

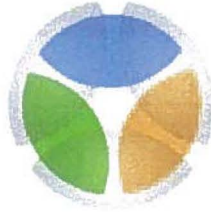


desert conservation  
PROGRAM



implementation plan and budget  
2011-2013

Clark County, Nevada



# desert conservation PROGRAM

## **Multiple Species Habitat Conservation Plan Proposed 2011-2013 Implementation Plan and Budget Report**

This report describes the process followed to develop the 2011-2013 Implementation Plan and Budget for the Clark County Multiple Species Habitat Conservation Plan (MSHCP) and the outcome of the budget deliberations.

There are several sections to this report including:

- I. Description of the budget process
- II. Description of the budget process clarification
- III. Description of the project concept development and review process
- IV. Summary of discussions among the permittees
- V. Summary of discussions with USFWS
- VI. Response to science advisor recommendations
- VII. Summary of the public comment period and comments received
- VIII. Revisions to published draft
- IX. Amendments to 2009-2011 Implementation Plan and Budget
- X. Proposed 2011-2013 Implementation Plan and Budget

### **I. MSHCP Implementation Plan and Budget Process**

The Desert Conservation Program (DCP) oversees mandated regional compliance with the federal Endangered Species Act through implementation of the Multiple Species Habitat Conservation Plan (MSHCP) and Section 10(a)(1)(B) Incidental Take Permit #TE034927-0. The United States Fish and Wildlife Service (USFWS) provides regulatory oversight and monitors compliance.

Per section 2.8.3.3 of the MSHCP, Clark County is responsible for providing management and administration of the MSHCP, through a Plan Administrator. Per the MSHCP, the County Manager will appoint a Plan Administrator to implement the MSHCP on behalf of Clark County, the cities of Boulder City, Henderson, Mesquite, Las Vegas, North Las Vegas, and Nevada Department of Transportation (collectively "permittees"). The Environmental Manager in the Clark County Department of Air Quality and Environmental Management (DAQEM) currently serves as the Plan Administrator and manages the DCP.

In general, the Plan Administrator is responsible for day-to-day operations, the preparation and implementation of a biennial Implementation Plan and Budget, compliance monitoring and reporting, and making recommendations to the Clark County Board of Commissioners (BCC), which has final decision making authority over implementation of the MSHCP.

Funding to implement the permit conditions and conservation actions in the MSHCP is derived from the \$550 per acre mitigation fee (also referred to as Section 10 funding) collected by the permittees. This funding is enterprise funding and can only be used for the purposes of implementing the DCP. Additional funding is available from the sale of federal land in Clark County as authorized by the Southern Nevada Public Lands Management Act (SNPLMA). This funding is awarded on a competitive basis and is not guaranteed.

Guidance for the development of biennial implementation plans and budgets can be found in Section 2.1.12 of the MSHCP. Generally, it prescribes key provisions of the budget development process. These key provisions include:

- Adaptive Management Program (AMP) recommendations and calculating available funding
- Ensuring biennium proposals are developed
- Holding budget sessions
- Submittal of Implementation Plan and Budget
- U.S. Fish and Wildlife Service review of Implementation Plan and Budget
- Biennial calendar, which outlines explicit steps, dates, and responsible parties

This Section of the MSHCP has consistently been used as a guide for the Plan Administrator and the permittees, Implementing Agencies, and USFWS when developing a budget process. Since inception of the MSHCP, the prescriptive calendar and budget process outlined in Section 2.1.12 have served as general guidance to the parties along with recommendations from the AMP, advisory committees and a Program Management Analysis (Kirchoff 2005). Necessary adjustments have been made to arrive at implementation plans and budgets, all of which have been approved by the USFWS.

The Plan Administrator has identified the budget process as an area of the MSHCP requiring significant revision. The Plan Administrator has been working with the USFWS on a major amendment to the MSHCP. In the short-term, and in order to continue to mitigate for incidental take in good faith, the Plan Administrator has proposed a budget process responsive to the key provisions outlined in the MSHCP in developing the 2011-2013 Implementation Plan and Budget, while actively pursuing a major amendment to the MSHCP.

## **II. Budget Process Clarification**

Among the MSHCP's guidance documents, the Implementing Agreement (IA) is the controlling document over the other documents. The IA states that through June 30, 2005, the Plan Administrator shall expend \$2.05 million per year. During the remaining term of the permit, the Plan Administrator shall expend \$1.75 million per year including cost of living adjustments of no more than 4% per year.

Pursuant to the IA, if the Plan Administrator expends more than is required, the excess amount will be credited against future required expenditures. It is the Plan Administrator's position that all funds that have been allocated through the Implementation Plan and Budget process each biennium, and expended by the Plan Administrator for MSHCP projects, are to be included in the amount of required and excess expenditures.

Based on these provisions, the Plan Administrator has calculated the required expenditures to date, the encumbered expenditures anticipated through 2011, and the credits accrued. The minimum required

expenditure over the entire 30-year permit is \$54,300,000 (July 1, 1999 – June 30, 2029). To date, the Plan Administrator has expended \$57,899,804 (July 1, 1999 – June 30, 2009), and encumbered an additional \$26,566,762 in expenditures for conservation projects anticipated to be completed by June 30, 2011.

Although the logical progression of crediting excess expenditures leads to the possible scenario of exceeding the total amount of required expenditures prior to the end of the 30-year term of Incidental Take Permit TE 034927-0, the MSHCP's guidance documents, including the IA, do not address how to proceed if this possible outcome becomes reality. The MSHCP and the IA do provide some guidance regarding the manner in which the Plan Administrator must expend any remaining funds in the endowment fund at the end of the 30-year term of the permit, which is that the Plan Administrator must expend the funds remaining at the end of the 30-year term in cooperation with the USFWS for the conservation of species and habitats.

In March 2010, the Plan Administrator sought to clarify the language in the MSHCP and IA with the following statement:

*In the event the County's actual expenditures exceed the total minimum required expenditure over the 30-year term of the permit prior to the end of the permit term, the County must expend any remaining funds in cooperation with the FWS for the conservation of species and habitats.*

This statement makes clear that the budget process outlined in the MSHCP and IA is not necessary when determining how to expend the remaining funds. Instead, the Plan Administrator, in cooperation with the USFWS, will determine the conservation measures to be funded and implemented. The Plan Administrator received formal concurrence from USFWS on this clarification on April 14, 2010.

Attachment 1 outlines the process and steps the Plan Administrator followed to prepare the 2011-2013 Implementation Plan and Budget, and the budget principles and project concepts to be considered, as developed by the Plan Administrator and permittees.

### **III. Project Concept Development and Review**

The Plan Administrator prepared project concepts and budgets taking into account guidance in the incidental take permit and MSHCP, the budget clarification agreed to between the Plan Administrator and USFWS, current status of these efforts, needs anticipated during the 2011-2013 biennium, the budget principles developed by the permittees, and previous budgets and expenditures. The complete project concepts are available in Attachment 2.

The Plan Administrator prepared the following permit condition or explicit MSHCP required project concepts (see Incidental Take Permit and Section 2.1.8.2 of the MSHCP):

- Administration of the MSHCP (including the imposition and oversight of a \$550-per-acre development fee and implementation of an endowment fund and implementation of conservation actions)
- AMP (develop and administer the AMP)
- Boulder City Conservation Easement Management, Maintenance, and Law Enforcement (maintenance and management of allotments, land, and water rights which have been acquired)
- Desert Tortoise Hotline and Pick-up Service (collection of wild desert tortoises found in harms way)
- Fencing Program (construction, monitoring, and maintenance of barriers along the Large Scale Translocation Site and Nipton Road)

- Management of acquired properties and water rights (maintenance and management of allotments, land, and water rights which have been acquired) \
- Public Information and Education Program (including Mojave Max program and public and stakeholder outreach, including various media campaigns and publications)

The amount of the budget for these non-discretionary project concepts is \$4,710,241.50. Section 10 mitigation fee funding will be used to cover these costs, but the Plan Administrator intends to pursue SNPLMA funds to supplement this funding and offset the use of Section 10 funds.

The Plan Administrator is proposing two projects that are listed as possible mitigation measures, but not a requirement of the permit or MSHCP, thus can be considered discretionary:

- Desert tortoise monitoring (develop a pilot monitoring study to establish occupancy status and trends, habitat quality, and selected threats)
- Property acquisition (along the Virgin and Muddy rivers and Meadow Valley Wash)\*  
*\*Although property acquisition is a requirement in the MSHCP, the County can only pursue the purchase of properties that would provide a conservation benefit from willing sellers, thus this effort is opportunity driven and is being considered discretionary.*

The Desert tortoise monitoring project is being proposed in response to recommendations provided by the MSHCP Science Advisor (see Section VI below and Attachment 3 for further discussion). The Plan Administrator does not need additional funding to implement this project, but will use funds already approved for similar projects in previous biennia to fund the study.

The amount of the budget for the discretionary project concepts is \$3,200,000.00. The Plan Administrator intends to pursue SNPLMA funds for land acquisition. Section 10 mitigation fee funding may be used if SNPLMA funds are not awarded.

The Plan Administrator anticipates costs associated with the transition from the current MSHCP and Incidental Take Permit to the amended MSHCP that is currently under development, and thus is also proposing the following concept for funding:

- MSHCP Permit Amendment Transition (to address infrastructure and administrative changes that may need to be addressed as part of the amendment process)

Included in the transition budget are salaries and benefits for staff. The Plan Administrator currently employs eight full-time temporary positions that assist in implementing the DCP. At the 11/3/09 BCC meeting, agenda item #12, the Board extended these positions through January 2012. This budget provides for additional funding to extend these positions through July 2013. A formal extension will be scheduled for a future BCC meeting, upon approval of this Report. These positions are necessary for the continued implementation of conservation actions and for the amendment transition effort. The amendment process will include a resource needs analysis to determine which of these positions should become permanent.

The amount of the budget for permit amendment is \$2,215,261.00. Section 10 mitigation fee funding will be used to cover these costs.

#### **IV. Summary of Discussions Among the Permittees**

A draft of the project concepts and budget was provided to the permittees on July 2, 2010 for their review. The permittees met on July 14, 2010 to discuss the project concepts and budget. Two minor edits were provided. The group discussed the amount of overhead being charged to the DCP from both Clark County

and DAQEM. The City of Las Vegas found the figure to be high. The Plan Administrator explained that staff has been working with DAQEM and other Clark County departments to better understand overhead charges and related costs, but that the DCP is subject to unanticipated County imposed expenses. The permittees were given until July 22, 2010 to provide further comment. No additional comments were received.

