

**Annual Progress Report:
Implementation of the
Flat-tailed Horned Lizard Rangelwide Management Strategy**

January 1, 2007- December 31, 2007

Prepared by the
Flat-tailed Horned Lizard Interagency Coordinating Committee

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EXECUTIVE SUMMARY

The flat-tailed horned lizard is a small horned lizard that inhabits a narrow range within southeastern California, southwestern Arizona, and northwestern Mexico. Much of the species' historic habitat in the United States has been lost due to agricultural and residential development. A Conservation Agreement was signed by several federal and state agencies in 1997 to implement the Flat-tailed Horned Lizard Rangelwide Management Strategy. The Strategy is a long-term plan of action among signatory agencies to ensure persistence of the species. It continues to be implemented by the signatory agencies throughout the Management Areas, the RA, and other areas of flat-tailed horned lizard habitat.

Implementation activities during 2007 included regular coordination between the participating agencies through the Management Oversight Group and Interagency Coordination Committee. Authorized surface impacts remained low in Management Areas. Outreach efforts continued to include the general public and other agencies, such as the U.S. Border Patrol and Mexican agencies, as active participants in implementing the Strategy. Educational videos were produced in 2006 to inform the public and Border Patrol on issues pertaining to flat-tailed horned lizards and their habitat. Agencies conducted population inventories, trend monitoring, and research. Research this year targeted the effectiveness of mitigation measures. This information is useful in developing future management actions and in being able to make better decisions in implementing projects. No new lands were acquired within the East Mesa, West Mesa, and Yuha Basin Management Areas. Preliminary work was initiated to begin acquisitions in all management areas.

Biologists from the Alto Gulfo Preserve in northern Sonora (Mexico) renewed their involvement with the ICC. They have begun the process of creating a management strategy for FTHL in northern Mexico.

The proposed rule to list the flat-tailed horned lizard as threatened was restored in 2005. On June 28, 2006, the U.S. Fish and Wildlife Service published a notice in the Federal Register withdrawing the proposed rule, based on the conclusion that the lost habitat is not a significant portion of the range of the species. A new lawsuit was filed on December 11, 2006 in the Arizona District Court challenging the 2003 and 2006 decisions to withdraw the proposed rules to list the flat-tailed horned lizard as threatened.

The participating agencies believe the Flat-tailed Horned Lizard Conservation Agreement and Strategy continue to provide an effective management focus to conserve flat-tailed horned lizard habitat throughout its range. The majority of the tasks outlined by the Strategy are being completed on schedule. Only a few of the tasks are behind schedule.

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INTRODUCTION

On June 7, 1997, a Conservation Agreement was signed by several federal and state agencies to implement the *Flat-tailed Horned Lizard Rangewide Management Strategy* (RMS). The RMS is a plan of action to conserve the flat-tailed horned lizard (*Phrynosoma mcallii*) (FTHL) in the United States. The FTHL is a small horned lizard that inhabits creosote flats, sand dunes, and mud hills in southeastern California, southwestern Arizona, and northwestern Mexico. Much of the FTHL's historic habitat (possibly as much as 50%) in the United States has been lost due to agricultural and residential development. The RMS and the Conservation Agreement are a long-term agreement among signatory agencies to ensure persistence of the species. A revision of the RMS, with minor changes, was completed in 2003.

The following agencies are signatories to the Conservation Agreement:

- U.S. Fish and Wildlife Service (USFWS), Region 1
- USFWS, Region 2
- Bureau of Land Management (BLM), California State Office
- BLM, Arizona State Office
- Bureau of Reclamation (Reclamation), Lower Colorado Region
- Marine Corps Air Station, Yuma (MCAS-Yuma)
- Naval Air Facility, El Centro (NAF-El Centro)
- Arizona Game and Fish Department (AGFD)
- California Department of Fish and Game (CDFG)
- California Department of Parks and Recreation (CDPR)

The U.S. Border Patrol (BP) at times participates as guests in the Management Oversight Group (MOG) and the Interagency Coordinating Committee (ICC). BP elected to not sign the Conservation Agreement but they continue to work closely with staff at BLM-El Centro.

The Conservation Agreement remains in effect today, and the RMS continues to be implemented by all Conservation Agreement signatory agencies. The RMS requires that an annual report be prepared by the Interagency Coordinating Committee to monitor plan compliance (Planning Action 9.2.4). This is the ninth annual report and covers the period from January through December 2007.

In 2005, the U.S. District Court for the District of Arizona set aside the 2003 withdrawal of the proposed rule to list the FTHL as a threatened species on the grounds that the withdrawal failed to determine whether the lost historical habitat for the FTHL is a significant portion of the range for this species and thereby violated the Endangered Species Act. On December 7, 2005, the USFWS published a Federal Register Notice vacating the 2003 withdrawal and restoring proposed status to the FTHL (70 FR 72776). The comment period was reopened on March 2, 2006, for two weeks (71 FR 10631) and on April 21, 2006, for two weeks (71 FR 20637). On June 28, 2006, the U.S. Fish and Wildlife Service published a notice in the Federal Register

withdrawing the proposed rule, based on the conclusion that the lost habitat is not a significant portion of the range of the FTHL (71 FR 36745). However, a new lawsuit was filed on December 11, 2006 in the Arizona District Court challenging the 2003 and 2006 decisions to withdraw the proposed rules to list the FTHL as threatened.

IMPLEMENTATION PROGRESS IN 2007

Progress toward implementation of Planning Actions within the RMS during this period is summarized below.

Planning Action 1. Delineate and designate five FTHL Management Areas and one FTHL Research Area.

Five Management Areas (MA) and one Research Area (RA) were designated in the Conservation Agreement in 1997 and their boundaries were precisely described. Maps and boundary descriptions are available in the 2003 RMS. Through the following actions prior to this reporting period, all MAs and a portion of the RA were formally adopted within agency environmental and planning documents (see also planning action 6). Prior to formal adoption, all agencies applied provisions of the RMS to these areas.

Yuma Desert MA: MCAS Yuma finalized an Integrated Natural Resource Management Plan (INRMP) in 2007 that fully incorporates their portion of the Yuma Desert MA. For their portion of this MA, Reclamation completed a Five-Mile Zone Resource Management Plan in 2004 that incorporated the RMS, including the MA.

East Mesa, West Mesa, and Yuha Desert MAs: An Environmental Assessment proposing an amendment to the California Desert Conservation Area Plan to officially adopt these three MAs received no public protests and was signed on February 1, 2005.

Borrego Badlands MA: Anza-Borrego Desert State Park's (ABDSP) General Plan was unanimously approved by the California State Parks and Recreation Commission in 2004, giving long-range guidance and planning to the 600,000 acre park and acknowledging the FTHL RMS. A Natural Resources Management Plan to be completed in the near future will more specifically address FTHL management. Boundaries for the Borrego Badlands MA within ABDSP have been delineated in the Borrego Badlands and Clark Dry Lake areas.

Ocotillo Wells RA: The BLM portion of the Ocotillo Wells RA was designated in 2003 in an amendment to the Western Colorado Desert Ecosystem Plan. The portion of the RA owned by California State Parks has not been incorporated into planning documents but is managed by Ocotillo Wells State Vehicle Recreation Area (OWSVRA) consistent with provisions in the RMS.

Coachella Valley: BLM-Palm Springs continues to participate in the development of the Coachella Valley Multi-Species Habitat Conservation and Natural Communities Conservation Plan (CVMSHCP) that fully incorporates measures in the FTHL RMS. The CVMSHCP uses an ecosystem/habitat approach and identifies natural communities and sensitive species known or expected to occur in the Plan area. Once finalized and implemented, this Plan is designed to ensure the long-term viability of sensitive-species populations within the Coachella Valley, including the FTHL.

Planning Action 2. Define and implement management actions necessary to minimize loss or degradation of habitat.

Finished fence in October 2007, impacts have been significantly reduced. Drug smuggling, illegal immigration, and associated law enforcement activities continue to impact habitat along the international border, particularly the Yuma Desert MA. Outreach efforts to inform and educate enforcement personnel on FTHL issues continue.

The habitat impacts authorized by managing agencies within the period are shown in Table 1. Included in the remainder of this section is a narrative for each participating agency. For reference, the amount of land owned by each agency in the various MAs is shown in Table 2.

BLM - El Centro Field Office.

BLM-El Centro authorized two projects in FTHL habitat. 4.94 Acres disturbance was granted to Iceland America Energy, LLC in the Ocotillo Wells Research Area for a Geothermal Pad and access road. The Imperial Irrigation District (IID) paved 1.06 acres at Drop 20 adjacent to the East Mesa MA. Both projects were compensated for at a 1:1 ratio.

No new lands were acquired in FY2007; however, district realty specialists have begun contacting all private land owners in the MAs to determine who are willing sellers. Compensation was received from the Arizona Department of Transportation for highway construction mitigation

BLM Law Enforcement Officers regularly patrol the MAs. However, with such a large area to cover some illegal use and route proliferation continues to occur in Limited Use Areas.

