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Adaptive Management Program

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Adaptive Management is...

...the use of evidence-based data and best scientific knowledge...

...to improve management and programmatic actions and...

...reduce the uncertainty inherent in those actions.

For the MSHCP, Adaptive Management is also...

...transparent and accountable, and ...

...relevant to and focused on MSHCP-scaled questions.



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Adaptive Management Program:
Who is it?

Who is part of the MSHCP Adaptive Management Program?

- Science Advisor
- DCP Staff
- Agency Experts
- Academics
- Land Managers
- Decision Makers

& All Symposium Participants



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Adaptive Management Program: What Do We Do?

What are the purposes of the MSHCP Adaptive Management Program?

- Meeting Permit Obligations
- Increasing Effectiveness
- Reducing Uncertainty
- Increasing Transparency



Meeting Permit Obligations

- Independent, science-based advisor
- Track
 - Land use trends
 - Habitat loss
 - Species status
 - Effectiveness of mitigation
- Science Advisor recommendations for future implementation

Products:

Adaptive Management Reports

Science-based Implementation Plan & Budget Recommendations



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Adaptive Management Program:
Increasing Effectiveness

Increasing Effectiveness

– Peer reviews

- Formal review of a document and/or dataset by a peer, resulting in written comments and suggestions
- Review of symposium presentations
- Reduce any perceived conflicts of interest
- Focused questions
- Strict deadline



Increasing Effectiveness

– Peer reviews

- Written comments provided to authors/presenters
- Comments addressed in final products
- DCP uses for future project design



Products:

Written peer reviews



Increasing Effectiveness

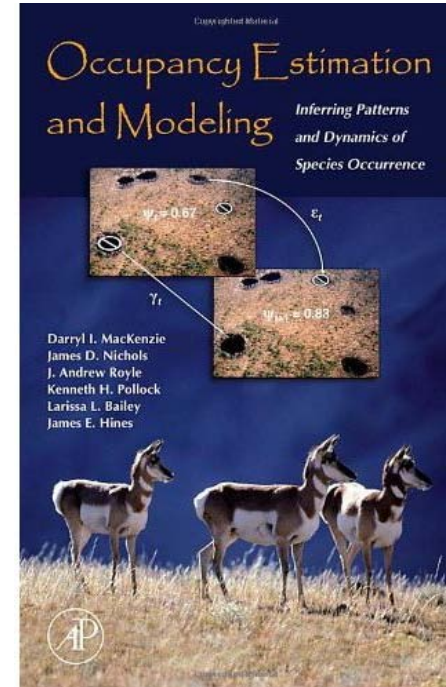
– Monitoring Evaluation and Design

Desert Tortoise Protocol

- Occupancy Sampling
- Anonymous peer review through USGS
- Pilot test at full scale in the Boulder City Conservation Easement

Products:

Monitoring tailored to MSHCP-scale questions



Occupancy Estimation and Modeling (2005) MacKenzie et. al.



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Adaptive Management Program: Increasing Effectiveness

Increasing Effectiveness

– Science Advice

- Ongoing regular involvement
- Subcontracts with other experts





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Adaptive Management Program: Increasing Effectiveness