#### **V. Summary of Discussions with the US Fish and Wildlife Service**

A draft of the project concepts and budget was provided to the USFWS on July 2, 2010 for their review. An emailed list of comments was received on August 3, 2010. The Plan Administrator met with USFWS on August 5, 2010 to discuss the project concepts and budget. The USFWS expressed interest in being involved in discussions regarding the development of the methods for the Desert Tortoise Monitoring Pilot Study. The USFWS found the amount budgeted for administration to be high. The Plan Administrator explained that administration costs included management activities for funding encumbered under previous biennia and costs directly related to implementation of conservation actions, and as a result agreed to show previous biennia funding remaining to be spent and to separate implementation activity costs to make this clear. The Plan Administrator will be managing approximately \$14,961,908.00 from previous biennia in 2011-2013. See Attachment 3 for response to emailed comments.

#### **VI. Response to Science Advisor Recommendations**

The Plan Administrator requested a report from the Science Advisor contractor (Enduring Conservation Outcomes, LLC) containing recommendations for discretionary (not required by permit) projects for the 2011-2013 Implementing Plan and Budget. The report was received on May 24, 2010 and is provided in Attachment 4.

Five discretionary projects were recommended by Science Advisor.

1. Predictive Modeling of Habitat and Occurrences-Las Vegas Bearpoppy and Las Vegas Buckwheat
2. Post-Fire Rehabilitation of Mojave Desert Scrub Habitat
3. Burrowing Owl Translocation and Habitat Restoration
4. Desert Tortoise Monitoring
5. Desert Riparian Restoration

Science Advisor's description and rationale for each project are summarized below and the Plan Administrator's response to each is included.

#### **Predictive Modeling of Habitat and Occurrences-Las Vegas Bearpoppy and Las Vegas Buckwheat**

Science Advisor recommended completing the current modeling effort to predict habitat for Las Vegas Bearpoppy (*Arctomecon californica*) and Las Vegas Buckwheat (*Eriogonum corymbosum* var. *nilesii*). Science Advisor also recommended enhancing the model using remote sensing data that could provide additional information on habitat condition and potential habitat losses. This recommendation is also related to recommendations in the 2010 Adaptive Management Report, also authored by Science Advisor, that recommend targeting rare plant habitat areas with a species-level habitat loss analysis rather than the standard ecosystem-level analysis currently performed by DCP staff, as well as exploring the utility of remote sensing data for the purposes described above.

DCP staff are currently wrapping up the plant survey projects that will be used to test and refine the current rare plant predictive habitat model, and will cooperate with the Bureau of Land Management to further refine and document the methods and outcomes of this modeling effort. At that time the Plan Administrator will use existing AMP funds to compare the habitat model to the most recent habitat loss analysis outcomes. The Plan Administrator will also work with Science Advisor to determine the feasibility

of conducting a remote sensing habitat condition analysis for these and other sensitive rare plants using existing AMP funds. The Plan Administrator will address this recommendation with existing funds and is not proposing a project concept for the 2011-2013 IPB.

#### Post-Fire Rehabilitation of Mojave Desert Scrub Habitat

Science Advisor recommended continuing the current post-fire rehabilitation study, being conducted by US Geological Survey with DCP funding. Science Advisor additionally recommended expanding the focus of this study to also assess the effectiveness of various fire risk or spread reduction methods, such as reduction of non-native annual plant species or creation of fire breaks.

The Plan Administrator understands from recent communications with the US Geological Survey (USGS) scientists involved in the current post-fire rehabilitation study that the outcomes of the current study, when combined with the outcomes of their other research efforts, should address the most pressing questions that remain in the land management community regarding effective post-fire rehabilitation. The current USGS study is due for completion in June of 2013, the end of the 2011-2013 biennium. The Plan Administrator will wait for the outcomes of the current study before considering if any remaining uncertainty is sufficient to warrant future MSHCP funding for post-fire rehabilitation research, and will not propose a project concept for the 2011-2013 IPB to address this recommendation.

The Plan Administrator is interested in further information regarding methods to reduce the extent of wildfire spread in the Mojave Desert, particularly in riparian and Mojave Desert scrub ecosystems. The Plan Administrator will work with Science Advisor and/or other experts to conduct a search of published literature and agency reports to assess the nature and level of uncertainty regarding the costs and effectiveness of methods designed to reduce the spread of wildfires in these and similar ecosystems, including suppression, fine fuel reduction and creation or maintenance of fire breaks. The outcomes of this literature search will be used to determine if any modeling or research is needed to design a wildfire spread reduction approach for MSHCP reserve areas. These efforts will be accomplished using current AMP funds, and the Plan Administrator is not proposing a project concept for the 2011-2013 IPB to address this recommendation.

#### Burrowing Owl Translocation and Habitat Restoration

Science Advisor recommended a project to translocate displaced burrowing owls to protected areas that could be located both within the urban portion of the Las Vegas Valley and within MSHCP reserve areas.

The Plan Administrator is currently in discussions with stakeholders, Permittees and the USFWS to assess the appropriateness and cost of burrowing owl translocation during the MSHCP permit amendment process. These discussions are related to proposals to add burrowing owl to the MSHCP covered species list. As burrowing owls are not currently covered by the MSHCP, and the outcomes of the MSHCP amendment are uncertain, the Plan Administrator is not proposing a project concept for the 2011-2013 IPB to address this recommendation.

#### Desert Tortoise Monitoring

Science Advisor recommended a project that would design and implement a multi-dimensional approach to monitoring the condition of tortoise, tortoise habitat and threats within population units or recovery units. Science Advisor specifically recommended an occupancy monitoring approach for desert tortoises, and methods that assess the condition of habitat and threats, but did not recommend the spatial scale of such monitoring for the MSHCP.

The Plan Administrator will work with Science Advisor and other contractors to design and pilot a desert tortoise occupancy and habitat monitoring protocol and that will be coordinated with a separate threat monitoring program. The geographic scale of this pilot will be one MSHCP reserve area, the Boulder City Conservation Easement. Design costs will be funded with existing AMP funds and DCP is proposing a project concept for the 2011-2013 IPB to implement and pilot the protocols. There are funds available from previous biennia to complete this project.

#### Desert Riparian Restoration

Science Advisor recommended development of a restoration plan for upper Muddy River properties funded and/or owned by the DCP. The restoration plan should focus on species of most concern for the MSHCP (riparian birds) and be developed with an ecosystem approach, taking into account the other land uses and restoration plans for the lands and waters of the Muddy River watershed. Science Advisor recommended five areas of focus for the restoration plan:

1. Hydrology
2. Geomorphology and Stream Bank Structure
3. Maintaining Riparian Vegetation Cover
4. Developing Structural and Compositional Heterogeneity
5. Reducing Fire Hazard

The Plan Administrator will work with Science Advisor, other experts, and stakeholders to develop a feasibility assessment of several riparian restoration options for properties funded and/or owned by DCP on the Upper Muddy River. This assessment will take an ecosystem approach and build upon existing assessments and management plans for the upper Muddy River area, as recommended by Science Advisor. The Plan Administrator will include this feasibility assessment effort in the AMP project concept for the 2011-2013 IPB, which does not require additional funding at this time. The Plan Administrator will also identify staff capacity to enhance existing coordination with other stakeholders and experts engaged in restoration efforts in the upper Muddy River, as appropriate.

#### **VII. Public Comment Period and Response to Comments**

The proposed budget and project concepts were posted on Clark County's website ([http://www.accessclarkcounty.com/depts/dagem/epd/dcp/Pages/dcp\\_reports.aspx](http://www.accessclarkcounty.com/depts/dagem/epd/dcp/Pages/dcp_reports.aspx)) on Wednesday, August 18, 2010. A notice of this posting was sent to the DCP's interested parties list, which is an email distribution list to over 400 stakeholders and citizens. Comments were to be submitted by 5:00 p.m. PST on September 6, 2010. One set of comments was received. See Attachment 5 for response to comments.

#### **VIII. Revisions to Published Draft**

During the time the draft project concepts and proposed budget were provided to the Permittees, USFWS and the public for comment, and the completion of this report, the Plan Administrator has continued to consider and revise the need for this work, methods for certain projects, and related costs. Only major changes that substantially change the intent of project concepts or the budgets are noted in this section. Minor clarifications and edits are not noted.

One change has been made after the posting and request for public comments of the 2011-2013 Implementation Plan and Budget, as follows:

1. The Desert Tortoise Monitoring Pilot Study budget has been increased from the originally posted amount of \$254,540 to \$384,190. DCP staff held a workshop in coordination with the MSHCP Science Advisor and USFWS to refine methods, and has reviewed similar work conducted in the Sonoran Desert, and has determined a need for additional field days, which has increased the



project cost. The Plan Administrator is proposing to use funding from the 2009-2011 Desert Tortoise Monitoring project to cover this project and does not need additional funds approved for 2011-2013.

**IX. Amendments to 2009-2011 Implementation Plan and Budget**

There is approximately \$14,961,908.00 in funding approved in previous biennia that will continue to be managed and expended in 2011-2013. The Plan Administrator continues to consider and revise the need for these projects, and consider costs and resources. In the 2009-2011 budget, \$1,046,260 was approved for Desert Tortoise Monitoring. The project as proposed will not occur, and this funding, or potentially SNPLMA funding approved for Desert Tortoise Monitoring in the 2007-2009 biennium, will be used to cover the Desert Tortoise Monitoring Pilot Study proposed for the 2011-2013 biennium. Use of the 2007-2009 SNPLMA funding will require a change approval by the US Bureau of Land Management.

The Plan Administrator proposes to use up to \$660,000 of the \$1,046,260 to cover costs related to permit amendment activities, as needed. The permit amendment effort is a large-scale, multi-year effort that has experienced unforeseen delays associated with the National Environmental Policy Act compliance and scoping process, additional time needed by the Community Advisory Committee to develop recommendations, and higher than anticipated costs associated with the environmental and regulatory aspects of the amendment process. The actual amount to be used for permit amendment will depend on the need for funding and the success in being able to use the 2007-2009 SNPLMA funding for Desert Tortoise Monitoring.

**X. Final Proposed 2011-2013 Implementation Plan and Budget**

The Plan Administrator recommends that the 2011-2013 biennial budget be \$10,125,502.50. The MSHCP provides that these expenditures are to be credited to future required expenditures.