The El Centro Field office received multiple solar energy applications in FTHL habitat 2007. Most of the applications ask for 500-15,000 acres. We are currently working with Stirling Energy Systems on their proposed Solar II facility north of the Yuha MA, between Interstate 8 and Evan Hewes Highway.

BLM - Palm Springs South Coast Field Office.

BLM-Palm Springs didn't authorize any impacts in FTHL habitat during 2007. They continued to enforce the Windy Point vehicle closure to protect FTHL, should they still be present in this area. BLM rangers continue to patrol the 1000 Palms Preserve, Willow Hole, and Edom Hill to keep out OHVs that may damage FTHL habitat.

BLM - Yuma Field Office.

BLM Yuma granted the City of San Luis a road, utility, and short-term right-of-way (AZA 33217) that directly eliminated 5.34 acres and indirectly isolated 56.22 acres. BLM required biological monitors and lizard-proof fencing that prevented lizards from the viable habitat to wander onto the road. BLM Yuma collected a total of \$17,606.16 for residual impacts to FTHL habitat, and deposited the funds in the AZ 320 7122 5701 account on 4/24/2007. The amount was based on \$286 per acre. BLM Yuma reached the \$286/acre figure based on the land cost rate of \$200/acre that BLM El Centro appraisers determined as fair market value in the East and West Mesa a few years ago. In addition to the land cost rate, there is an added administrative overhead surcharge of 18% and an operations cost of 25% to cover the cost of titling the land and/or managing the dollars collected bring a total to \$286/acre.

Marine Corps Air Station - Yuma.

No projects subject to the authority of the RMS were authorized in or out of the Yuma MA by MCAS during 2007. Projects described in the EIS for the Yuma Training Range Complex of 1995 are not subject to the RMS (Planning Action 2.2.1). No projects within MA were implemented pursuant to the EIS in 2007.

NAF-El Centro.

No projects authorized that impacted FTHL habitat in 2007.

Anza-Borrego Desert State Park.

The illegal sand and gravel mining operation issue of 2006 persists to this day, with the County of San Diego ineffective in enforcement of the lack of a Major Use Permit on the extraction operation. The impact this has on the State Park is the use of a public dirt road through two miles of Park land as a haul road. No other impacts encountered within FTHL habitat in 2007.

Weather year precipitation for 2006-2007 was the lowest ever recorded in Borrego Springs, with .73" registered between July 1, 2006 and June 30, 2007.

Table 1. Acres of flat-tailed horned lizard habitat authorized for impact by RMS signatories from January to December 2007, and cumulative acres of impacts within the management areas.

Agency	Within MA		Outside MA (acres)	Total Acres	Acres Impacted to Date in MAs	
	MA	Acres			Total	Percent
Palm Springs BLM	*	0	0	0	*	
El Centro BLM	East Mesa	0	1.0	1.0	93.9	0.09
	West Mesa	0	0	0	117.11	0.14
	Yuha Desert	0	0	0	87.7	0.15
Yuma BLM	*	0	61.56	61.56	*	
NAF, El Centro	East Mesa	0	0	0	1.0	0.01
	West Mesa	0	0	0	6.0	0.02
MCAS, Yuma	Yuma Desert	0	0	0	10.15	0.01
	ASH		#2,183			
Anza-Borrego Desert State Park	Borrego Badlands	0	0	0	0	0.00
Ocotillo Wells State Vehicular Recreation Area	*	0	**7.0	7.0	*	
Reclamation	Yuma Desert	0	0	0	15.80	0.10
	ASH		#2,094			
	AAC		+1,025			
Total Acres		0	5,371.56	69.56	331.66	0.07

* No land administered within an MA.

** 5 Acres resulting from a BLM-EL Centro authorization, and 2 acres resulting from impacts in the Ocotillo Wells Recreation Area.

+ All American Canal lining (AAC) project was reported in the 2006 annual report but not the FTHL habitat impacts.

Compensation collected from the Arizona Department of Transportation for the Area Service Highway (ASH) project was for direct impacts to 623 acres of habitat and 3,654 acres resulting from habitat fragmentation on Reclamation and Barry M. Goldwater Range lands.

Table 2. Ownership of lands within flat-tailed horned lizard management areas by signatory agencies.

Agency	MA	Acres as of 1997	Acres acquired since 1997	Total
BLM-El Centro	East Mesa	99,900	720	100,620
	West Mesa	83,200	3,337	86,537
	Yuha Desert	57,200		57,200
NAF-El Centro	East Mesa	8,500		8,500
	West Mesa	29,800		29,800
MCAS-Yuma	Yuma	99,300	15,500	114,800
Reclamation	Yuma	16,200		16,200
ABDSP	Borrego Badlands	36,500	600 765 (A-B Foundation)	37,865

Bureau of Reclamation - Yuma.

No surface disturbance activities were authorized during 2007. Bureau of Reclamation management activities for the 242 well field continued. Authorization for the All American canal lining (AAC) project was issued by Reclamation in 2006. AAC construction activities began in 2007. Reclamation will be working with the Federal Highway Administration and Arizona Department of Transportation issuing authorizations for various Area Service Highway (ASH) segments on Reclamation lands in 2008.

Ocotillo Wells State Vehicular Recreation Area.

Approximately two acres of FTHL habitat was affected by the installation of a test well for geothermal energy, 1.67 acres for the well itself and a third of an acre for the parking area. No FTHL, scat, or other evidence was noted. The well pad was enclosed by a FTHL-proof fence with a manned FTHL-proof gate. Pending a decision regarding the future disposition of the site, restoration or compensation is scheduled to occur.

Total Habitat Disturbance from January through December 2007.

During this reporting period, 69.56 acres were reported disturbed. These acres were located outside MAs, with 2 acres occurring in the Ocotillo Wells State Vehicular Recreation Area.

Planning Action 3: Within the MAs, rehabilitate damaged and degraded habitat, including closed routes and other small areas of past intense activity.

BLM-El Centro has been actively implementing the Western Colorado (WECO) route designation plan (signed on January 31, 2003). Signing for the Yuha Desert, East Mesa, and West Mesa MAs are complete. BLM rangers make routine checks on signs and replace them as necessary. BLM-El Centro continues to update 12 interpretive kiosks within the Yuha Desert and West Mesa MAs with new maps, rider, and lizard information. BLM-El Centro continues to provide regular outreach by producing and distributing maps of the WECO route of travel designations. BLM-El Centro continues law enforcement patrol of all MAs under their jurisdiction and makes regular public enforcement and education contacts.

Through a series of multiple year grants from the California OHV Motor Vehicle Commission, BLM is continuing work on an ambitious restoration program. BLM continued to work with the Student Conservation Association (SCA) to conduct restoration activities in the Yuha Desert, West Mesa, and East Mesa MAs. Archaeological surveys are necessary before implementing restoration and are ongoing concurrently with restoration. At OWSVRA, approximately 40 acres of mesquite dune habitat and 20 acres of badland/salt-spring habitat were fenced and monitored for rehabilitation.

The SCA crew completed restoration work (closure of unauthorized roads) in the Coachella Valley Preserve and repaired the fence around the Willow Hole portion of the preserve.

Planning Action 4: Attempt to acquire through exchange, donation, or purchase from willing sellers all private lands within MAs.

California State Parks acquired approximately 50 acres of private inholdings for the Research Area (OWSVRA). All inholdings within the Yuma Desert MA were purchased previously and all land remains federally owned.

Anza-Borrego State Parks - Land acquisitions within FTHL habitat continues. A new initiative to acquire private inholdings within Anza-Borrego Desert State Park is being coordinated by the Anza-Borrego foundation and Institute. Approximately 250 acres of FTHL habitat within the Borrego Badlands FTHL MA was purchased and added to the Park during 2007. An additional 1,100 acres is being pursued for transfer to the Park at this time.

BLM-El Centro has adequate funding for acquisition of private lands throughout FTHL MAs. District realty specialists are working to identify all willing sellers in MAs and are currently in negotiations with several land owners. BLM-El Centro prioritized lands for acquisition in the East Mesa MA and plans to establish priorities in the West Mesa MA when staff and funding are available. Compensation funds from current projects and those likely to occur in the near future

will provide for the acquisition of a significant portion of remaining privately owned lands in the MAs. Approximately 27,483 acres of land is not under signatory agency control in the 3 El Centro BLM MAs combined. The BLM is currently working with a number of project proponents to develop agreements to facilitate land purchases.

Seek funds for land acquisitions in MAs.

BLM-El Centro has received funds from the Arizona Department of Transportation to acquire lands in the East Mesa MA. The BLM-El Centro received funds available from the Arizona Department of Transportation (ADOT) in 2007 and began contacting landowners throughout the MAs, beginning with East Mesa. Several willing sellers were identified by the end of 2007 and appraisals initiated. Bureau of Reclamation for acquisition of FTHL habitat and continues to work with the Resource Legacy Foundation and Wildland Conservancy to acquire lands in the West Mesa.

Planning Action 5: Maintain or establish effective habitat corridors between naturally adjacent populations.