Increasing Effectiveness

- Monitor effectiveness of specific conservation actions



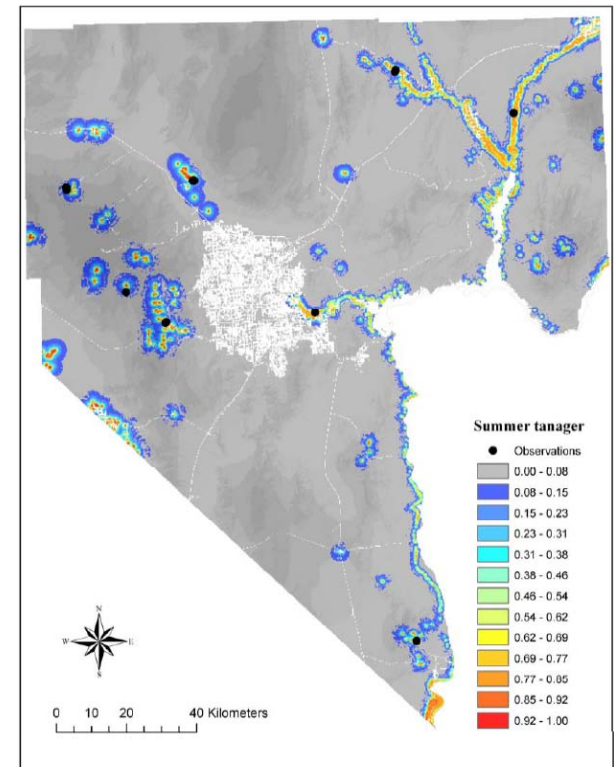
Products:

Effectiveness Monitoring data and final reports



Reducing Uncertainty Using the Available Data

- Species monitoring and habitat modeling projects
- New, County-wide geomorphology and vegetation cover datasets from University of Nevada Reno
- MSHCP project data and data from external sources



Summer Tanager habitat
model



Reducing Uncertainty Using the Available Data

- Upgrade and updates to Species Status Database
 - Catalogs the available species data for faster analyses and data sharing





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Adaptive Management Program: Reducing Uncertainty

The screenshot displays the GISMO web application interface. At the top left is the "CLARK COUNTY REVEAL" logo and the "OpenDoor Training" text. A search bar with a "Submit Quick Search" button is located at the top center. Below the search bar are navigation buttons for "Search", "Display Options", "Tools", "Points of Interest", and "Resources". On the left side, there is a "Resources" sidebar with buttons for "Comments / Suggestions", "Survey", "Show Legend", "Quick Guide", and "Introduction". Below the sidebar is an "Information" box containing the following text:

Information
Current Tool: Select Property
Coordinates in State Plane ft
X: 844020 **Y:** 26650296
Flight Date: Most Current Flight
Current View: Boulder City
Conservation Easement
1: 32000.2560000001

The main map area shows a satellite-style view with various colored overlays: a red boundary, a green boundary, a blue boundary, and a yellow hatched area. Numerous purple dots are scattered across the map. A scale bar at the bottom indicates "1 Miles". The GISMO logo is visible in the bottom right corner of the map area. The browser's address bar shows "Local intranet" and the page is zoomed to 100%.



Reducing Uncertainty Using the Available Data

– GIS support

- MSHCP product /design review and Adaptive Management analyses
- Property acquisitions
- Reviews of proposed third party projects on reserve areas





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Adaptive Management Program:
Increasing Transparency

Transparency and Accessibility of Products

– Symposia

- Annual, open to public
- Presentations made available on website

Products:

This symposium, archives of presentations, written review comments





Transparency and Accessibility of Products

– Summarizing implementation status

- 604 conservation actions plus permit requirements
- Tabular
- Updates ongoing

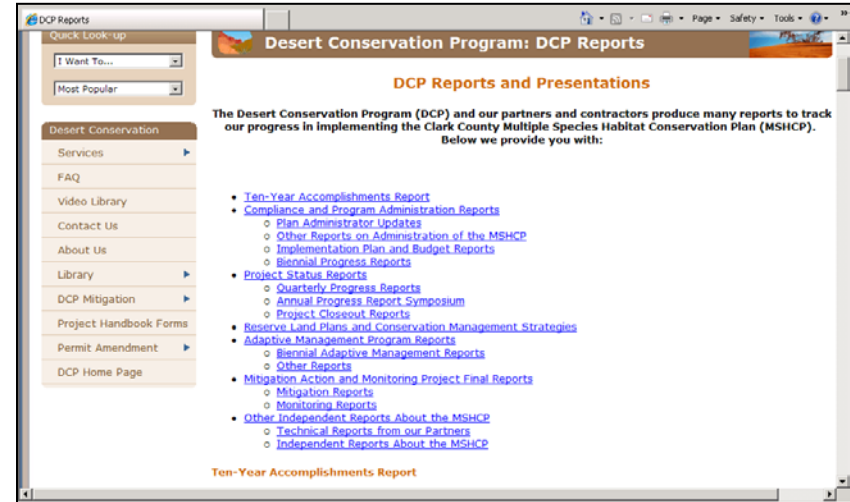
Products:
Databases and summary reports

	C	E	F	G
1	MNHCP_Chapter	MNHCP_Conservation_Action_Description	conservation_Acts	MNHCP_Conservation_Action_Category
2	2.2.6.1	Provide environmental information and educational materials to the public from the Red Rock Canyon NCA (MNCNA) visitor center.	SLM(1)	Public Information and Education
3	2.2.6.1	Promote awareness among users and managers of caves on public lands through development of informational and educational materials concerning conservation methods and potential hazards. Develop brochures, pamphlets, and interpretive signs for covered species and the habitats of which they depend as determined to be appropriate by SLM in coordination with the HCP I & M Committee.	SLM(4)	Public Information and Education
4	2.2.6.1	On a case by case basis, SLM will install signs at springs explaining the need for their protection and to reiterate State law that prohibits camping within 100 yards of water sources.	SLM(5)	Public Information and Education
5	2.2.6.1	Encourage the obtainment and dissemination of knowledge regarding the Mojave Desert ecosystem including desert tortoise biology.	SLM(6)	Public Information and Education
6	2.2.6.2	Manage the Desert Tortoise Conservation Center Management Area (CCMA) (this includes the Desert Tortoise Conservation Center and the surrounding Basin consisting of 11,014 acres) to support desert tortoise research and other research associated with the M.	SLM(7)	Research
7	2.2.6.2	SLM will cooperate with the I & M Committee and through the Adaptive Management Plan participate in the identification, development, and implementation of research projects located on Public Lands. Emphasis shall be placed on research that addresses managing	SLM(8)	Research
8	2.2.6.2	Survey abandoned mines for the presence of bats before authorization of mine closures. If use of the mine by bats is documented, consider installing bat gates to ensure that the habitat continues to be suitable for bats, while promoting public safety. Test	SLM(9)	Research
9	2.2.6.7	Identify, evaluate, manage and protect cave resources on public lands for the purpose of maintaining the unique, non-renewable, and fragile biological, scientific, and recreational values for present and future uses.	SLM(11)	Land Use Policies and Actions
10	2.2.6.5	Continue to conduct inventories as determined by the SLM and I & M Committee on special status plant species to determine their distribution, abundance, and potential threats and take appropriate actions to protect the habitat of these plant and animal so	SLM(12)	Protective Measures
11	2.2.6.3	SLM will cooperate with the Nevada Division of Wildlife and Clark County I & M Committee to implement surveys to determine the distribution, abundance, and potential threats on the southwestern willow flycatcher, phainopepla, summer tanager, Arizona Bell'	SLM(13)	Inventory/Status
12	2.2.6.3	SLM will develop and maintain a digital data base for all inventory data collected and cooperate with other participants in establishing and maintaining a repository for digital biological data covering Clark County.	SLM(15)	Inventory/Status
13	2.2.6.3	Inventory and monitor mesquite and acacia habitats in Amargosa Valley Area, Stump Springs, Pahump Valley, Mike Wash, Potts Wash, Meadow Valley Wash and other areas determined to be important as nesting and/or roosting habitat for resident and non-resident	SLM(17)	Inventory/Status
14	2.2.6.3	Improve acacia, riparian and mesquite woodlands including Meadow Valley Wash.	SLM(18)	Inventory/Status
15	2.2.6.3	Develop and implement a monitoring program for the Las Vegas bluegrass in cooperation with the Lake Mead National Recreation Area. The presence or absence of known pollinators will be documented as a part of the monitoring study.	SLM(20)	Protective Measures
16	2.2.6.4	Develop and implement a monitoring program for SLM Special Status Plants such as the alkali manzanita lily, blue diamond shellia and covered and evaluation moss species in the Red Rock Canyon NCA.	SLM(22)	Monitoring (Trends)
17	2.2.6.4	Monitor road and trail proliferation in desert tortoise ACTCs, Las Vegas bluegrass management areas, and WSAs.	SLM(23)	Monitoring (Trends)
18	2.2.6.4	Monitor water table levels at the Pahump, Moapa, Stovett Valley, and Stump Springs mesquite woodlands.	SLM(24)	Monitoring (Trends)
19	2.2.6.4	Monitor water table sources including springs, vases and streams to assess condition and trend.	SLM(25)	Monitoring (Trends)
20	2.2.6.4	Continue to establish and road vegetation trend monitoring plots in desert tortoise Critical Habitat (and/or in desert tortoise ACTCs once established) and in active grazing allotments to determine vegetation trend over time.	SLM(26)	Monitoring (Trends)
21	2.2.6.4		SLM(28)	Monitoring (Trends)