<b>2011-2013 Implementation Plan &amp; Budget Project Concept Breakdown</b>			
<b>Project No.</b>	<b>Project Title</b>	<b>Budget Amount for Approval</b>	<b>Fund</b>
TBD	Administration*	\$2,481,346.50	2360
TBD	Implementation of Conservation Actions	\$1,446,295.00	2360
TBD	Adaptive Management Program	\$0.00	2360
TBD	Boulder City Conservation Easement Management, Maintenance and Law Enforcement	\$453,000.00	2360/possible SNPLMA
TBD	Management of Acquired Properties and Water Rights	\$140,600.00	2360
TBD	Desert Tortoise Hotline and Pick-Up Service	\$0.00	2360
TBD	Public Information and Education	\$189,000.00	2360/possible SNPLMA
TBD	Fencing Program	\$0.00	2360
	<i>SUBTOTAL</i>	\$4,710,241.50	
TBD	Desert Tortoise Monitoring Pilot Study	\$0.00	2360/possible SNPLMA
TBD	Riparian Property Acquisition	\$3,200,000.00	2360/possible SNPLMA
	<i>SUBTOTAL</i>	\$3,200,000.00	
TBD	MSHCP Permit Amendment Transition	\$2,215,261.00	2360
	<b>TOTAL 2011-2013 BUDGET</b>	<b>\$10,125,502.50</b>	

*\*subject to unanticipated Clark County-imposed expenses*

## Attachment 1



### desert conservation PROGRAM

#### **Multiple Species Habitat Conservation Plan 2011-2013 Implementation Plan and Budget Proposed Process and Steps**

- March 2010 – Clark County, on behalf of Permittees, prepares clarification of language in the Implementing Agreement dealing with what to do in the event the Permittees' excess expenditures exceed the total required expenditure for the stated term of the incidental take permit. Clark County submits clarification to USFWS for its consideration.
- May 2010 - Clark County and in consultation with Permittees and USFWS develops budget principles to guide development of budget (see next page).
- June 2010 – Clark County, on behalf of Permittees, develops budget and conservation measure concepts and provides to Permittees and USFWS for review and comment.
- July 2010 – Permittees and USFWS review budget and conservation measure concepts and provide comment to Clark County.
- August 2010 – September 2010 – Clark County revises budget and conservation measure concepts in consultation with Permittees and USFWS, as appropriate, and posts budget and report for public comment.
- September 2010 – October 2010 – Clark County responds to public comment, finalizes budget and report, and schedules item for Board of County Commission approval, and submits SNPLMA Round 12 nominations based on approved budget.
- November 2010-December 2010 – Clark County prepares annual County fiscal year operating and capital budget based on Board of County Commission approval of Implementation Plan and Budget.
- November 2010 – June 2011 – Clark County works with Science Advisor and other experts to determine detailed methods for implementing conservation measures and for any effects or effectiveness data collection and analysis, if needed.



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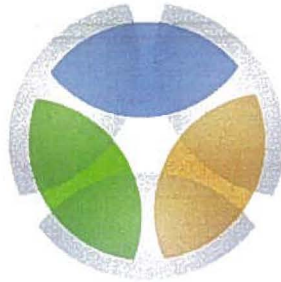
**MULTIPLE SPECIES HABITAT CONSERVATION PLAN  
2011-2013 Proposed Budget Principles & Project Concepts**

1. Fulfills explicit permit conditions outlined in the current permit.
2. Advances the amendment of the MSHCP and its conservation strategy; focuses on species proposed to be covered.
3. Provides for continued funding of ongoing and effective conservation measures;
4. Responds to the Adaptive Management Report and Science Advisor Recommendations.
5. Focuses on projects with measurable outcomes that inform the HCP.

**Project Concepts**

1. Boulder City Conservation Easement Management, Maintenance & Law Enforcement
2. Property Acquisition, Management & Maintenance
3. Public Information and Education
4. Desert Tortoise Hotline & Pick Up Service
5. Desert Tortoise Fencing
6. Habitat Restoration
7. Monitoring – To be recommended by Science Advisor

**Attachment 2**



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**Multiple Species Habitat Conservation Plan**

**Budget Summary and Project Concepts for  
2011-2013 Biennium**

**9/17/10**

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Budget Summary: 2011-2013 Biennium**

**2011-2013 DCP Budget - Projects**

	Funding needs for BN 11-13	Fund
Administration	\$2,481,346.50	2360
Implementation of Conservation Actions	\$1,446,295.00	2360
Adaptive Management Program	\$0.00	2360
BCCE Management/Maintenance/Law Enforcement	\$453,000.00	2360
Property Management/Maintenance/Acquisition	\$140,600.00	2360
DT Hotline and Pick-up Service	\$0.00	2360
Public Information & Education	\$189,000.00	2360/possible SNPLMA
Fencing	\$0.00	2360
DT Monitoring Pilot Study	\$0.00	2360/possible SNPLMA
Riparian Property Acquisition	\$3,200,000.00	2360/possible SNPLMA
<b>TOTAL</b>	<b>\$7,910,241.50</b>	

**2011-2013 DCP Budget - Permit Amendment Transition**

	Funding needs for BN 11-13	Fund
MSHCP Permit Amendment Transition	\$2,215,261.00	2360
<b>TOTAL</b>	<b>\$2,215,261.00</b>	

<b>TOTAL FUNDING 2011-2013</b>	<b>\$10,125,502.50</b>
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FUNDING ENCUMBERED FROM PREVIOUS BIENNIA TO BE MANAGED IN 2011-2013	\$14,961,908.00
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**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

Administration and Implementation of Conservation Actions

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

Not applicable

**Project Goal:**

Based on provisions in the MSHCP Interlocal Agreement (See IA 11.02(C)), the DCP has calculated the minimum required expenditure over the entire 30-year permit to be \$54,300,000 (July 1, 1999 - June 30, 2020). To date, the County has expended \$57,899,804 (July 1, 1999 - June 30, 2009), and encumbered an additional \$26,566,762 in expenditures for conservation projects anticipated to be completed by June 30, 2011.

Clark County received concurrence from the U.S. Fish and Wildlife Service (FWS) that in the event the County's actual expenditures exceeded the total minimum required expenditure over the 30-year term of the permit prior to the end of the permit term, that the County must expend any remaining funds in cooperation with the FWS for conservation of species and habitats.

Given that the County has exceeded the required permit expenditures, the goal of the administration of the DCP is to monitor and maintain certain mitigation efforts to ensure compliance with its associated Incidental Take Permit (TE 034927-0). As the County is currently proceeding with an effort to amend the current MSHCP and Permit, an additional goal is to continue to implement additional efforts toward conservation of species and habitats over and above basic monitoring and maintenance efforts.

Another goal is to continue administering funds from previous biennia to implement conservation actions. The DCP anticipates managing up to \$14.9 million dollars budgeted in previous years that will be expended over the course of the 2011-2013 biennium.

**Project Description and Anticipated Benefit:**

Administration of the DCP includes employing a staff of seven (7) full time and two (2) part-time permanent positions, and eight (8) full time temporary positions to oversee the following operational units of the program: legal, finance/administration, project/contract management, and permit and plan compliance. The majority of funding for the full time temporary positions comes from Southern Nevada Public Lands Management Act funds. The DCP requires legal assistance in the areas of open meeting law, contracting and procurement law, real estate law, and compliance with Section 10 of the Endangered Species Act. The District Attorney - Civil Division's Office provides legal counsel to the DCP.

The finance and administrative work consists of overseeing the assessment, collection and reporting of mitigation fees collected by the permittees; overseeing the reporting of land disturbance and exempt acres; overseeing the budgeting, accounting, and accounts payable areas

of operation; coordinating Southern Nevada Public Lands Management Act assistance agreements and compliance therewith; and overseeing procurement of goods and services.

The project/contract management team work consists of overseeing contract and agreement management for the Program. The project/contract management team is responsible for directly carrying out the following projects:

- Boulder City Conservation Easement Management, Maintenance and Law Enforcement
- Desert Tortoise Hotline and Pick-Up Service
- Clark County Fencing Program
- Management of Acquired Properties and Water Rights
- Clark County Public Information and Education Program
- Permit and Plan Amendment

The project/contract management team is responsible for communication with related project stakeholders and for identifying, resolving or escalating project-related issues, and managing the risks and contingencies related to the project. The majority of project and contract management costs are directly related to implementation of conservation actions.

The Program maintains a position dedicated to the amendment of the MSHCP and ensuring compliance with state and federal permits associated with state and federally-listed species. The area of work focuses on compliance tracking and reporting as outlined in the MSHCP.

The Department of Finance also provides procurement support to the Program, the costs of which are related to implementation of conservation actions. The Department of Air Quality and Environmental Management and Clark County both levy overhead charges against the program for Finance support, IT support, and various other services.

The Program Management Analysis (Kirchoff 2005) found that the County, as Plan Administrator, was inadequately staffed for the scope, scale and complexity of the MSHCP. The County intends to ensure the staffing capacity and skill sets necessary are available to responsibly implement and comply with the MSHCP.

**Project Approach / Methods:**

Administration of the Program will be done in accordance with the MSHCP, Incidental Take Permit and Clark County policy, procedure and practice.

Because of the potential changes to programmatic requirements that may occur due to the MSHCP permit and plan amendment being pursued, the exact goal(s), description, benefits and approach/methods to this project may change to reflect new requirements or direction.

**Estimated Project Cost:**

\$2,481,346.50 - Administration

\$1,446,295 - Implementation of Conservation Actions

**Specific Incidental Take Permit Condition Addressed by this Concept:**

This concept address section 2.1.8.2, Administration of the MSHCP, and Permit Condition H, "The Permittees shall carry out the minimization, mitigation, and monitoring measures specified in Section 2.8 of the MSHCP...".



**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Administrative Project Concept Budget: 2011-2013 Biennium**

<b>Desert Conservation Program Administration Project Concept Budget*</b>		
<b>Ledger Line Item Number</b>	<b>Commitment Item Name</b>	<b>7/1/11-6/30/13</b>
610000	Salaries & Benefits Administration	\$422,850
610000	Salaries & Benefits to implement conservation actions	\$1,268,549
640310	R&M Facilities	\$1,155
640320	R&M Equipment	\$1,155
641000	Other Rental Expenses	\$286,078
644400	Temporary Personnel	\$11,550
649000 & 649510	Training/Travel	\$33,600
663200	Food	\$578
663400	Office Supplies	\$18,000
663420	Computer Software	\$1,155
663500	Staff Uniforms	\$2,310
663600	Minor Equipment	\$2,000
663610	Computer & Supplies	\$11,550
679300	Dues & subscriptions	\$1,155
679800	Refunds	\$39,270
<b>SUBTOTAL BEFORE COUNTY &amp; DAQEM INTERNAL SERVICES CHARGES</b>		<b>\$2,100,955</b>
679600	Postage	\$2,310
640340	R&M Vehicles	\$13,860
645000	Other Insurance	\$34,465
646100 & 646120	Telephone	\$20,790
648100	Printing & Reproduction	\$19,635
679710	COI Billings	\$145,860
679720	ERP Billings	\$57,181
679700	Overhead-County	\$408,471
679700	Overhead-DAQEM	\$768,623
679000	Purchasing Position to implement conservation actions	\$177,746
679700	DAQEM IT Position	\$177,746
<b>SUBTOTAL COUNTY &amp; DAQEM INTERNAL SERVICES CHARGES</b>		<b>\$1,826,687</b>
<b>TOTAL</b>		<b>\$3,927,642</b>
<b>TOTAL ADMINISTRATION BUDGET minus costs related to implementation of conservation actions (PM salaries &amp; purchasing position)</b>		<b>\$2,481,347</b>
<b>TOTAL BUDGET related to implementation of conservation actions (PM salaries &amp; purchasing position)</b>		<b>\$1,446,295</b>

\*These costs are subject to unanticipated Clark County-imposed expenses

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

Adaptive Management Program

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

Not applicable

**Project Goal:**

This project concept provides for ongoing development of the Adaptive Management Program component of the MSHCP.