The MOG and ICC continue to encourage and emphasize the maintenance of habitat connectivity throughout all MAs. Department of Homeland Security (DHS) continues to pursue fencing along the border. The project now includes all lowland portions of the border across FTHL range. Most of the proposed fencing alternative will not be a barrier to FTHL movement. Several versions of the fencing project are under evaluation in Environmental Assessments.

The ICC provided recommendations on how to maintain permeability for FTHL so that genetic exchange with Mexico populations could continue.

The recent acquisition of six parcels in Borrego Badlands will aid in maintaining habitat connectivity between the FTHL populations within that MA.

No activities or projects have been permitted within the California MAs or Ocotillo Wells RA this year that would prevent or obstruct FTHL movement between adjacent populations in the MAs or RA.

Planning Action 6: Coordinate activities and funding among the participating agencies and Mexican agencies.

Management Oversight Group.

The MOG is comprised of managers from 12 offices from the signatory agencies. It meets as necessary each year to coordinate implementation of the Conservation Agreement in response to recommendations from the ICC. The MOG met on the following dates during 2007:

7 March (MOG/ICC; BLM-Yuma)

Major items discussed by the MOG during 2007 included the use of compensation funds that would result from the Area Service Highway near Yuma, various projects that could impact FTHL habitat, and a need to formalize the process through which the ICC submits funding proposals for monitoring and research projects.

Interagency Coordinating Committee.

The ICC is comprised of biologists from 13 offices from the signatory agencies. It meets quarterly to exchange information on research results, develop proposals, and discuss technical and management issues. The ICC is responsible for compiling information for the annual ICC report, which outlines accomplishments under the RMS. The ICC met on the following dates and locations during 2007:

7 March (MOG/ICC; BLM-Yuma)

27 June (BLM-El Centro)

13-14 September (San Luis, Sonora, Mexico)

26 September (Yuma Crossing Park)

6 December (Yuma Crossing Park)

Major items that the ICC discussed in 2007 included the use of compensation funds (including the purchase of inholdings within the East Mesa MA), various projects that could impact FTHL habitat, training for monitors, results of monitoring and research, future direction for monitoring and research, completion of informational videos, and the production of new brochures and signs.

Coordination with Mexico

ICC team members continued to meet with staff from the Alto Golfo de California Biosphere Reserve (AGCBR) to discuss issues of common concern. An item that continued to be discussed was a new highway that is being constructed between El Golfo and Puerto Peñasco, passing through FTHL habitat and providing access for tourists, including off-highway vehicle

enthusiasts, to the dunes of the Gran Desierto and the beaches on the Gulf. USFWS, AGFD, and AGCBBR completed a proposal to address these issues to be submitted to the Trilateral Commission for funding.

In the March meeting, a bi-national working group was formed to address FTHL conservation activities in Mexico to include development of a conservation management strategy. The ICC formed a sub-team headed by Rob Lovich to facilitate coordination through the ICC and Mexico representatives. In July, staff from AGCBBR received a two day training from Daniel Steward from BLM, El Centro, during the mark-recapture study in the MAs. On September 13 and 14, the first ICC meeting was held in Mexico. The bi-national working group met in Sonora (Biosphere Reserve Office, San Luis Rio Colorado) to define the outline for a Management Strategy for Mexico, that will be accomplished by Biosphere Reserve staff with the support of the working group, and including the participation of several Mexican agencies; as a part of this meeting the group had a tour along the new proposed highway in order to look at the FTHL habitats along the project area. Attendance was low primarily because of difficulties with passports for federal employees. Also in September, a proposal was developed and submitted to promote capacity building for conservation of the FTHL in Mexico.

Previously identified needs continue to be brochures and other interpretive materials to inform visitors of the sensitivity of the area and regulations to protect the environment, including the FTHL; special management areas, equivalent to the MAs in the U.S. need to be identified and managed as such; additional signage and interpretive materials would be needed in support of these areas; meetings of the MOG and/or ICC need to be held specifically to discuss management and research needs in Mexico and projects to support those needs; meetings should ideally be held in Sonora, but must include representatives from AGCBBR and El Pinacate y Gran Desierto de Altar Biosphere Reserves; a Spanish version of the RMS would be useful.

Conservation Agreement.

The 10 agencies that are signatories to the Conservation Agreement to implement the FTHL RMS are listed in the introduction.

Incorporate RMS actions in ecosystem plans

See also Planning Action 1.

In January 2003, the BLM-El Centro Field Office completed the Western Colorado Routes of Travel Designation (WECO). This designated routes as open, closed, or limited. WECO specifically incorporates the guidelines of the RMS and the BLM is managing its land under those guidelines. BLM-El Centro wrote an Environmental Assessment to amend the California Desert Conservation Area Plan to officially designate the FTHL MAs. The EA was signed on February 1, 2005, thus formally establishing all three MAs in the El Centro area.

Reclamation continues to implement the Five-Mile Zone Resource Management Plan, adopted March 18, 2004, for withdrawn lands along the five-mile zone that parallels the international border. This RMP incorporated the RMS and is described further in the 2004 FTHL Annual Report.

MCAS-Yuma is finalizing an INRMP, which fully incorporates and implements the RMS.

BLM-Palm Springs continues to participate in the development of the CVMSHCP that fully incorporates measures in the FTHL RMS.

Border Patrol.

As reported last year, the ICC coordinated the production of a video intended for training of BP agents to instill a greater respect for the desert among agents, emphasizing techniques they can use to minimize their impacts on FTHL habitat. This project is nearing completion and distribution of videos to BP offices is expected in early 2007.

BLM-El Centro holds monthly coordination meetings with three BP offices and holds regular FTHL orientation sessions with the BP to reduce impacts to FTHL habitat along the international border. In 2007, BP initiated environmental documents to assess alternatives for construction of fencing in all flat terrain and lowland areas for the entire California-Mexico border. Several versions of fencing are being considered. BLM conducts regular briefings for the troops to ensure that they are aware of FTHL concerns in the desert. This coordination is viewed as a model nationally because of its positive effect on BLM's and BP's ability to accomplish their missions. Because of BP's increased understanding of FTHL and its habitat needs, they are completing their mission while minimizing impacts in FTHL habitat.

BLM-El Centro implemented an ambitious education strategy with BP to reduce impacts to FTHL habitat. This includes Detailer and Post Academy Orientation. Detailed staff and new employees assigned to the El Centro Sector of the BP are given a 1-2 hour presentation on the location of MAs, desert ecology, sensitive species, archeology, and wilderness. Detrimental effects of off-route travel on FTHL habitat is discussed relating to prey, ecology, and habits of the FTHL. This information is provided to all new field agents in the El Centro and Calexico BP stations as part of their new employee orientation. BLM recommends, and will assist with, similar training for enforcement staff in other MAs (e.g. Yuma Desert).

Planning Action 7: Promote the purposes of the Strategy through law enforcement and public education.

Law Enforcement.

BLM-El Centro has continued to increase law enforcement patrols in the FTHL habitat in Imperial County (see description under Planning Action 3 above). Law enforcement reports that the majority of recreational users in the MAs are now following the route designation requirements of staying on approved routes and camping in appropriate areas.

OWSVRA law enforcement personnel monitor OHV use to ensure that regulations are followed. Personnel are familiarized with information pertaining to the FTHL, both for enforcement and educational purposes.

MCAS conducts daily ORV patrols within the Yuma Desert MA and adjacent habitat.

Public Information.

OWSVRA continues to distribute the FTHL information brochure to park visitors. In addition, an informational video on FTHL is now advertised and available for public viewing at the reception area of the Ocotillo Wells District Office. OWSVRA completed the nomination process as a Watchable Wildlife Site specifically emphasizing the importance of the area as habitat for FTHL.

BLM-El Centro and the National Park Service are preparing an interpretive brochure discussing important resource values in the Yuha basin, such as FTHL. BLM-El Centro continues to maintain informational kiosks and continues to distribute the WECO route of travel area map, which encompasses the Yuha Desert, West Mesa and East Mesa MAs. Furthermore, BLM-El Centro continues public contacts and information dissemination using Park Rangers and the Student Conservation Association crew. BLM-El Centro has extended these contacts into the West Mesa MA and has also partnered with the Desert Protective Council in their securing of a grant to produce and distribute an interpretive brochure of the Yuha area. Additionally, BLM-El Centro has expanded the environmental outreach program in the Imperial Sand Dunes. New interpretive panels that have information about FTHL and other wildlife in the dunes have been placed in the Cahuilla Ranger station. Five new kiosks will be placed in various locations around the dunes. These will have panels that are designed to be removed and moved from location to location so that returning visitors will get to see a variety of information. While there is not yet a panel for FTHL, one will be made available in the future.

As discussed in the previous report, the ICC administered a contract to produce educational videos for BP training and the general public. The general public video is intended to provide information about issues of concern to FTHL and its habitat. Upon completion in early 2007, it will be distributed to schools, OHV groups, conservation groups, civic groups, and will be provided to the public by the signatory agencies.

