National Park Service
NRA	National Recreation Area
NRCS	Natural Resource Conservation Service
OHV	Off-Highway Vehicles
PDA	Personal Digital Assistant
PIC	Partners in Conservation
PM	Project Manager
PMA	Program Management Analysis
PMP	Preliminary Management Plan

**Desert Conservation Program
Glossary and Acronyms**



SMNRA	Spring Mountains National Recreation Area
SNEI	Southern Nevada Environmental Incorporated
SNPLMA	Southern Nevada Public Lands Management Act
SNWA	Southern Nevada Water Authority
Subcontractor	A contractor who is hired by the Prime Contractor to perform work on the project. The ultimate contractual responsibility for the project lies with the Prime Contractor.
SWCA	SWCA Environmental Consultants
TNC	The Nature Conservancy
UNLV	University of Nevada, Las Vegas
UNR	University of Nevada, Reno
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRCP	Virgin River Conservation Partnership
Wash	Las Vegas Valley Wash