**Project Description and Anticipated Benefit:**

An Adaptive Management Program has been a required element of the MSHCP. The DCP will continue to implement this program for the benefit of future conservation goals. This project will provide for:

- An independent, Science Advisor contractor who will provide
  - review of analyses of land use trends and habitat loss by ecosystem;
  - analysis of covered species status, ecosystem health, implementation status and MSHCP programmatic effectiveness; and
  - science-based recommendations on future implementation of MSHCP.
- Contractor(s) who will provide
  - updates to species models;
  - data generation to fill gaps in vegetation, soil and threat datasets generated by the agencies in the Southern Nevada Agency Partnership; and
  - technical peer review of the products of Science Advisor and MSHCP.
- Two full time staff who will provide
  - technical expertise and oversight and project management of projects;
  - maintenance and administration of the database containing MSHCP-generated and related spatial and aspatial data;
  - analysis of land use trends and habitat loss by ecosystem; and
  - production of periodic status reports on the Adaptive Management Program.

**Project Approach / Methods:**

Staff and contractors will be used to perform the above functions using the best available scientific and commercial data. Because of the potential changes to programmatic requirements that may occur due to the MSHCP permit and plan amendment being pursued, the exact goal(s), description, benefits and approach/methods to this project may change to reflect new requirements or direction.

**Estimated Project Cost:**

\$0 (due to prior cost savings, no additional funding is needed for the 2011-2013 biennium)

**Specific Incidental Take Permit Condition Addressed by this Concept:**

This project addresses MSHCP commitment to development of an Adaptive Management Program as described in sections 2.1.8.1 and 2.8.2.2 of the MSHCP.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

Boulder City Conservation Easement Management, Maintenance and Law Enforcement

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

The Boulder City Conservation Easement (BCCE), held by Clark County on lands owned by the City of Boulder City.

**Project Goal:**

To provide for ongoing management and enforcement of the BCCE as mitigation for the section 10 incidental take permit.

**Project Description and Anticipated Benefit:**

This project concept will fund continued law enforcement operations, boundary fencing monitoring and signage, road network monitoring and signage, permitted-activity monitoring, public information, monitoring and discouragement of prohibited uses, removal of dump sites, containment of an unauthorized pet cemetery and anticipated restoration activities defined by the BCCE Management Plan developed in the 2005-2007 biennium. The DCP intends to implement efforts on this easement over and above basic monitoring and maintenance, including restoration activities.

**Project Approach / Methods:**

Staff and contractors will be used to perform the above functions using the best available scientific and commercial data. Appropriately certified peace officer personnel will conduct law enforcement activities with possible assistance from other parties.

Because of the potential changes to programmatic requirements that may occur due to the MSHCP permit and plan amendment being pursued, the exact goal(s), description, benefits and approach/methods to this project may change to reflect new requirements or direction.

**Estimated Project Cost:**

\$453,000

**Specific Incidental Take Permit Condition Addressed by this Concept:**

This project addresses section 2.8.3.6, Maintenance and Management of Allotments, Land, and Water Rights Which Have Been Acquired. In addition, this project fulfills MSHCP commitment to comply with the terms and conditions of the Interlocal Agreement between Clark County and the City of Boulder City for the purchase and maintenance of an 85,000 acre conservation easement in Boulder City, Nevada. Item 5(c) of the BCCE agreement requires Clark County to provide peace officers to patrol the property on a regular basis to enforce the applicable ordinances (Boulder City Ordinance #972) and to monitor and discourage prohibited uses referred to in the agreement.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

Property Management, Maintenance, and Acquisition

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

Project concept will address all properties, grazing and water rights and mining claims acquired by Clark County or others on the DCP's behalf within the northeastern Mojave Desert, primarily within but not limited to Clark County, NV. Areas of focus include riparian systems and desert tortoise habitat. All activities associated with the maintenance or expansion of the Boulder City Conservation Easement are addressed in a separate project concept.

**Project Goal:**

To provide for ongoing protection, maintenance and management of acquired properties and rights to ensure their value as mitigation for species covered by the MSHCP does not diminish. This project also provides for acquisition of additional properties and rights, or related activities.

**Project Description and Anticipated Benefit:**

This project concept provides for the maintenance and management of acquired properties along the Muddy and Virgin Rivers and Meadow Valley Wash, as well as acquisition of additional grazing allotments in the northeastern Mojave Desert for the purposes of enhancing conservation in Clark County. This project concept also provides for the administration, of properties, grazing rights, water rights and mining claims acquired by or on behalf of Clark County to mitigate for take under the current and prior section 10 incidental take permits. The DCP intends to implement efforts on these properties over and above basic monitoring and maintenance.

**Project Approach / Methods:**

Staff and consultants will conduct monitoring and records research to document status of properties and water rights. Administrative and legal actions to maintain grazing and water rights will be conducted, as appropriate. Where practicable, threat reduction activities (weed removal, fencing, signage, public information and restoration) will be conducted to ensure the value for covered species does not diminish. Staff and consultants may undertake property acquisition, conduct appraisals, boundary surveys or title searches, secure title insurance and perform other administrative functions to support land acquisition. The purchase cost of land will be budgeted separately, but may occur under this concept if necessary and if funding is available.

Because of the potential changes to programmatic requirements that may occur due to the MSHCP permit and plan amendment being pursued, the exact goal(s), description, benefits and approach/methods to this project may change to reflect new requirements or direction.

**Estimated Project Cost:**

\$140,600

**Specific Incidental Take Permit Condition Addressed by this Concept:**

This project addresses Section 2.8.3.6, Maintenance and Management of Allotments, Land, and Water Rights Which Have Been Acquired.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:** Desert Tortoise Hotline and Pick-Up Service.

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

Throughout non urban areas of Clark County, Nevada.

**Project Goal:**

The goal of this project is to provide a hotline and pick-up service to handle desert tortoises which are mistakenly collected from the wild, found on a construction site, or found at the outskirts of Las Vegas Valley or Boulder City development, and provide for management of these tortoises at the Desert Tortoise Conservation Center (DTCC) or other transfer and holding facility. An additional goal of this project is to promote key messages related to wild desert tortoises and coordinate with other agencies on unwanted pet desert tortoise issues.

**Project Description and Anticipated Benefit:**

The County provides a hotline and pick-up service to handle desert tortoises which are displaced by development or appear to be in harm's way within urban areas. This service will continue to be offered while there are still acres available for development. This 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 wild tortoise in harms way near urban development. The pick-up service has picked up over 17,500 desert tortoises since 1995, the majority of which are unwanted or stray pet tortoises. Clark County ceased collection and management of pet and stray pet tortoises on December 31, 2009.

Tortoises collected by this service are taken to a transfer and holding facility, currently the DTCC, for management and disposition. The DTCC is currently managed by the San Diego Zoo under the oversight of the US Fish and Wildlife Service (FWS). The County will provide funding to the FWS to provide care and management of these tortoises for one year, after which the FWS assumes responsibility for care if the tortoise has not been placed.

**Project Approach / Methods:**

This project includes maintaining a hotline for tortoise calls, now referred to as the Wild Tortoise Assistance Line, and requires staff to return calls within four (4) hours and pick up the tortoises within 24 to 48 hours. If the call originated outside the Las Vegas Valley or Boulder City, the tortoise is to be picked up by the end of the next working day. The Program currently outsources this service, but it may be conducted in-house, depending on staffing resources and capacity.

It is anticipated that the County will continue to enter into agreements with the FWS, or other entity/contractor, for the management of Clark County tortoises at the DTCC.

This project also includes maintaining the 383-TORT phone line, which is a recorded information line updated as-needed, and participation in the Pet Tortoise Working Group.

Because of the potential changes to programmatic requirements that may occur due to the MSHCP permit and plan amendment being pursued, the exact goal(s), description, benefits and approach/methods to this project may change to reflect new requirements or direction.

**Estimated Project Cost:**

\$0 (due to prior cost savings, no additional funding is needed for the 2011-2013 biennium)

**Specific Incidental Take Permit Condition Addressed by this Concept:**

Clark County's responsibilities regarding desert tortoise pickup were established in the 1995 Desert Conservation Plan (DCP) and 2001 Multiple Species Habitat Conservation Plan (MSHCP) and Section 10 Permit #TE034927-0. The 2001 MSHCP cites the pick-up service as an important feature in the DCP in section 2.2.4.2 and lists a pick-up service for unwanted pet tortoises as a potential conservation action to address unauthorized release of captive tortoises under section 2.4.2.6, Threat 1704.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

Public Information and Education

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

Throughout Clark County

**Project Goal:**

This project will provide for education and information efforts to encourage respect, protection and enjoyment of natural ecosystems in Clark County, to increase public understanding and awareness of the value of Clark County's natural ecosystems, and to support the administration of the Desert Conservation Program.

**Project Description and Anticipated Benefit:**

Clark County's Public Information and Education (PIE) program incorporates a suite of different projects designed to promote conservation and support the administration of the Desert Conservation Program. The DCP intends to continue PIE efforts to maintain programs during the permit amendment process to ensure continuity.

**Projects include but are not limited to:**

- Mojave Max Emergence Contest and Education Program - this includes implementation and support for this program, partnering with the Clark County School District and Red Rock Interpretive Association.
- "Respect, Protect, and Enjoy our Desert" public outreach and education - this includes mass media campaigns to promote awareness of the need for responsible desert use.
- Construction site education - this includes efforts to inform developers and construction site workers on proper conduct when they find desert tortoises on their construction sites.
- Campaigns informing citizens of the laws regarding desert tortoises - this includes educating citizens on what to do if they find a desert tortoise in the wild, on highways, and on streets within urban areas, etc. to promote proper conduct.
- Community outreach - this includes promoting various aspects of the Desert Conservation Program by developing and disseminating literature and promotional products and participating in community outreach events.
- Desert tortoise habitat education and display - this includes developing and/or maintaining an educational display at the Clark County Government Center to educate the public on desert tortoises and their natural habitat.

Clark County also anticipates developing a burrowing owl education campaign to assist the community in understanding the differences between Endangered Species Act compliance and Migratory Bird Treaty Act compliance.