Although recreation is not prohibited within the MCAS portion of the Yuma Desert MA. MCAS has published a recreational use map depicting closed areas, supported with on the ground signage. MCAS transferred their captive FTHL facility to Arizona Western College (AWC). These FTHL are no longer available after 2007.

Planning Action 8: Encourage and support research that will promote the conservation of FTHLs or desert ecosystems and will provide information needed to effectively define and implement necessary management actions.

Research Permitting and Funding

AGFD issued 8 permits for collecting or handling FTHL during 2007. CDFG issued no new scientific collecting permits during 2007. The following studies were funded by signatory agencies or other sources during this reporting period:

In addition, to the ongoing occupancy monitoring study, OWSVRA self-funded a demographic study to examine more long term population parameters. While the primary purpose was to gauge feasibility of the protocol, the collection of data was organized in a manner such that ecological questions and populations trends could be examined over time.

AGFD completed the final report of a research study to evaluate FTHL use of experimental culverts that was conducted in 2005 and 2006. The final abstract appears in this annual report. AGFD, with funding from BR, completed the second and final year of a research study to evaluate the effectiveness of relocating FTHLs. The abstract from the draft report is included in this report.

The draft report from the University of Arizona to analyze microsatellite genetic variation in FTHL throughout its range has been completed and is being reviewed. The final report will be completed in early 2008 and an abstract will appear in the next annual report."

Planning Action 9: Continue Inventory and Monitoring.

A summary of past and current inventory and monitoring efforts is provided in Table 3.

BLM-El Centro conducted intensive surveys on the East Mesa, Yuha, and West Mesa MA's. Nine hectare plots were established and surveyed for 10 consecutive days except the West Mesa which was surveyed for 6 consecutive days. All FTHL of 55mm snout-vent length were PIT tagged, the location GPS'ed, and a range of measurements noted. Tyler Grant analyzed the data. Interns from Chicago Botanical Gardens and bio techs from USFWS completed the surveys.

OWSVRA conducted both Demographic and Occupancy Plot surveys. The Demographic Plot, a nine hectare plot established and surveyed for 12 consecutive days, produced an insufficient number of captures to provide useful data. The few FTHL's located were PIT tagged and GPS'ed, with appropriate measurements noted. A second Demographic Plot was abandoned after four days when the results were even poorer than the original. 105 Occupancy Plots were surveyed for both scat and FTHL's, with the position of the FTHL's GPS'ed. Tyler Grant analyzed the data. All surveys were conducted by employees of OWSVRA. Observations of FTHL during the course of biannual reptile surveys and any other incidental sightings in the OWSVRA were recorded in the CDFG California Natural History Database and archived with GPS equipment. FTHL observations by staff during archaeological surveys, ranger patrol, or in the course of maintenance activities were noted.

Because of increasing traffic, MCAS-Yuma discontinued its long-term surveys of the Auxiliary 2 road which had previously been conducted to assess the number of road kills and to monitor population trends. The road was repaired in 2007.

USFWS, AGFD, and MCAS completed 15 disturbance transects that had been established in 2002 in the Yuma Desert MA. A report was completed and an abstract appears below.

No FTHL surveys were completed at the Dos Palmas ACEC or at NAF-El Centro in 2007.

Cameron Barrows (Center for Natural Lands Management) continued to survey FTHL at the Coachella Valley Preserve (Thousand Palms portion). The objectives were to determine if population levels can be predicted based on rainfall levels or whether harvester ant abundance proves to be a better predictor.

Table 3. Summary of estimates of flat-tailed horned lizard – information presented by population and/or occupancy rates for each Management Area from 2002-2006.

MA	2002	2003	2004	2005	2006	2007
East Mesa	-	20,959 ¹ 42,619 ²	-	-	0.4 ¹⁰ (FTHL) 0.93 / 0.71 (scat)	-
West Mesa	-	2,946 ³ 10,849 ²	-	0.42 ¹¹	-	-
Yuha Desert	17,772 ⁴ 25,514 ²	-	56,993 ⁵ 73,017 ²	-	-	-
Yuma Desert	-	16,328 ⁶ 25,855 ⁷	-	-	-	-
Borrego Badlands	-	-	-	-	-	-
OWSVRA	-	19,222 ⁸	-	23,345 ⁹	1.0 ¹²	1.0 ¹²

1 using mark/recapture (95% C.I. 15,924-25,995)

2 revised estimate calculated by Tyler Grant

3 using mark/recapture (too few FTHL to est. pop. with MARK program)

4 using mark/recapture (95% C.I. 16,748-19,066)

5 no method data (95% C.I. 14,597-90,298)

6 using trapping webs (95% C.I. 8,378-31,794)

7 using mark/recapture (95% C.I. 16,390-43,951)

8 using mark/recapture (95% C.I. 18,870-26,752)

9 using mark/recapture, adults only (95% C.I.

14,329-69,922)

10 using occupancy (95% C.I. 0.2-0.6)

11 using scat occupancy (95% C.I. 0.27 – 0.58)

12 using FTHL occupancy (MARK for occupancy indicated 100%)

The ICC evaluated the success of previous FTHL monitoring efforts and established a plan for future monitoring. Following is a summary:

Monitoring of FTHL using 4-hectare closed mark-recapture plots, as has been done at least once on all the MAs and the RA except for the Borrego Badlands, has successfully generated broad population estimates. The confidence intervals were very wide in a few cases and because we believe the populations fluctuate in size, the ICC believed that another method would be more informative to use in 2007 and beyond.

Monitoring is used to assess the status or “health” of the populations in question. Many different indicators can be informative of “health” and which indicator is used is often a function of conditions specific to the species. Such indicators include population size, density, survival rate, recruitment, population growth rate, or other such metrics. The ICC proposed a new monitoring regime to monitor the health of FTHL populations in MAs and the RA. The monitoring consisted of occupancy estimation and “sentinel” plots.

Occupancy estimation will give inference about the distribution of FTHLs in the MAs. It will answer the question: Is the distribution of FTHLs in the MAs stable, increasing, or decreasing? This component of the monitoring is meant to detect large-scale changes that reflect large or

catastrophic changes in status. The protocol for this method has generally been established in occupancy conducted during the last two years.

The sentinel plots will be a smaller number of plots where more in depth information is collected to further our understanding of the population dynamics of the species. We propose to use a statistical mark-recapture model known as “Robust Pradel”. Robust Pradel models are used to estimate abundance each summer and yearly survival and fecundity rates. These rates are critical to understanding the population dynamics of the FTHL. The Robust Pradel model is a recent extension of the simple Pradel model, which has been used to monitor northern spotted owl.

The summer of 2007 served as a pilot study/evaluation of the sentinel plot protocol. The ongoing monitoring goal will be to conduct surveys every year on every MA and RA for a specified amount of time (e.g. 5 years).

TREASURY REPORT

Table 4 below lists the expenditures and balances through 31 December 2007.

	Date	Yuma MA AZ 320 7122 5701 (17.3% INC)	ASH intermediate acquisitions costs (AZ 320 7122 5808) (19% INC).	ASH land purchase cost (AZ 320 7122 6974) (19% INC).	East Desert MA (CA 670 7122 6712) (% INC).	West Desert MA (CA 670 7122 713) (% INC)
2006 carryover	1 Jan 07	\$231,369.65	\$0	\$0	\$131,135.65	\$62,405.43
Additions						
San Luis ROW	24 April 07	\$17,606.16				
	5 Sept 07		\$1,120,000.00			
	12 Sept 07			\$2,912,000.00		
IDD Drop 4 Deposit					\$290.13	
TruckHaven Geothermal Developer						\$3,309.80
Subtractions						
DOI Minerals	28 Dec 07		\$3,610.00			
DOI Minerals	21 Dec 07		\$9,890.00			
TOTALS		\$248,975.81	\$1,106,500.00	\$2,912,000.00	\$131,425.78	\$65,715.23

Arizona Department of Transportation (ADOT) deposited \$4,032,000 for the Area Service Highway (ASH) compensation into two BLM Yuma accounts. Account AZ 320 7122 5808 will be used for intermediate steps that lead up to the land acquisitions, and account AZ 320 7122 6974 will be used for purchasing the land. BLM will charge 19% against the accounts for administrative costs, but BLM required ADOT to pay that additional amount (Stephen Fusilier, personal communications). Any funds left-over from the agreed upon acreage for the ASH mitigation will be used for other future ADOT compensation.

CONCLUSIONS

Signatory agencies continue close cooperation and execution of their respective responsibilities.

The FTHL RMS is being implemented throughout the MAs and FTHL habitat by the cooperating agencies. Regular coordination between the participating agencies continues through the MOG and ICC. The participating agencies believe the FTHL Conservation Agreement and RMS continue to provide an effective management focus to conserve FTHL habitat throughout its range. During the past year, the aggressive implementation of the RMS has been a positive benefit for FTHL conservation. Outreach efforts continue to include the general public and other agencies, such as BP and Mexican agencies, as active participants in implementing the RMS. The Alto Golfo de California and Pinacate Biosphere Reserves are already working closely with agencies in the U.S. on research and conservation efforts to benefit the FTHL in Mexico. Authorized surface impacts have remained low in MAs.