Transparency and Accessibility of Products

- Digitizing products of older projects
 - Completed in 2011
- Putting MSHCP products on the web
 - Ongoing
 - New format



<http://www.clarkcountynv.gov/depts/dcp/Pages/default.aspx>



- [Ten-Year Accomplishments Report](#)
- [Compliance and Program Administration Reports](#)
 - [Plan Administrator Updates](#)
 - [Other Reports on Administration of the MSHCP](#)
 - [Implementation Plan and Budget Reports](#)
 - [Biennial Progress Reports](#)
- [Project Status Reports](#)
 - [Quarterly Progress Reports](#)
 - [Annual Progress Report Symposium](#)
 - [Project Closeout Reports](#)
- [Reserve Land Plans and Conservation Management Strategies](#)
- [Adaptive Management Program Reports](#)
 - [Biennial Adaptive Management Reports](#)
 - [Other Reports](#)
- [Mitigation Action and Monitoring Project Final Reports](#)
 - [Mitigation Reports](#)
 - [Monitoring Reports](#)
- [Other Independent Reports About the MSHCP](#)
 - [Technical Reports from our Partners](#)
 - [Independent Reports About the MSHCP](#)




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Adaptive Management Program: Increasing Transparency

Mitigation Action Reports

-  [Effectiveness of Riparian and Spring-fed Wetland Restoration Treatments - Jul 2011](#)
-  [Relict Leopard Frog Management - Nov 2010](#)
-  [Riparian Property Management Report - Nov 2010](#)
-  [Spring Mountains NRA Fuel Reduction Treatment Effects Report - Jul 2010](#)
-  [Mojave Max Yearbook - Jul 2009](#)
-  [Desert Tortoise Translocation Environmental Assessment - Jan 2005](#)
-  [Public Information and Education Assessment Presentation - Sep 2004](#)
-  [Public Information and Education Assessment Final Report - Aug 2004](#)
-  [Rare Plant Salvage Research at Las Vegas Springs Preserve - June 2004](#)
-  [Law Enforcement Needs Assessment - Sep 2003](#)

Monitoring Reports

-  [Peregrine Falcon Monitoring - Jan 2011](#)
-  [Rare Plant Inventories Report - Nov 2010](#)



Transparency and Accessibility of Products

- Data sharing with agencies
 - Sharing species data and reports
 - Participating in Recovery Implementation Teams



Bill Horn





Future

- More of the same and...
- Design monitoring for vegetation and threats on reserves
- Reserve lands management planning assistance
- Last two years, low levels of habitat loss under MSHCP
 - No Adaptive Management Report in 2012
 - Will use 2010 report for 2013-2015 biennium planning
 - Can request similar Science Advisor analyses and recommendations if situation changes



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Questions?

Reports can be found on:

<http://www.clarkcountynv.gov/depts/dcp/Pages/default.aspx>

Adaptive Management Program funded by:

- MSHCP Mitigation Fee Section 10 funds (2009-CC-801)
- Southern Nevada Public Lands Management Act, Round 6 (2005-CC-574)