**Project Approach / Methods:**

Historically Clark County has contracted with various agencies and companies to complete projects that fall within the PIE program, as well as conducted some of the work with County staff. It is the County's intent to continue this process to successfully develop and implement

the PIE program. Educational efforts target specific interest groups, children, and the general public.

Because of the potential changes to programmatic requirements that may occur due to the MSHCP permit and plan amendment being pursued, the exact goal(s), description, benefits and approach/methods to this project may change to reflect new requirements or direction.

**Estimated Project Cost:**  
\$189,000

**Specific Incidental Take Permit Condition Addressed by this Concept:**

This project addresses Condition H, which requires the County carry out minimization, mitigation, and monitoring measures specified in section 2.8.3.4, Public Information and Education Program.



**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**  
Fencing Program

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**  
Large Scale Translocation Site (LSTS), Nipton Road, and the Boulder City Conservation Easement (BCCE), in Clark County.

**Project Goal:**  
This project will provide for monitoring and maintenance of existing tortoise-proof fencing at the LSTS, Nipton Road, and the BCCE.

**Project Description and Anticipated Benefit:**  
Highway fencing to prevent desert tortoise mortalities is identified as a conservation action in the Desert Tortoise Recovery Plan (1994). Thus, Clark County places a high priority on fencing or barriers to protect desert tortoise populations from highway traffic as mitigation for take of tortoises and tortoise habitat in Clark County. Although the majority of effort under this project is basic monitoring and maintenance, the DCP intends to implement efforts over and above what would be the base-level monitoring and maintenance.

This project will consist mainly of monitoring and maintenance of fences. It includes purchasing fencing supplies and equipment, as necessary. Retrofitting may be considered if deemed necessary and if funding allows.

In prior bienniums Clark County fencing efforts occurred county-wide, but given the Nevada Department of Transportation's effort to obtain their own 10(a)(1)(B) Incidental Take Permit, the County will turn all monitoring and maintenance responsibilities for all fencing, except those portions mentioned above, over to the State.

**Project Approach / Methods:**  
Clark County has historically contracted with the Nevada Division of Forestry for installation, retrofitting, and monitoring and maintenance needs, and intends to continue this course to implement that portion of this project. Clark County will coordinate with the Nevada Department of Transportation on maintenance and monitoring activities, as needed.

Because of the potential changes to programmatic requirements that may occur due to the MSHCP permit and plan amendment being pursued, the exact goal(s), description, benefits and approach/methods to this project may change to reflect new requirements or direction.

**Estimated Project Cost:**  
\$0 (due to prior cost savings, no additional funding is needed for the 2011-2013 biennium)

**Specific Incidental Take Permit Condition Addressed by this Concept:**  
This project addresses section 2.8.3.7 Construction, Monitoring, and Maintenance of Barriers along Linear Features, and Condition N, Highway and Road Fencing.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

Desert Tortoise Monitoring Pilot Study

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

The location will be the Boulder City Conservation Easement (BCCE).

**Project Goal:**

Since February 2001, DCP has funded desert tortoise monitoring and research as part of the Clark County MSHCP and associated incidental take permit (ITP). The line distance sampling (LDS) technique was implemented to estimate desert tortoise density range-wide. The LDS requires a 25 year time horizon to provide trend data (USFWS, 2010). The current MSHCP ITP is 30 years, and management action budgeting decisions are made on a two-year timeframe. Thus, LDS does not provide a timely opportunity for adaptive management by DCP. Historically, monitoring has centered on the tortoises themselves and not on their environments or threats. Ideally, MSHCP desert tortoise monitoring would capture information that can be used to correlate with habitat quality and/or threats.

Through permit amendment, the DCP is proposing a reserve system to directly mitigate for take of desert tortoises and other species throughout Clark County. In order to effectively implement mitigation measures within our reserve system we need to determine baseline occupancy trend and status of the desert tortoise. A shorter timeframe for determining occupancy status and trend is needed to allow for adaptive management of the species within the reserve system.

Whereas the FWS uses a long-term monitoring approach to recover the population based on total population estimates, the goal of the MSHCP is to implement mitigation actions such as road closures and restoration that will have direct benefit to the desert tortoise. In order to apply appropriate mitigation measures, changes in occupancy and spatial distribution which can be related to covariates of habitat and threats must be detected using a short-term approach. This data will be used for the adaptive management process in order to make changes throughout the lifetime of the permit to maintain or improve baseline occupancy status. As such, we are proposing a different approach to assess population condition.

The goal of this project is to develop a pilot monitoring study for the BCCE to establish the occupancy status and trends of desert tortoise, habitat quality and selected threats to desert tortoise in that area. This study will be developed so it can be duplicated in other MSHCP reserve area(s).

**Project Description and Anticipated Benefit:**

The establishment of an effective monitoring protocol and study effort to determine desert tortoise status and trends on the BCCE, which could be duplicated on future reserve area(s), will provide site specific information to better inform the MSHCP mitigation decision making process for development and implementation of concrete, measurable conservation actions to stabilize/improve desert tortoise populations at the site.

**Project Approach / Methods:**

Prior to the start of the 2011-2013 biennium, the MSHCP Science Advisor, other experts and DCP staff will develop a desert tortoise occupancy, habitat quality and threat monitoring design. A statistician familiar with occupancy monitoring analyses will be included in the development team. The monitoring, sampling and analysis design will be independently peer reviewed. Training will be developed and conducted annually or as needed for field staff conducting the monitoring project.

Desert tortoise occupancy monitoring and any desert tortoise handling protocols will adhere to USFWS protocols and associated permits. In addition to desert tortoise occupancy data, additional data will be collected to determine presence or absence of desert tortoise recruitment within each reserve unit. This will provide anecdotal, low cost information regarding desert tortoise demographics within each reserve unit.

Vegetation will be monitored using an established photo monitoring technique (Bennett et al 2000; Booth et al 2004, 2005a, 2005b & 2006; Gilbert and Butt 2009). Species richness, lists of species present and percent cover will be among the data collected to describe habitat quality and tested for correlation with the desert tortoise data. Photos will be archived for future use or review. The vegetation monitoring portion of this study will be conducted and funded through the Adaptive Management Program.

Threats data including roads, law enforcement citations, fence integrity, etc., will be collected from other sources and tested for correlation to the desert tortoise data. Environmental factors such as precipitation, temperature and wind will be recorded from a local weather station and tested for correlation with the desert tortoise data.

DCP staff will work with a statistician to analyze the collected data and prepare annual project reports. Each project report will receive independent peer review by a wildlife biologist.

It is anticipated that the pilot monitoring efforts will be conducted for two field seasons, over a period of 2-3 years. Monitoring will likely be outsourced, but DCP will provide hands-on project management and oversight.

**Estimated Project Cost:**

\$348,950

Monitoring design (including methods and sampling locations), photo interpretation, calibration, and peer review will be conducted and funded outside of this project concept and estimated cost.

**Specific Incidental Take Permit Condition Addressed by this Concept:**

As per USFWS 5-point policy, HCP permit holders should monitor for status and trends of covered species within their conservation reserve. This pilot study will capture that data as well as look for correlating vegetation and weather data to inform management decisions.

**Literature cited**

- Bennett, L.T., T.S. Judd and M. A. Adams. 2000. Close-range vertical photography for measuring cover changes in perennial grasslands. *Journal of Range Management* 53:634-641.
- Booth, D. T., Cox, S. E., Louhaichi, M. and Johnson, D. E. 2004. Technical note: Lightweight

- camera stand for close-to-earth remote sensing, *Journal of Range Management* 57, 675-678.
- Booth, D. T., S. E. Cox, and D. E. Johnson. 2005b. Detection-threshold calibration and other factors influencing digital measurements of bare ground, *Rangeland Ecology and Management* 58: 598-604.
- Booth, D. T., S. E. Cox, T. W. Meikle, and C. Fitzgerald. 2005a. The accuracy of ground cover measurements, *Rangeland Ecology and Management* 59:179-188.
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- Gilbert, J.A., D.R. Butt. 2009. Evaluation of digital photography as a tool for field monitoring in potentially inhospitable environments. *Mires and Peat*, volume 5, Article 05 1-6.
- US Fish and Wildlife Service. 2010. 2010 Desert Tortoise Monitoring Handbook. Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. Version: 2 March 2010.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

Riparian Property Acquisition

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

Project concept will address desert riparian habitats along the Virgin River, Muddy River and Meadow Valley Wash.

**Project Goal:**

To purchase private lands in desert riparian habitats along the Virgin River, Muddy River and Meadow Valley Wash to maintain habitat for riparian birds covered by the MSHCP.

**Project Description and Anticipated Benefit:**

This project will provide for the acquisition of riparian properties within Clark County to maintain or increase habitat value for species covered by the MSHCP, and to further the MSHCP's mitigation efforts. Once acquired, the County will provide ongoing maintenance and management of properties, including restoration. Any acquisitions conducted under this concept will be over and above current MSHCP mitigation requirements.

**Project Approach / Methods:**

Clark County has been approached by a number of willing sellers with property along the Virgin River and will be sending out a letter of inquiry to property owners along the Virgin and Muddy Rivers and Meadow Valley Wash to determine if there are additional willing sellers.

The total number and location of acres to be acquired within each area is dependent on a variety of factors including, quality and condition of riparian habitat, any improvements or degradations on the land, resolution of any survey issues, and funding availability. This stipulation is based solely on a willing buyer/ willing seller basis and Clark County reserves the right to not participate in property acquisition for any reason.

Additionally, one of the requirements of the purchase is for a cadastral resurvey to be conducted to resolve any survey issues that may impede property acquisition. The DCP will coordinate the resurveys with the Bureau of Land Management.

**Estimated Project Cost:**

\$3,200,000

**Specific Incidental Take Permit Condition Addressed by this Concept:**

This project addresses section 2.8.3.5, Purchase of Grazing Allotments and Interest in Real Property and Water.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Project Concept Summary Form: 2011-2013 Biennium**

**Project Name:**

MSHCP Permit Amendment Transition

**Location of activities, MSHCP Management Area (IMA/LIMA/MUMA/UMA) and land manager/owner:**

Not applicable

**Project Goal:**

The goal of this MSHCP amendment transition project concept is to prepare for, plan and begin to implement the minimization, mitigation and conservation strategies developed as part of the MSHCP amendment.