The MOG and ICC continue to support the 2004 decision that compensation money can be shared among MAs, regardless of source state, since there is no available land for purchase in the Yuma MA. The major focus of this decision continues to be the purchase of available land in any MA prior to private development and, secondly, to use compensation funds to restore habitat within MAs after there is no additional land available for purchase in a MA. Some signatory participants have been able to secure funding for rehabilitation efforts from non-compensation funds. This supplements the compensation funds in providing management capability in implementing the RMS.

Population inventories and monitoring of trends continue, as does research in MAs and habitat areas. This information is useful in developing future management actions and in being able to make better decisions in implementing projects.

Outreach, including providing education and information to the public, is an on-going activity. The informational videos that were produced in 2006 for the general public and the BP will help immensely in this effort. Public understanding of the FTHL, its habitat needs, and authorized activities is necessary to fully implement the RMS.

The 2003 updated version of the FTHL RMS continues to be a platform to move participating agencies into more effective management and conservation of FTHL in the upcoming years.

RMS IMPLEMENTATION PROGRESS TO DATE (Updated schedule)

The following table displays the priority, responsible agency, estimated cost, and schedule for completing each Planning Action. The priorities indicated in the table are assigned the following definitions:

Priority 1: An action that must be taken in the near term to conserve the species and prevent irreversible population declines.

Priority 2: An action that must be taken to prevent significant declines in population or habitat quality.

Priority 3: All other actions necessary to meet the goals and objectives of this RMS.

The following abbreviations and symbols are used in the implementation schedule:

ABDSP	Anza-Borrego Desert State Park
AGFD.....	Arizona Game and Fish Department
BLM	Bureau of Land Management
Reclamation	Bureau of Reclamation
ICC	Interagency Coordinating Committee
CDFG	California Department of Fish and Game
OWSVRA	Ocotillo Wells State Vehicular Recreation Area
USFWS	U.S. Fish and Wildlife Service
USMC	U.S. Marine Corps
USN.....	U.S. Navy
<input checked="" type="checkbox"/>	Task completed since 1997
<input type="checkbox"/>	Task not completed
⇒, ∪	Task ongoing, on schedule
➡, ∪	Task ongoing, not on schedule

Management Strategy Implementation Schedule, 2008-2012												
Status	Priority	Action Number	Planned action	Duration (yrs)	Responsible agency	Total cost (\$000)	Cost estimates (\$000)					
							FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	
		1.	Delineate and designate FTHL MAs									
<input checked="" type="checkbox"/>	1	1.1	Designate Yuma Desert MA	2	RECLAMATION USMC	1	0	0	0	0	0	
<input checked="" type="checkbox"/>	1	1.2	Designate East Mesa MA	2	BLM USN	1	0	0	0	0	0	
<input checked="" type="checkbox"/>	1	1.3	Designate West Mesa MA	2	BLM USN	1	0	0	0	0	0	
<input checked="" type="checkbox"/>	1	1.4	Designate Yuha Desert MA	2	BLM	1	0	0	0	0	0	
<input checked="" type="checkbox"/>	1	1.5	Designate Borrego Badlands MA	2	ABDSP	1	0	0	0	0	0	
<input checked="" type="checkbox"/>	3	1.6	Designate Ocotillo Wells RA	1	BLM OWSVRA ABDSP	1	0	0	0	0	0	
<input checked="" type="checkbox"/>	1	1.7	Designate conservation areas in Coachella Valley	2	BLM USFWS CDFG	1	0	0	0	0	0	
		2.	Define and implement actions necessary to minimize loss or degradation of habitat									
<input type="checkbox"/>	1	2.1.1	Apply mitigation measures	∞	ALL	5	1	1	1	1	1	
<input type="checkbox"/>	1	2.1.2	Require compensation	∞	ALL	25	5	5	5	5	5	
<input type="checkbox"/>	1	2.2.1	Limit discretionary land uses authorizations and rows to 10 acres and 1% total per MA	∞	ALL	5	1	1	1	1	1	
<input type="checkbox"/>	1	2.2.2	Do not dispose of lands in MAS	∞	ALL	0	0	0	0	0	0	
<input type="checkbox"/>	3	2.2.3	Continue maintenance in existing ROWs	∞	ALL	0	0	0	0	0	0	
<input type="checkbox"/>	2	2.2.4	Require fencing along Yuma Desert MA boundary road	∞	ALL	50	0	50	0	0	0	
<input type="checkbox"/>	2	2.3.1	Limit surface disturbance from mineral activities in MAS	∞	ALL	5	1	1	1	1	1	
<input type="checkbox"/>	2	2.4.1	Reduce new roads to a minimum in MAS	∞	ALL	5	1	1	1	1	1	
<input type="checkbox"/>	1	2.4.2	Designate routes "open," "closed, or limited." Give route signing a priority	∞	BLM USMC BR	100	20	20	20	20	20	
<input type="checkbox"/>	1	2.4.3	Reduce route density in MAS		See 2.4.2							
<input type="checkbox"/>	1	2.4.4	Coordinate with U.S.BP	∞	ALL	20	4	4	4	4	4	
<input type="checkbox"/>	3	2.5.1	Allow OHV recreation in RA	∞	OWSVRA	0	0	0	0	0	0	
<input type="checkbox"/>	1	2.5.2	No competitive recreational events in MAS	∞	ALL	0	0	0	0	0	0	
<input type="checkbox"/>	2	2.5.3	Allow non-motorized recreational activities in MAS, but no new recreational facilities	∞	ALL	0	0	0	0	0	0	
<input type="checkbox"/>	2	2.5.4	Limit camping in MAS	∞	BLM USMC	20	4	4	4	4	4	

Management Strategy Implementation Schedule, 2008-2012												
Status	Priority	Action Number	Planned action	Duration (yrs)	Responsible agency	Total cost (\$000)	Cost estimates (\$000)					
							FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	
⇒	2	25.5	No new long-term visitor areas in MAS	∞	ALL	0	0	0	0	0	0	
⇒	3	2.6	Authorize limited use of flora in MAS	∞	ALL	5	1	1	1	1	1	
⇒	1	2.7	Allow military maneuvers and encampments only in designated sites in MAS	∞	USN USMC	5	1	1	1	1	1	
⇒	3	2.8	Suppress fires in MAS using limited fire suppression methods in MAS	∞	ALL	5	1	1	1	1	1	
⇒	1	2.9	Prohibit pesticide treatments in MAS	∞	ALL	5	1	1	1	1	1	
⇒	3	2.10	Limit other activities consistent with above	∞	ALL	5	1	1	1	1	1	
		3.	Rehabilitate damaged and degraded habitat									
⇒	2	3.	Rehabilitate damaged and degraded habitat in MAS	∞	BLM RECLAMATION ABDSP USMC USN	500	100	100	100	100	100	
		4.	Bring all lands within MAS into public management									
☑	3	4.1	Maintain prioritized list of parcels for acquisitions; and respect private rights	1	ALL	5	1	1	1	1	1	
⇒	3	4.2	Procure funds for land acquisitions in MAS (32,178 acres of private lands acres in California MAS)	∞	BLM CDFG ABDSP OWSVRA	22,525	4,505	4,505	4,505	4,505	4,505	
⇒	3	4.3	Use compensation funds to acquire key lands in MAS	∞	BLM CDFG ABDSP OWSVRA	20	4	4	4	4	4	
⇒	3	4.4	Exchange lands opportunistically	∞	BLM	20	4	4	4	4	4	
		5.	Maintain or establish effective habitat corridors between naturally adjacent populations									
⇒	2	5.1	Limit or mitigate activities in movement corridors	∞	ALL	25	5	5	5	5	5	
⇒	3	5.2	Coordinate with Mexico and INS	∞	ALL	10	2	2	2	2	2	
		6.	Coordinate activities and funding among the participating agencies and Mexican agencies									
☑	2	6.1.1	Establish FTHLMOG	∞	ALL	5	1	1	1	1	1	
⇒	2	6.1.2	Hold semi-annual ICC meetings	∞	ALL	5	1	1	1	1	1	
⇒	3	6.1.3	Establish forum for discussions with agencies and individuals in Mexico	∞	ALL	25	5	5	5	5	5	
☑	1	6.2	Develop Conservation Agreement	1	ALL	0						