**Project Description and Anticipated Benefit:**

The DCP is currently pursuing a formal amendment to the Clark County MSHCP and Section 10 Incidental Take Permit. The DCP has been working with stakeholders and a community advisory committee to develop new or updated minimization, mitigation and conservation strategies to be implemented under the amended permit and plan. The amended plan is expected to be submitted to USFWS in Spring 2011 for approval. This concept is based on proposals under discussion that are expected to be included in the final plan, including:

- Management of reserve lands for conservation purposes
- Mandatory pre-construction clearances of certain covered species
- Construction worker education
- Seed collection for covered plants

**Project Approach / Methods:**

Adjustments to the infrastructure and administration of the DCP will need to be considered to address new or updated minimization, mitigation and conservation strategies to ensure a smooth and efficient transition for compliance with the new requirements. This could include conducting management analyses, developing business and management plans, establishing new programs, software development, preparing the legal property boundary and description of the reserves, purchasing insurance, resolving any issues with real estate transactions, public outreach, hiring additional temporary and/or permanent staff, hiring technical experts, providing staff training and development, coordinating the establishment of new contracts and interlocal agreements, purchasing equipment and supplies, and addressing any legal needs.

Because of the uncertainty of the new MSHCP requirements given the date of the development of this concept and the schedule for finalizing the amended MSHCP, the exact transition activities to be implemented are unknown and will be based on the new requirements and direction established in the final amended plan and permit.

**Estimated Project Cost:**

\$2,215,261

**Specific Incidental Take Permit Condition Addressed by this Concept:**

Not applicable.

**Multiple Species Habitat Conservation Plan (MSHCP)  
Desert Conservation Program (DCP)  
Permit Amendment Project Budget: 2011-2013 Biennium**

Commitment Item Name	7/1/11-6/30/13
Salaries & Benefits	\$1,404,661.00
Training	\$ 16,000.00
Professional services for clearances/surveys	\$ 16,000.00
Information Technology	\$ 50,000.00
Construction Personnel Training Program	\$ 10,000.00
DT Handling class	\$ 30,000.00
License Plate Programmatic	\$ 8,000.00
Legal	\$ 300,000.00
Real estate consultant	\$ 30,000.00
Development advisor/consultant	\$ 50,000.00
Vehicle Transfer Fees	\$ 600.00
Fee Consolidation	\$ 300,000.00

TOTAL FOR TRANSITION

<b>\$2,215,261.00</b>
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**Attachment 3  
Responses to USFWS Comments**

Project	Comment	Response
Administration	We are concerned about the high proportion of the budget that is dedicated to administration, for both the current HCP and the HCP Amendment Transition project, given that the intent of the HCP is to implement conservation actions for the covered species and the number of conservation projects has decreased from previous biennia.	The administration budget includes costs associated with managing over \$14 million dollars in conservation funding from prior bienniums and costs associated with implementing conservation actions in the 11-13 biennium. Implementation costs will be shown separately to address this concern.
Amendment Transition	We are concerned about the high proportion of the budget that is dedicated to administration, for both the current HCP and the HCP Amendment Transition project.	The transition budget is addressing anticipated costs related to changes that need to occur to ensure the permittees are able to effectively implement the amended plan and permit.
Amendment Transition	We would like more information on some of the components of the Amendment Transition project that may become incorporated into the HCP amendment before approving these budget items (so that we avoid being perceived as predecisional), such as clearances/surveys, construction personnel training, and desert tortoise handling classes.	DCP has involved FWS in meetings and informal communications to discuss these three items. The intent in budgeting for these items is not to infer predecision but to ensure the DCP is prepared for implementation once the amendment process is complete. In some instances, USFWS has made it clear that it will not issue an amended permit if species clearances are not included. Advanced planning to accommodate clearances seems prudent to the DCP.
Desert Tortoise Monitoring Pilot Study	We would like an opportunity to review and comment on the study design prior to approving the implementation of this budget item, since this monitoring design is intended to be used for the larger reserve system to be included in the permit amendment. There may be opportunities to incorporate some elements into the design that will better meet your needs, given your intent to monitor occupancy and distribution of desert tortoises.	DCP has provided the USFWS the opportunity to participate in a workshop discussing the methods and monitoring design of the proposed pilot study. The workshop was held on 9/8/10 and included USFWS, Science Advisor and DCP staff.



<p>Boulder City Conservation Easement Management, Maintenance, and Law Enforcement</p>	<p>We are ok with the maintenance and law enforcement parts of this proposal, but would like an opportunity to review your proposed restoration projects before approving this part of the budget.</p>	<p>As indicated in the project concept, restoration activities are defined in the BCCE Management Plan, which is available at <a href="http://www.accessclarkcounty.com">www.accessclarkcounty.com</a>. Projects will be further refined on a case by case basis. DCP will work with Science Advisor and other experts, as needed, to determine detailed methods for implementing these projects.</p>
<p>Adaptive Management Program, Desert Tortoise Hotline and Pick Up Service, and Fencing</p>	<p>You have not listed a budget cost for these three items because you intend to fund these projects out of savings from previous biennia. However, we would like to know how much you are proposing to spend on these projects in the next biennium so we have some indication of the amount of effort you will be expending on these activities.</p>	<p>Previous biennium funding remaining for these projects is \$1,273,383, \$595,000 and \$425,000 respectively.</p>
<p>Adaptive Management Program</p>	<p>We are also interested in better understanding the Adaptive Management process and how decisions are being and will be made using the current process that does not appear to have much input from us or other stakeholders.</p>	<p>The DCP proposed this budget process, which outlined how project concepts would be developed in response to the 2010 Adaptive Management Report and Science Advisor input (See Attachment 4), and how stakeholder input would be received, in a letter dated 4/1/10 and received agreement on the proposed process from USFWS in a letter dated 4/14/10.</p>

**Attachment 4**  
**Science Advisor Report**

# **CLARK COUNTY MULTIPLE SPECIES HABITAT CONSERVATION PLAN**

## **RECOMMENDATIONS FOR 2011-2013 IMPLEMENTATION PLAN AND BUDGET**

Prepared for:



desert conservation  
PROGRAM

Prepared by:

 Enduring Conservation Outcomes

**SCIENCE ADVISOR  
2009-ECO-801A  
D70**

**APRIL 2, 2010**

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## **ACRONYMS AND ABBREVIATIONS**

DCP	Desert Conservation Program
ESA	Endangered Species Act
IPB	Implementation Plan and Budget
IMA	Intensively Managed Area
LIMA	Less Intensively Managed Area
MSCHP	Multiple Species Habitat Conservation Plan
MUMA	Multiple Use Managed Area
Permittees	Clark County, Las Vegas, North Las Vegas, Henderson, Boulder City, Mesquite, Nevada Department of Transportation
UMA	Unmanaged Area
UNR	University of Nevada-Reno
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WAF	Work Authorization Form



## **1.0 INTRODUCTION**

The Multiple Species Habitat Conservation Plan (MSHCP) (Clark County, 2000) provides guidance on developing biennial budgets to implement the plan. The Desert Conservation Program (DCP), as the MSHCP Administrator, is responsible for developing a 2011-2013 Implementation Plan and Budget (IPB) that will be responsive to the key provisions outlined in the MSHCP. The first steps of the budget development process are to determine funding and to identify and recommend actions that further the purpose of the DCP. Certain actions are required expenditures to maintain compliance with conditions of the Incidental Take Permit and for management and implementation of the MSHCP, and therefore, are non-discretionary. These non-discretionary actions include administration and management of the MSHCP, Adaptive Management Program, Boulder City Conservation Easement, acquired properties and water rights, fencing program, tortoise hotline and pick-up services, and the public education program. Other actions that further the goals and objectives of the MSHCP but not in support of a permit condition are considered discretionary.

### **1.1 Scope of Work**

The scope of work is to recommend three to five conservation actions to implement if discretionary funds are available in the 2011-2013 biennium budget. The recommendations are based on available reports and data, and apply to developing the Adaptive Management Program and mitigation, monitoring (including long-term monitoring of the desert tortoise), research, restoration, and other requirements of the MSHCP. Recommendations regarding desert tortoise status monitoring discuss monitoring methods appropriate and relevant to the MSHCP.

### **1.2 Approach and Outcome**

The approach entailed a review of the MSHCP and supporting guidance documents (i.e., Implementing Agreement, Incidental Take Permit, and Memorandum of Agreement) to determine priorities for selecting and implementing conservation actions that achieve MSHCP goals and objectives. The Science Advisor team reviewed the information presented at the 2009 Symposium, project information presented in the 2007-2009 Biennium Progress Report, and data from the Species Status Database and Implementation Database in attempt to understand the types of projects that have been implemented. The intent of these reviews was to determine if other conservation actions could benefit from the outcomes of these projects.

The team also reviewed status reports on desert tortoise range-wide monitoring since 2001 completed by U.S. Fish and Wildlife Service (USFWS), University of Nevada-Reno (UNR), and U.S. Geological Survey (USGS), Desert Tortoise Recovery Plan, Draft Revised Recovery Plan, Desert Tortoise Recovery Plan Assessment, and Desert Tortoise Population Monitoring Handbook. The intent of these reviews was to become familiar with the status and results of the monitoring program and to determine the applicability of the results to achieving the measurable biological goals stated in MSHCP.

The desired outcome was the identification of science-based criteria by which conservation actions can be recommended and prioritized for implementation. These criteria were applied to possible conservation actions to determine their merit for discretionary funding considerations.



## **2.0 ESTABLISHING PRIORITIES**

This section summarizes the Science Advisor team's review of the MSHCP and guidance documents for priorities and science-based criteria that would guide the recommendations of conservation actions.

### **2.1 MSHCP Conservation Priorities**

The MSHCP establishes a broad set of goals and objectives to guide implementation of the plan, with the primary purpose of achieving balance between long-term conservation and recovery and the beneficial use of the land. These goals and objectives represent the interests of all participants, and as such, cover a wide range of biological, social, and economic expectations relative to the success of implementation.

Two generalized goals are specified for all covered species: (1) allow no net unmitigated loss or fragmentation of habitat; and (2) maintain stable or increasing population numbers. There are measures to minimize and mitigate effects of the action and a lengthy list of conservation actions defined by a set of broad categories (i.e., information and education, research, inventory, monitoring, habitat restoration and enhancement). The supporting guidance documents have consistent conditions and conservation categories.

The MSHCP was developed to meet the requirements of the Endangered Species Act (ESA). The USFWS Habitat Conservation Planning Handbook and Addendum (i.e., 5-point policy) (Federal Register, 2000) and other guidance provide general expectations relative to meeting ESA requirements. Habitat conservation plans must describe measures to minimize and mitigate effects of the permitted action to ensure that covered species will be conserved and to contribute to their recovery. These measures need to address the specific conservation needs of the species. The primary focus is on actions leading to conservation of covered species and their habitats, effectiveness of the mitigation measures, and adaptive management.

Although the MSHCP and supporting guidance documents provide broad sets of guidance and expectations about the implementation and success of the plan, there are no explicit statements about the relative importance of the objectives or actions for implementing the plan. There are no priorities specified among the broad categories or lists of conservation actions and where specific species or areas are mentioned, the guidance is generally broad. The implication is that priorities among all expectations are equivalent and that all actions are equally important to implementation and success of the plan.

Given the general nature of the plan guidance, the question is whether priorities to help identify conservation actions can be inferred from these documents. The general theme for the most part is on conservation of covered species and their habitats and on actions that ensure success of the plan. As such, the broad categories established by the MSHCP are all important to the success of implementing the plan as modified or updated through ongoing actions and related reports. Although not stated, the plan implies that priorities within these broad categories would be established as implementation progresses.

### **2.2 Summary**

Establishing priorities for identifying conservation actions to implement offers benefits and values to the DCP. Explicit priorities would provide consistent guidance for DCP actions and funding of projects, a proactive and measurable approach for program work, and a comprehensive and effective approach to meeting the goals and objectives of the



MSHCP. Explicit priorities for conservation actions would also provide clarity on the role of the DCP and likely improve communication among partner agencies and Permittees during the biennial budget process. While establishing priorities may be a difficult task, it would have immediate and long-term benefits for managing the program.

### **3.0 SELECTION CRITERIA**

Although no explicit priorities are stated in the MSHCP and supporting guidance documents, general criteria are mentioned. Many of these criteria have been used in efforts to prioritize funding for conservation actions in previous budget development processes. The Science Advisor team used the following criteria to screen prospective conservation actions based on the review of the available reports and information, including past proposals and past prioritization efforts. The criteria are not presented in priority order but are intended to be applied collectively. Criteria 1 and 2 determine what species or ecosystem is considered for selection. Criteria 3, 4, and 5 determine relevance to the MSHCP, biological objectives, and urgency and are intended to be assessed equally, whereas Criterion 6 regarding opportunities is intended to be applied to the results of Criteria 3, 4, and 5.

#### **1. Species – The proposed conservation action addresses a priority species for the MSHCP.**

The Science Advisor recommends that “priority species” be defined as the list proposed for coverage under the proposed MSHCP amendment. If differentiation among these species is needed, first priority would be to species that are either listed or candidates for listing as threatened or endangered by the USFWS, or are similarly listed by the State of Nevada.

#### **2. Habitat and Ecosystem – The proposed conservation action addresses a habitat or ecosystem that supports a priority species.**

The Science Advisor recommends that conservation actions be directed at specific habitats or ecosystems in which one or more “priority species” occur.

#### **3. Relevance to MSHCP – The proposed conservation action achieves the goals and objectives of the MSHCP.**

The Science Advisor recommends that a conservation action mitigates or minimizes impacts on populations or habitat losses related to development. Mitigation and minimization actions should address habitat loss or fragmentation by protecting undisturbed lands, or should maintain stable or increase populations of “priority species” by protecting or managing habitat for species populations.

#### **4. Biological Objectives for a Species – The proposed conservation action achieves a biological objective for the priority species.**

The Science Advisor recommends the proposed conservation action achieves a biological objective for the priority species. An action could directly benefit the species such as fencing to prevent damage from grazing or illegal access, or indirectly benefit the species by understanding how to successfully restore habitat in which the species occurs. Indirect benefits can support immediate actions or provide a greater understanding of the life history and/or ecology of the species. The action can reduce the uncertainty about the management, restoration, or recovery of a priority species.





**5. Urgency – The proposed conservation action will eliminate or reduce a threat to the priority species.**

The Science Advisor recommends that a proposed conservation action that addresses or relates to a threat to the priority species, population, or habitat be implemented immediately. The urgency of the threat and therefore the immediacy of implementation can be determined by assessing the severity (i.e., how severe the threat is to the species), scope (i.e., how widespread the threat is), and the timeframe of the threat (i.e., immediate, near future, future). A conservation action that addresses multiple threats should be a higher priority for implementation.

**6. Opportunities – The proposed conservation action will leverage opportunities with other actions.**

The Science Advisor recommends that a proposed conservation action address unique opportunities, such as leveraging resources (i.e., funding, staff), planning windows, partnerships with agencies, or the timing of implementation in relation to other projects.

Although other criteria could be included, such as collaboration among different partners, the list above is a starting point in recommending conservation actions for the 2011-2013 biennial budget.

#### **4.0 RECOMMENDED CONSERVATION ACTIONS**

The supporting documents for the MSHCP do not establish explicit priorities for making decisions on program actions and funding projects. However, general criteria are implicated, including, as outlined above, a priority group of species, relevance to the MSHCP, achieving the biological objectives for species, and urgency of the conservation action. Using these general criteria, the Science Advisor team recommends five conservation actions which should be considered priority projects for the DCP to address. Although this effort was not meant to generate a comprehensive list, the Science Advisor team based these recommendations on the limited understanding of the past and ongoing projects addressing covered species. There are other high priority projects that could be added to this list but the intent is for the general criteria to help develop these priority projects.

##### **4.1 Predictive Modeling of Habitat and Occurrences-Las Vegas Bearpoppy and Las Vegas Buckwheat**

The Las Vegas bearpoppy and the Las Vegas buckwheat are two plant species on the proposed species list for the MSHCP amendment (Criterion 1). Both occur in the Mojave Desert scrub ecosystem, the primary ecosystem lost to development in Clark County (Criterion 2) and are the primary focus of mitigation and minimization efforts for the DCP (Criterion 3). Predictive modeling of these species (and possibly others, such as penstemon) would be valuable in guiding surveys to identify new populations, prioritize locations for conservation action, monitor changes in habitat within and adjacent to populations, and assist in minimizing and mitigating disturbances. With the recent work and new data layers on geology and vegetation nearly complete, there is a unique opportunity (Criterion 6) to provide important data to the implementation of the MSHCP.

The recently completed habitat models provide an excellent start with the model output and the lessons learned on the process. The current project modeling geology, landforms, and habitat with these rare plant species should be completed. The accuracy of habitat models is limited because they do not take into account habitat quality, both from natural seral stages and human disturbance. It would be valuable to determine if remote sensing could assess habitat condition as well as habitat loss, and how it compares with groundtruthing in regards to accuracy, scale, and ex-



pense. The remote sensing assessment should be done with the highest resolution satellite and/or aerial imagery possible based on coverage, cost, and the use of techniques such as change detection.

#### **4.2 Post-Fire Rehabilitation of Mojave Desert Scrub Habitat**

The Mojave Desert scrub ecosystem contains many of the proposed priority species for the MSHCP amendment (Criteria 1 and 2), including desert tortoise, Las Vegas bearpoppy, Las Vegas buckwheat, several other plant species, and numerous reptiles. It is the ecosystem with the most acreage of habitat loss, and the primary ecosystem included in the conservation management categories of Unmanaged Areas (UMA) and Multiple Use Managed Areas (MUMA) surrounding the Las Vegas Valley (Criterion 3). In addition to the threat of development, there are several other threats (Criterion 5) that impact priority species in this ecosystem, including recreational use, invasive species, illegal roads and trails, and fire. Fire is a relatively recent threat to this ecosystem with the increase in fire tied to the fuels provided by non-native annual grasses and other invasive species. The Mojave Desert scrub ecosystem is not fire adapted and thus understanding the effects of fire and how to rehabilitate habitat impacted by fire is an urgent need. Ongoing research provides an opportunity (Criterion 6) to gain that knowledge.

Continued assessment of post-fire rehabilitation of Mojave Desert scrub habitat is recommended as a priority project for the next biennium. The ongoing work of assessing the effectiveness of different restoration treatments (Clark County, 2008b) is well designed and because of the slow establishment and growth rates, requires more time to assess the different treatments. Knowledge gained in this study will also be valuable in restoration of other degraded sites in this ecosystem. It is therefore recommended that the current study be expanded to include assessing methods of reducing fire in this desert ecosystem in the future. The additional assessment could address whether non-native annuals can be controlled in the Mojave Desert scrub and what protective measures, such as firebreaks, can be established to reduce the extent of fire.

#### **4.3 Burrowing Owl Translocation and Habitat Restoration**

The burrowing owl is a proposed priority species for the MSHCP amendment (Criterion 1) and has directly experienced loss from development in the Las Vegas Valley (Criterion 3). A significant portion of the species breeding habitat (44 percent) occurs within the conservation management areas of MUMAs and UMAs (Boykin et al., 2007), putting the species at risk of losing significant habitat. The presence of burrowing owls and habitat on private lands likely to be developed is of concern (Criterion 5). The USFWS distributes pamphlets on protecting burrowing owls at construction sites and has recently reminded home builders of their responsibilities for compliance with the Migratory Bird Treaty Act. A recently completed USGS study of burrowing owls in Clark County for the DCP provides data on population densities, reproductive success, and habitat and landscape variables associated with nest success and occurrence. The information from this study provides the opportunity (Criterion 6) to support translocation and restoration with minimal uncertainty (Criterion 4).

A project focusing on the translocation of displaced birds to artificial burrow systems in protected sites in the urban areas and in Intensively Managed Areas (IMA) or Less Intensively Managed Areas (LIMA) with suitable habitat outside of the Las Vegas Valley should be considered a potential priority project for the DCP. The translocation of birds to IMAs and LIMAs would limit loss to the species. The reestablishment of burrowing owls within protected urban areas would also limit take but would additionally provide areas for public viewing and education about the MSHCP and DCP. The methods for establishing artificial burrow systems are well known, as are the methods for evaluating



success (Smith & Belthoff, 2001a, 2001b; Barclay, 2007; Crowe & Longshore, 2009; Arizona Game and Fish Department, 2010). These activities would work toward a biological objective for the species as well as provide a visible and highly public example of successful implementation of the MSHCP. The volunteers from the Urban Burrowing Owl Project through the Red Rock Audubon Society provide an opportunity for implementation of such a conservation action.

#### **4.4 Desert Tortoise Monitoring**

The DCP has provided funding for status monitoring of the desert tortoise since the inception of the MSHCP. This monitoring program is part of the range-wide program implemented by the USFWS in 2001 as part of the recovery plan for the desert tortoise. The monitoring program has expanded over the years to address sampling design, data collection protocols, monitor/surveyor consistency and accuracy, and quality assurance measures.

Historically, monitoring has centered on the tortoises themselves and not on monitoring their environments or threats. The current monitoring procedure (line distance sampling) is difficult and data results have a large amount of potential bias due to under-sampling of tortoises in burrows, and the sampling strategy results in some areas being over- or under-sampled relative to their occupancy (University of Nevada-Reno, undated). Density estimates require real-time estimation of daily activity during the actual periods tortoises are counted (USFWS, 2009). Additionally, analysis of current monitoring approaches to estimate tortoise population densities show that it will be nearly impossible statistically to discern an upward or stable population trend, even over a 25-year time span, which is a requirement of the current delisting criterion (Tracy et al., 2004).