Management Strategy Implementation Schedule, 2008-2012											
Status	Priority	Action Number	Planned action	Duration (yrs)	Responsible agency	Total cost (\$000)	Cost estimates (\$000)				
							FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
⇒	2	6.3.1	Incorporate actions in Western Colorado Desert ecosystem plan (Note: other state and local agencies will fill key roles)	∞	ALL	50	10	10	10	10	10
☑	2	6.3.2	Incorporate actions in CVMSHCP (Note: other state and local agencies will fill key roles)	3	BLM CDFG USFWS	0	0	0	0	0	0
⇒	2	6.3.3	Incorporate actions in Western Colorado Desert Route Designation	∞	BLM	20	4	4	4	4	4
⇒	1	6.4	Coordinate with U.S. BP and develop mutual agreements	2	BLM RECLAMATION USMC	6	2	2	2	0	0
⇒	2	6.4.1	Encourage use of techniques to minimize BPOHV activity	∞	BLM RECLAMATION USMC	5	1	1	1	1	1
⇒	2	6.4.2	Prepare educational briefing for BP agents	1	BLM BR	5	1	1	1	1	1
		7.	Promote the purposes of the RMS through law enforcement and public education								
⇒	1	7.1	Provide adequate law enforcement	∞	BLM CDFG AGFD USMC	750	150	150	150	150	150
⇒	3	7.2	Provide public information and education	∞	ALL	25	5	5	5	5	5
		8.	Conduct research necessary to effectively define and implement necessary management actions								
⇒	3	8.1	Require permits for research	∞	ALL	5	1	1	1	1	1
⇒	2	8.2	OWSVRA shall continue to fund research	∞	OWSVRA	200	40	40	40	40	40
☑	2	8.3.1	Test trapping as a population census technique	2	ALL	0	0	0	0	0	0
⇒	2	8.3.2	Test direct counting methods	2	ALL		Included in 8.2 and 8.3.1				
⇒	2	8.4	Determine life history and demographic data (sentinel plots)	5	BLM MCAS, RECLAMATION USMC OWSVRA ABDSP	300 150 150 100	60 30 30 20	60 30 30 20	60 30 30 20	60 30 30 20	
⇒	2	8.5	Determine effects of conflicting activities	5	ALL	300	60	60	60	60	60
⇒	3	8.6.1	Determine genetic variation in population	5	ALL	40	0	20	0	20	0
⇒	3	8.6.2	Determine effects of non-natural barriers	∞	ALL	30	5	5	5	5	5
☐	3	8.6.3	Determine effects of natural barriers	5	ALL	15	3	3	3	3	3

Management Strategy Implementation Schedule, 2008-2012											
Status	Priority	Action Number	Planned action	Duration (yrs)	Responsible agency	Total cost (\$000)	Cost estimates (\$000)				
							FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
⇒	3	8.7	Determine effectiveness of mitigation measures	5	ALL	20	4	4	4	4	4
		9.	Continue inventory and monitoring								
⇒	2	9.1	Continue inventories	∞	ALL	125	25	25	25	25	25
⇒	2	9.2.1	Monitor implementation	∞	ICC	40	8	8	8	8	8
⇒	2	9.2.2	Monitor population trends (occupancy plots)	∞	BLM MCAS, RECLAMATIO N OWSVRA ABDSP	400 180 135 150	100 60 45 50	50 60 45 50	100 50	100 60 45 50	
⇒	1	9.2.3	Document habitat disturbance and loss	∞	ALL	50	10	10	10	10	10
⇒	1	9.2.3.1	Conduct aerial reconnaissance and analysis of surface disturbance on the five MAs every five years	∞	ALL	100		100			
⇒	2	9.2.4	Prepare annual monitoring/implementation report	∞	ICC	20	4	4	4	4	4
⇒	1	9.2.5	Use new inventory, monitoring, and research data in evaluations and proposed changes	∞	ALL	10	2	2	2	2	2

Appendix A: Report Abstracts

Bureau of Land Management El Centro Field Office. Flat-Tailed Horned Lizard Monitoring Report 2007. The BLM-El Centro monitored East Mesa, West Mesa, and Yuha MA's. Nine hectare sentinel plots were established and surveyed for 10 consecutive days using 4-6 searchers. West Mesa was surveyed for 6 days due to funding. Once a lizard was located, it was measured and fitted with a PIT. It was also temporarily marked with a sharpie. The capture location was GPS'ed and routes walked recorded. Individual lizards were usually recaptured near the original capture site. One-hundred fifty captures were made during the 26 survey days from 68 individuals. Twenty eight individuals were captured on both the East Mesa and the Yuha, while 12 individuals were captured on the West Mesa. Several individuals were captured 6 separate times during the 10 day survey period. Preliminary analysis from Tyler Grant.

Index	Label	Estimate	SE	LCI	UCI	Description
1	p	0.18	0.03	0.12	0.25	p for Yuha adults
2	P	0.20	0.05	0.11	0.29	p for Yuha juveniles
3	P	0.19	0.03	0.14	0.25	p for East Mesa adults
4	P	0.43	0.06	0.32	0.55	p for West Mesa adults
5	p	0.00	0.00	0.00	0.00	p for the 4 occasions hat were not surveyed on West Mesa, fixed to zero
6	N	20.24	2.22	18.0	27.55	pop est for Yuha adults
7	N	10.75	1.49	10.00	16.40	pop est for Yuha Juveniles
8	N	32.44	2.59	29.00	40.12	pop est for East Mesa
9	N	12.00	0.00	12.00	12.00	pop est for West Mesa

Allen, Traci, and Jim Rorabaugh. 2007. Human Disturbance in the Flat-tailed Horned Lizard Yuma Desert Management Area. In 2002, 2006, and 2007, using methodologies developed in California, randomly selected transects were sampled in the flat-tailed horned lizard (*Phrynosoma mcallii*) Yuma Desert Management Area for the purpose of quantifying forms and levels of human disturbance and establishing an environmental baseline for future trend analysis. In April 2007, we re-sampled 16 transects. The most common form of human disturbance observed in 2007 was off-road vehicle tracks, which covered 1.4% of the ground surface in the Barry M. Goldwater Range portion, and 0.9% of the surface in the 5-Mile Zone portion of the Management Area. Signs of immigrant passage were commonly observed, as well. Mean percent absolute cover by perennial plants was 7.2 in the Goldwater Range portion and 2.9 in the 5-Mile Zone portion of the Management Area. Dominant perennial plants were creosote (*Larrea tridentata*), crinklemat (*Tiquilia palmeri*), and white bursage (*Ambrosia dumosa*). No flat-tailed horned lizards were observed during our work. This report includes

recommendations to sample the 16 transects annually to detect trends in disturbance levels and types, to determine longevity of vehicle tracks under different climatic and soil conditions, to determine who is responsible for observed off-road activity, and to study survival of perennial plants crushed by vehicles.

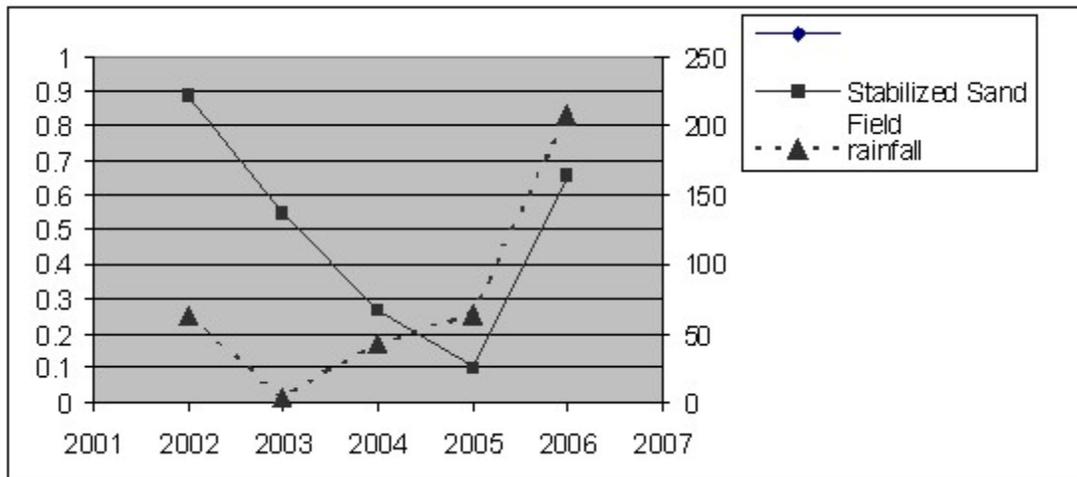
Hollenbeck, Eric and Joe Hopkins. 2007. Ocotillo Wells District 2007 flat-tailed horned lizard (*Phrynosoma mcallii*) occupancy survey and initial demographic survey report (draft). In 2007, Ocotillo Wells State Vehicular Recreation Area, designated as the Research Area under the FTHL Conservation Agreement, was surveyed using the Occupancy protocol authored by the BLM in 2006. 105 stratified-random and nested four-hectare plots were searched for presence of FTHL a maximum of four person-occasions, fewer if a lizard was found after at least two occasions. 27 plots (26%) were positive for FTHL. Analysis in the program MARK for occupancy indicated 100%; however, the extremely low detection probability, the suspicion that the data was too sparse for successful estimation in the program MARK, and errors in strata identification and plot selection undermine the confidence in this estimate. Also, a Demographic Plot was surveyed using the Robust Pradel Mark-Recapture Protocol for Monitoring Flat-tail Horned Lizards on Sentinel Plots authored by Tyler Grant, USFWS, in 2006. Too few lizards were found to calculate a detection probability or population estimate. A second Sentinel Plot was attempted, but abandoned when results were even poorer than on the first.