Based on the recommendations from Tracy et al. (2004), the first delisting criterion from the 1994 Recovery Plan is proposed to be revised. The draft Revised Recovery Plan (USFWS, 2008b) has expanded the recovery criteria from one based on numbers and density to a multi-dimensional approach that adds spatial extent and occupancy with recovery units and appropriate habitat. This approach would randomly sample grid cells within a population unit or recovery unit and record presence/absence of desert tortoise individuals and signs of desert tortoise occupancy (burrows, scat, tracks). Habitat and threat indicators would also be recorded. While not providing an estimate of the total population, this approach does detect changes in occupancy and spatial distribution and can relate this to covariates of habitat and threats. This revision recognizes that the measurement of recruitment and survival across the entire range of the tortoise is logistically difficult and prohibitively expensive (USFWS, 2008b) and that there is a more efficient approach to assess population condition.

The draft Revised Recovery Plan recommends that actions that monitor progress toward recovery (i.e., monitor desert tortoise population growth and monitor the extent of tortoise distribution in each recovery unit) are a Priority 3 (of 3) for implementation. Recovery actions that protect and manage existing populations and habitat are assigned Priority 2 for implementation. These actions include protecting intact desert tortoise habitat and restoring habitat.

As stated earlier, the primary focus of habitat conservation plans are on actions leading to conservation of covered species and their habitats, determining the effectiveness of these actions towards minimizing incidental take, and adaptively managing efforts in response to the outcomes. The USFWS states that the goals and objectives of a habitat conservation plan may not be equivalent to a species' recovery plan. The USFWS also acknowledges through their 5-point policy that monitoring measures should be commensurate with the scope and duration of the project. The MSHCP and Incidental Take Permit (USFWS, 2001) have a 30-year duration. Obtaining credible density esti-



mates through the currently funded approach of long-term status monitoring (25 years) to determine progress towards recovery is uncertain and does not provide information in a timeframe consistent with the duration of the MSHCP and mandate of the DCP.

The multi-dimensional approach to determining recovery presented in the draft Revised Recovery Plan pertains more directly to the MSHCP. Recognizing the pending revisions to the Recovery Plan delisting criteria and recovery action priorities, conservation actions addressing the desert tortoise (Criterion 1) should focus on habitat (Criterion 2) and threats (Criterion 5). A conservation action that develops occupancy monitoring and assessment of habitat condition, including threats, should be considered as a priority project for the DCP. The Science Advisor team recommends ending monetary support of the current USFWS efforts to estimate population numbers. An issue that should be resolved is the spatial area of interest to the MSHCP (Criterion 3). Past monitoring work has focused only in desert tortoise recovery units within the county, while the area in which tortoise is found and where take occurs are a much larger spatial area.

#### **4.5 Desert Riparian Restoration**

The desert riparian/aquatic ecosystem has lost seven percent of its total habitat since 2001 (Criteria 3 and 5), although the specific cause of this habitat loss is not completely known (Clark County, 2010). This amount of habitat loss is significant for one of the more important habitats for MSHCP covered species (Criteria 1 and 2). There are 14 covered species occurring in or using this ecosystem, including the southwestern willow flycatcher and relict leopard frog (Provencher & Andress, 2004). The aquatic habitat is also significant for other federally-endangered and candidate species. The threat of habitat loss to these species is compounded by the landscape impacts of this loss (loss of connectivity, alteration in flows, increase in sediment), and the wide-spread presence of non-native species in most of the remaining desert riparian habitat (Criterion 5). Further assessment of the habitat loss in this ecosystem was recommended (Clark County, 2010).

The multiple threats to the species in this ecosystem require an ecosystem approach to restoration (Zavaleta et al., 2001). Restoration of aquatic systems requires working within the whole watershed to address issues of hydrology and sediment. In some cases, invasive species control also requires an ecosystem approach to insure that all seed sources are removed and that the removal does not allow other invasive species to become established, increase erosion, or eliminate habitat for significant species (Zavaleta et al., 2001). An ecosystem approach to desert riparian restoration needs a well developed spatial and temporal restoration plan based on the most recent scientific understanding and recognition of what uncertainties exist.

The Science Advisor recommends an ecosystem approach to desert riparian restoration for the Muddy River watershed. The ultimate goal of the riparian restoration for selected segments of the watershed would be to maintain riparian cover for birds and other aquatic and terrestrial species while progressively reducing tamarisk abundance and increasing cover of native species. The scale of an initial restoration plan should be the property that is owned by Clark County, but a larger scale restoration plan should also be developed with other conservation and public landowners in the watershed. Provencher and Andress (2004) and Provencher et al. (2005) provide an excellent summary of priority research and management for the restoration of both the riparian and aquatic components of this ecosystem.



This conservation action focuses on the covered species, primarily birds that use the riparian vegetation for part of their life history. The focus on birds is because the in-stream restoration of the Moapa dace and other endemic and rare fish is extremely expensive and has high scientific and social uncertainty for success. Off-stream conservation of these species, as is being done, may be more feasible.

The riparian restoration efforts would address multiple ecological issues:

- **Hydrology:** Research has shown that native plant species can maintain abundance and can become established with low intensity, long duration spring flows but that tamarisk dominates with reduced flows, a lower groundwater table, and high saline soils (Stromberg et al., 2007). The Provencher and Andress (2004) report provides an excellent basis for developing a restoration plan that addresses the hydrology of the watershed.
- **Geomorphology and Stream Bank Structure:** Reconnecting the river to the floodplain (restoring a natural topography of stream banks and distance to water table similar to pre-impact conditions) provides the optimal condition for the establishment of native species. A long length of the floodplain is disconnected from the river by entrenchment and straightening (Provencher & Andress, 2004). The DCP should explore a range of options, including stream bank restoration, to insure the establishment and maintenance of native species.
- **Maintaining Riparian Vegetation Cover:** While dense stands of tamarisk reduce overall biodiversity and can become a fire hazard, studies have shown that it provides habitat for many bird species (Fleishman et al., 2003; Sogge et al., 2008) and may not impact the water table through evapotranspiration as much as previously thought (Glenn & Nagler, 2005). The restoration efforts should be a progressive replacement of tamarisk through removal and inter-planting with native species (Zavaleta et al., 2001; Fleishman et al., 2003; Provencher & Andress, 2004). The goal would not be the complete removal of tamarisk but control of the areas in which it grows. The progressive restoration efforts spread the estimated costs out over a longer period of time (Provencher et al., 2005). Additionally, reducing tamarisk abundance and increasing cover of native species will lessen the impact of the introduced biocontrol tamarisk beetle on overall riparian cover.
- **Developing Structural and Compositional Heterogeneity:** The highest avian use and diversity are found in areas with both structural and compositional heterogeneity in the vegetation, which includes large trees, different seral stages of vegetation, and a range of different plant species (Fleishman et al., 2003; Walker, 2005). This potentially maximizes the diversity of other species groups.
- **Reducing Fire Hazard:** Dense stands of tamarisk are fire hazards. A restoration effort could integrate fire breaks to reduce the extent of fire damage (Clark County, 2008c).

Monitoring the progress and results of restoration is essential and using an adaptive management approach to test and refine restoration actions will maximize success. This approach is even more important when restoration actions are costly and their outcomes are uncertain. Provencher et al. (2005) outlines some details on monitoring.



## 5.0 REFERENCES

NOTE: References noted by an asterisk are not cited in the text but are general references related to the MSHCP used to assess priorities and develop the approach and recommendations in the report. All other references are cited within the report.

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**Attachment 5  
Response to Public Comments**

Project	Comment	Response
General	If the County does endeavor in acquiring Reserve lands into County management where is the cost associated with this effort noted in the budget?	The Reserve proposal is part of the MSHCP permit amendment process. Costs associated with this effort are covered with current or previous biennium budgets, are addressed in the Permit Amendment Transition budget, or will be addressed in future budgets, as this effort is a multi-year effort.
General	Where are the research and related projects for other covered species separate from Desert Tortoise identified in the budget?	The purpose of the 2011-2013 budget is to maintain and monitor certain mitigation efforts to ensure compliance with the MSHCP and ITP. The County is not required to expend funding on research for all covered species in each biennium.
General	Is the \$3.2 million to acquire the proposed reserve units/areas? Why is the County interested in acquiring riparian properties only? How will these areas be managed?	The County is pursuing the potential purchase of riparian properties to address the requirement in the MSHCP. The Reserve proposal is a separate issue and is part of the MSHCP permit amendment
Property Management, Maintenance, and Acquisition	What will be the follow up strategies of County acquired water rights?	At this time, the County has contracted with Michael Buschelmann to manage acquired water rights. They are managed on a case by case basis.
Desert Tortoise Hotline and Pickup Service	The County no longer handles hotline calls re: desert tortoises which appear to be in harm's way within urban areas.	The MSHCP requires the County to provide a hotline and pickup service for tortoises displaced by development, no matter where it occurs.
Public Information and Education	Request the Public Information and Education program focus some educational messages on the problem with unwanted pet desert tortoises especially as it relates to wild populations (i.e. don't release unwanted pet desert tortoises to the wild, concern with unrestricted breeding, disease issues, etc).	Thank you for the suggestion.

Public Information and Education	Also, request more detail in the \$189,000 budget? What is the individual cost breakdown and for what efforts?	The project concept provides guidance on the efforts the County anticipates to undertake. The budget is based on past costs of similar projects or estimated costs for those items outlined. The exact costs will be determined at the time the projects are undertaken.
Desert Tortoise Monitoring Pilot Study	What is the proposed reserve system? How were the locations determined? Who will manage the lands? How will the lands be managed? How will the reserve system directly mitigate for take of desert tortoises and other species? Why is Clark County proposing to manage lands; isn't land management the responsibility of the Bureau of Land Management?	The Reserve proposal is part of the MSHCP permit amendment process. The County and Incorporated Cities are able by law to manage land.
Desert Tortoise Monitoring Pilot Study	It is understood that the County needs to determine baseline occupancy and trend status of the desert tortoise in a timeframe relative to the timeframes of the ITP and budget decision-making. However, desert tortoises are long-lived and that biological fact alone requires long-term monitoring and assessments to accurately determine trends. Conducting shorter-term analyses may result in misleading conclusions and subsequent management actions. It is unreasonable to expect the biology of desert tortoises to align with the timeframes of government planning and actions. That being said, the USFWS utilizes LDS to monitor range-wide desert tortoise population trends. If the County's responsibility is to mitigate for local populations' reactions to local management actions, different monitoring techniques could be applicable.	Thank you for the suggestion.
Desert Tortoise Monitoring Pilot Study	Desert tortoise occupancy monitoring and handling protocols should adhere to USFWS, as well as NDOW, protocols and associated permits.	Thank you for the suggestion.