Culver, Melanie and Tony Dee. 2008. Microsatellite genetic variation in flat-tailed horned lizards (*Phrynosoma mcallii*) in Arizona, California and Mexico. Unpub. report to Arizona Game and Fish Dept., Phoenix, AZ. The flat-tailed horned lizard (*Phrynosoma mcallii*) is a strict habitat specialist with a very limited range in SW Arizona, SE California and the adjoining portions of Sonora, Mexico. It has been through a series of listings as a candidate species for threatened or endangered status under the Endangered Species Act since 1980. Lack of sufficient data has been cited as one of the reasons for withdrawal from the proposed candidate species list. We used 3 microsatellite markers to characterize the extent of genetic variation and uniqueness in and among the Arizona populations(s) of *Phrynosoma mcallii*, and between the Arizona populations(s) and populations from California and Mexico. We found evidence of strong differentiation between Arizona/Mexico and California populations of *P. mcallii*. We found moderate differentiation between Arizona and Mexico populations of *P. mcallii*. Finally, we found moderate differentiation between the Arizona populations north and south of Interstate 8, with the small population north of the interstate exhibiting some evidence of inbreeding or drift. It is imperative for policy makers involved in the listing or delisting of *P. mcallii* to have an accurate understanding of its genetic status, in order to make informed and appropriate decisions concerning the status of its legal protection.

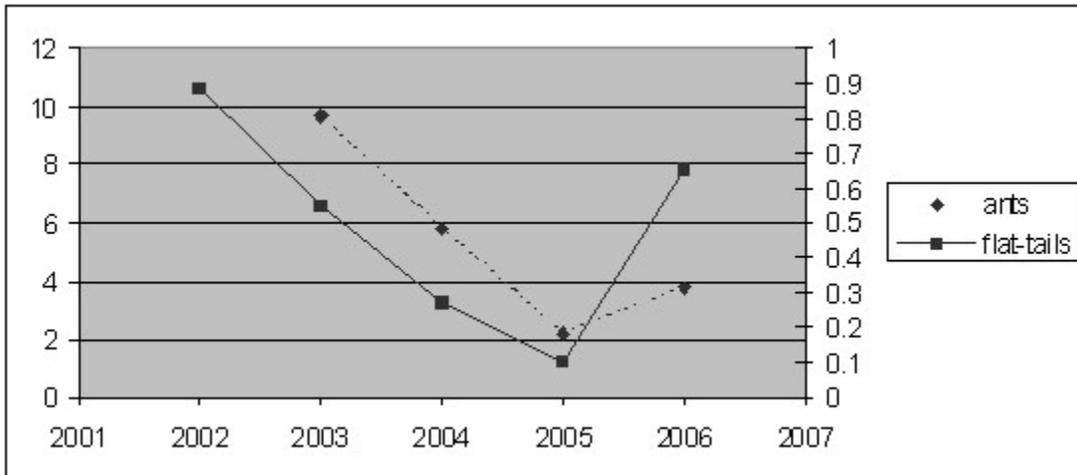
Painter, M.L. and M. Ingraldi. 2008. Evaluation of relocation as a mitigation technique for flat-tailed horned lizards. Draft progress report, Research Branch, AGFD, Flagstaff. This was the second year of a study to determine the effectiveness of FTHL relocation as a

mitigation measure. AGFD Research Branch attached radio transmitters to treatment FTHL in the Yuma Desert that were relocated and compared 3 measures of fitness (survival, weights, movements) with control FTHL, which were also affixed with transmitters but not moved. In 2006 and 2007 a total of 70 FTHL were radio-tagged. Control-group lizards were released at their capture points; treatment-group lizards were released at new locations on average, treatment-group lizards exhibited poorer survival, less site fidelity, and moved further distances each day. Differences in percent weight change were negligible. Overall, results of this study indicate the process of relocating FTHLs is somewhat detrimental to individuals up to 28 days post-release.

Summary of research findings for the Coachella Valley, California in 2006, Cameron Barrows, Center for Natural lands Management, Center for Conservation Biology, U.C. Riverside. Flat-tailed horned lizard studies and surveys were continued at the Coachella Valley Preserve (Thousand Palms portion of the preserve) by Cameron Barrows (Center for Natural Lands Management). The objectives for the current studies are to determine if population levels for these lizards can be predicted based on rainfall levels or whether harvester ant abundance proves to be a better predictor. Flat-tailed horned lizard populations significantly increased in 2006. This increase only roughly corresponded to rainfall, however the dynamics of harvester ant populations appeared to closely match the dynamics of the horned lizard populations.



Relationship between FTHL populations and rain.



Relationship between FTHL populations and ant numbers.

Delta del Río Colorado, in Sonora, Mexico, on 2007.

During June and September presence/absence surveys were conducted using the Flat-tailed Horned Lizard/Scat transect record data form. Surveys were conducted in habitats located along the new highway, in the nearest areas to El Golfo de Santa Clara town, and in vegetation along the transect was also sampled. Four FTHLs were found, with an observed frequency of 0.18 individuals per hour of sampling in three days of survey. This value is low compared with 0.57 ind/h for 2005 and similar to the frequency of past years (0.22 and 0.25 ind/h for 2001 and 2002 respectively). We think this could be related with the skills of the observers and probably variation in the annual primary productivity of the sites.

Appendix B: 2008 Annual Work Plan for the Flat-tailed Horned Lizard Interagency Coordinating Committee

1. Delineate and designate flat-tailed horned lizard MAs and a RA.

1.1-1.6. All MAs and the RA have been delineated and officially designated. ABDSP will work to strengthen their official commitment in their new Natural Resources Management Plan.

1.7. Encourage development of a MA in the Coachella Valley. Signatories decided to support creation and management of the CVMSHCP instead. BLM-Palm Springs will continue to participate in the development of the CVMSHCP.

2. Define and implement management actions necessary to minimize loss or degradation of habitat.

2.1. Mitigate and compensate project impacts through humane and cost-effective measures.

2.1.1. Apply mitigation measures. Appropriate mitigation measures will be enforced for all authorized projects that impact FTHLs or their habitat.

2.1.2. Require compensation for residual impacts. Agencies will continue to require compensation for projects that have residual impacts to FTHL habitat.

2.2. Limit authorizations that would cause surface disturbance in MAs.

2.2.1. Attempt to locate projects outside MAs; limit discretionary land use authorizations and ROWs to 10 acres and 1% total per MA. These limits will be observed.

2.2.2. Federally owned lands in the MAs shall be retained in federal ownership. No disposal of federal lands within MAs will occur.

2.2.3. Maintenance in existing ROWs may continue. No action required.

2.2.4. Require fencing along Yuma Desert MA boundary road. Agencies in Arizona will continue to coordinate with ADOT to ensure that they are committed to provide and maintain lizard barrier fencing along the Area Service Highway, when and if it is constructed.

2.3. Limit surface disturbance in MAs from minerals actions.

2.3.1. Allow approved minerals actions while applying applicable mitigation and compensation. Applicable mitigation and compensation will continue to be applied.

2.4. Limit vehicle access and route proliferation in MAs. BLM-El Centro will continue to rehabilitate illegal routes and sign designated routes.

- 2.4.1. Reduce new roads to a minimum in MAs.** BLM-El Centro will sign all designated routes within the MA's. MCAS-Yuma is finalizing their INRMP, which will restrict new road development.
- 2.4.2. Designate routes "open", "closed", or "limited". Give route signing a priority.** BLM-El Centro completed route designation for the Western Colorado Desert. All vehicle routes on BLM managed lands in Imperial County were designated as open, closed, or limited. BLM has completed initial signing of all of these routes and is routinely patrolling the area and replacing signs as necessary. BLM is also in the process of restoring closed routes to a natural condition. MCAS-Yuma's INRMP includes a comprehensive effort to sign routes.
- 2.4.3. Reduce route density in MAs.** BLM-El Centro completed route designation for the Western Colorado Desert. All vehicle routes on BLM managed lands in Imperial County were designated as open, closed, or limited. BLM has successfully secured hundreds of thousands of grant dollars to restore closed routes throughout the Western Colorado Desert area particularly in the FTHL Management Areas. The MCAS-Yuma INRMP includes most of the Yuma Desert MA and calls for closure of redundant routes; routes will be identified for closure within the MA.
- 2.4.4. Coordinate with USBP to ensure cooperation and enforcement of vehicle regulations.** ICC members will continue to hold FTHL orientation sessions with BP agents in the El Centro sector to reduce impacts to FTHL habitat along the International Border.
- 2.5. Limit impacts of recreational activities in MAs.** Recreational camping is limited in the Yuha Desert MA to designated camping areas. The MCAS-Yuma INRMP closes the portion of the Yuma Desert MA on the Barry M. Goldwater Range to all forms of recreation.
- 2.5.1. Allow vehicle-oriented recreation in RA.** No action required.
- 2.5.2. Permit no competitive recreation events in MAs.** Competitive races will not be permitted in MAs.
- 2.5.3. Allow non-motorized recreational activities in MAs, but limit new recreational facilities.**
- 2.5.4. Limit camping in MAs.** Recreational camping is limited in the Yuha Desert MA to designated camping areas. The MCAS-Yuma INRMP closes the portion of the Yuma Desert MA on the Barry M. Goldwater Range to camping.
- 2.5.5. No long-term camping areas shall be developed in MAs.** None will be developed.
- 2.6. Allow limited use of plants in MAs.** No plant sales, commercial collecting, or grazing will be allowed.

- 2.7. Allow military maneuvers and encampments only in designated sites in MAs.**
Military training areas in the Yuma Desert MA are fenced or marked to identify their locations and limits so that adjacent areas will not be impacted.
- 2.8. Suppress fires in MAs and BLM lands in the RA using allowable methods.**
- 2.9. No pesticide treatments shall be applied within MAs.** No pesticide treatments will occur in MAs, except for specifically targeted herbicides. Herbicides are used on tamarisk removal projects, which improve FTHL habitat.
- 2.10. Within MAs, other activities not consistent with the RMS shall not be approved.** None will be approved.
- 3. Rehabilitate damaged and degraded habitat in MAs.** Several years of extensive habitat rehabilitation is planned and has begun for the Yuha Desert, West Mesa, and East Mesa MAs
- 4. Attempt to acquire all private lands within MAs.**
 - 4.1 Maintain prioritized list of parcels for acquisitions.** Lists identifying parcels for acquisition will be maintained by the California OHV Division office headquarters in Sacramento and by BLM-El Centro. Ocotillo Wells District, through OHMVRD, will continue to acquire private inholdings. ABDSP will continue to acquire private inholdings within the park.
 - 4.2. Seek funding to acquire key parcels in MAs.** Compensation funds will be banked for habitat acquisition.
 - 4.3. Using compensation and other funds, acquire key lands in MAs.** Key lands in MAs will be acquired as opportunities arise. Compensation funds collected in Arizona may be used for habitat acquisition in the East Mesa MA in California. The ICC and MOG will continue to develop a more comprehensive approach regarding the use of funds.
 - 4.4. Participate in exchanges to acquire key parcels in MAs.** This will occur as opportunities arise. At the moment, the primary tool for land acquisition is through purchases rather than land exchanges.
- 5. Maintain or establish effective habitat corridors between naturally adjacent populations.**
 - 5.6. Limit or mitigate activities in movement corridors.**
 - 5.7. Coordinate with Mexico and INS to ensure movement across the border.**
Agencies will continue to consult with Department of Homeland Security on border fencing issues.

- 6. Coordinate activities and funding among the participating agencies and Mexican agencies.**
 - 6.1.1. Maintain a FTHL MOG.** The MOG will continue to meet as needed to coordinate implementation of the conservation agreement in response to recommendations from the ICC. Meeting minutes will be provided to all MOG and ICC members to facilitate effective coordination.
 - 6.1.2. Hold semi-annual meetings of the ICC.** The ICC has met quarterly since the inception of the RMS and will continue to do so to discuss implementation of Planning Actions under the RMS and issues and challenges regarding this implementation. In addition to ICC meetings, subgroups of the ICC may meet on occasion to discuss specific issues.
 - 6.1.3. Develop a forum for discussions with agencies and individuals in Mexico.** USFWS and AGFD will continue to use their periodic coordination meetings with the AGRB to promote the involvement of Reserve staff in the ICC and MOG.
 - 6.2 Develop a conservation agreement.** The 2003 revision of the RMS has been finalized, printed, and distributed to all involved agencies and interested parties. The RMS may be revised as necessary to reflect new information.
 - 6.3.1. Incorporate actions into the Western Colorado Desert Coordinated Management Plan.** In 2005, the California Desert Conservation Area Plan was amended to formally adopt the Strategy and the FTHL MAs. This plan will continue to be implemented in 2008.
 - 6.3.2. Incorporate actions into the CVMSHCP.** BLM-Palm Springs will continue to participate in the development of the CVMSHCP.
 - 6.3.3. Incorporate actions into the Western Colorado Desert Route Designation.** See 2.4.2.
 - 6.4. Coordinate with U.S. BP to develop mutual agreements.** BP will continue to be invited to MOG meetings. ICC agencies will finalize the production of the BP training and education video and distribute it to BP offices for use in their training programs.
- 7. Promote the purposes of the RMS through law enforcement and public education.**
 - 7.1. Provide sufficient law enforcement.** MCAS and AGFD will continue to conduct ORV patrols within the Yuma Desert MA and adjacent habitat. BLM-El Centro has aggressively moved ahead to fill vacant law enforcement positions and apply for grants to add additional rangers.
 - 7.2. Provide public information and education about the MAs and RA.** All users of BMGR will receive a briefing that includes information on the FTHL, slides, pictures and/or descriptions. BLM-El Centro will continue to distribute FTHL

brochures and maps to land users. Agencies on both sides of the border will continue to distribute the FTHL brochure that was developed by the Centro Intercultural de Estudios de Desiertos y Océanos. ICC agencies will finalize the production of the general public information video and distribute it to appropriate groups.

8. Encourage and support research to promote conservation of FTHL and desert ecosystems.

8.1. Require permits for research. AGFD and CDFG will continue to require scientific collecting permits for people who collect or handle FTHL. New CDFG regulations enable monitors who move FTHL as mitigation for projects in California to do so with a letter of authorization from CDFG and not a collecting permit.

8.2. OWSVRA shall continue to budget for research. Continued Monitoring (in house): Complete the stratification of the RA and be sure that 120 occupancy plots are proportionately and randomly distributed. Execute the survey of all 120 plots. Repeat the Demographic Plot done this year. Identify and survey a second Demographic Plot.

8.3. Continue to refine cost-effective techniques for assessing FTHL abundance.

8.3.1. Test trapping and other techniques to enumerate FTHLs directly.

8.3.2. Determine effectiveness of relative enumeration techniques and scat counts as an index of relative abundance.

8.4. Determine life history and demographic data. The sentinel plots proposed for each of the MAs will provide these data.

8.5. Determine effects of conflicting activities.

8.6. Determine genetic variation among populations and effects of barriers. The study to evaluate genetic variation across the range of FTHL has been completed.

8.6.1. Determine genetic variation in MAs.

8.6.2. Determine effects of human-created barriers.

8.6.3. Determine effects of natural barriers.

8.7. Determine effectiveness of mitigation measures. AGFD will complete the final report of the research study to evaluate the effectiveness of relocating FTHL.

9. Continue Inventory and Monitoring.

9.1. Continue inventories. BLM-Yuma will determine the presence/absence of FTHL within some of BLM-managed land. BLM-El Centro will continue to monitor lizard populations in the MAs using the methods defined by the ICC. BLM-Palm Springs anticipates funding through OHV grants to conduct surveys in Dos Palmas

in 2008. In the Coachella Valley Preserve, FTHL will continue to be surveyed by the Center for Natural Lands Management, with a focus on lizard-ant-small mammal interactions. The objective is to use a correlational approach as well as an experimental approach (small mammal exclosures with varying resource levels) to determine whether the small mammals restrict the growth of the ant populations and therefore impact FTHL. With funding from Reclamation, AGFD will conduct two sentinel plots within the Yuma Desert MA as well as a baseline sample of occupancy plots. In addition, sentinel plots are proposed in the West Mesa, and Yuha Desert MAs. OWSVRA will survey its existing Demographic Plot and will establish a second one. ABDSP proposes to conduct occupancy surveys during 2008 in the Borrego Badlands MA. Occupancy surveys are also proposed for the Yuha Desert MA. Occupancy plots at OWSVRA will be examined for appropriate stratification, randomness, and proportionality, and then surveyed to bring the total to the recommended 120 sites.

9.2. Monitor habitat quality and population trends in the MAs. OWSVRA will continue to monitor habitat. BLM-El Centro conducts disturbance and vehicle track surveys as time and funding allow. The Student Conservation Crew conducting restoration in the Yuha Desert MA is evaluating the level of disturbance within the MA before, during, and after the restoration.

9.2.1. Monitor implementation of the RMS. The 2008 work plan describes how the 2003 RMS will be implemented. At the end of the year, the ICC will report accomplishments and significant deviations.

9.2.2. Monitor population trends. Observations of FTHL during the course of biannual reptile surveys at OWSVRA will be recorded as part of regular monitoring. FTHL observations by staff during archeology surveys, ranger patrol, or in the course of maintenance duties will be noted. BLM-El Centro will gather population data using occupancy and sentinel plots.

9.2.3. Document habitat disturbance and loss. All authorized habitat impacts will be reported in the 2008 ICC annual report. BLM-El Centro, AGFD, and USFWS will continue to quantify the level of vehicular impacts to FTHL habitat using a step-point method.

9.2.4. Prepare an annual report of monitoring results and implementation progress. An annual report will be produced that summarizes monitoring and RMS implementation during 2008. The report will include a schedule of activities to be accomplished in 2009, budget needs for 2009, and outyear budget needs for major projects. The report shall also include a summary of monitoring results and a discussion of the likely causes of any noted declines.

9.2.4. New data shall be used in evaluations of the RMS and in assessing proposed changes. New information resulting from ongoing research will be used to revise the RMS.