

Annual Progress Report:
Implementation of the
Flat-tailed Horned Lizard Rangewide Management Strategy
January 1, 2012 - December 31, 2012

Prepared by the
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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 five Management Areas, a Research Area, and other areas of flat-tailed horned lizard habitat.

Implementation activities during 2012 included regular coordination among the participating agencies through the Management Oversight Group and Interagency Coordinating Committee. Authorized surface impacts have increased recently in Management Areas as a result of solar energy development and military projects. Outreach efforts continued to include the general public and other non-signatories to the CA as active participants in implementing the Strategy. Such groups included the U.S. Border Patrol and several Mexican agencies. Participating agencies conducted population inventories, trend monitoring, and research. New lands were acquired within the East Mesa and West Mesa Management Areas and the Anza-Borrego Desert State Park Management Area. Continued attempts will be made in 2013 to acquire additional lands in the California Management Areas.

Biologists from the Alto Golfo Preserve in northern Sonora (Mexico) attended the ICC/MOG meeting on March 8, 2012. They continue to develop a management strategy for FTHL in northern Mexico. They accomplished considerable outreach, education, and coordination during 2012 with various community groups, ejidos, government agencies, schools, off-road clubs, and ecotourism groups.

The participating agencies believe the Flat-tailed Horned Lizard Rangelwide Management Strategy as designed and implemented by the signatories of the Conservation Agreement continues 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.

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INTRODUCTION

On June 7, 1997, a long-term 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. 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 8
- 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. Customs and Border Protection (CBP) at times participates as guests in the Management Oversight Group (MOG) and the Interagency Coordinating Committee (ICC). The CBP elected not to 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 the ICC to prepare an annual report to monitor plan compliance (Planning Action 9.2.4). This is the 14th annual report and covers the period from January through December 2012.

The FTHL has been the subject of considerable activity within the Endangered Species Act and the federal courts. The 2003 Revision of the RMS summarized that activity through early 2003. Later that year, the Tucson Herpetological Society and others filed suit challenging the 2003 withdrawal to list the FTHL as a threatened species. In 2005, the U.S. District Court for the District of Arizona ruled in favor of the plaintiffs and set aside the 2003 withdrawal 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, USFWS 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). A lawsuit was filed by Defenders of Wildlife and others 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. The court granted summary judgment in favor of the USFWS. This ruling, however, was appealed to the Court of Appeals for the Ninth Circuit which, on May 18, 2009, reversed the District Court's ruling. The court in this case ruled that the administrative record did not support the USFWS's conclusion that flat-tailed horned lizard populations were stable and viable throughout most of its current range. In November 2009, they ordered the USFWS to reinstate the 1993 proposal to list the species as threatened. The USFWS reinstated the proposal on March 2, 2010 (75 FR 9379) and subsequently solicited public comment and held public meetings. The listing determination was due to be issued in November, 2010, but was postponed by the USFWS because of other priorities. On March 15, 2011, the USFWS once again published a notice in the Federal Register to withdraw the proposed rule, based on the conclusion that threats to the species as identified in the 1993 proposed rule are not as significant as earlier believed, and available data do not indicate the threats to the species and its habitat are likely to endanger the species in the foreseeable future. The withdrawal of the proposed rule also concluded that implementation of the RMS is an important conservation effort that reduces threats in the United States and benefits the FTHL throughout its range (76 FR 14210).

IMPLEMENTATION PROGRESS IN 2012

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.

The 1997 Conservation Agreement designates 5 Management Areas (MAs) and one Research Area (RA) and precisely described their boundaries. Maps and boundary descriptions are available in the 2003 RMS. All MAs and a portion of the RA were formally adopted within agency environmental and planning documents (see also Planning Action 6) as a result of the actions listed below. All agencies had applied RMS provisions to these areas prior to the formal adoption.

- Yuma Desert MA: In 2007, MCAS-Yuma finalized an Integrated Natural Resource Management Plan (INRMP) that fully incorporates the RMS for its portion of the Yuma Desert MA. In 2004, Reclamation completed a Five-Mile Zone Resource Management Plan that incorporates the RMS for its portion of this MA.
- East Mesa, West Mesa, and Yuha Desert MAs: An Environmental Assessment (EA) 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: In 2004, the Anza-Borrego Desert State Park's (ABDSP) General Plan was unanimously approved by the California State Parks and Recreation Commission providing long-range guidance and planning to the 600,000 acre park and acknowledging the FTHL RMS. Boundaries for the Borrego Badlands MA within ABDSP have been delineated in the Borrego Badlands and Clark Dry Lake areas.
- Ocotillo Wells RA: In 2003, the BLM portion of the Ocotillo Wells State Vehicular Recreation Area (OWSVRA) RA was designated in an amendment to the Western Colorado Desert Ecosystem Plan. The California State Parks owns a portion of the RA that has not been incorporated into planning documents. The RMS requires no management conservation measures in the RA. However, management for the FTHL falls under guidelines incorporated by California State Parks to evaluate and sustain park resources. Data for five previous years indicates a stable population of FTHL in the park although demographic studies per ICC protocols have not been conducted. A General Plan Update was for OWSVRA and incorporates new acquisitions subsequent to the original General Plan of 1982. The General Plan for Heber Dunes (HDSVRA) has been completed and adopted by the Off Highway Vehicle (OHV) Commission in December, 2011. It does not include a possible relocation project. HDSVRA will continue to be managed outside the purview of the ICC.
- Coachella Valley: BLM-Palm Springs continues to participate in the Coachella Valley Multiple-Species Habitat Conservation and Natural Communities Conservation Plan (CVMSHCP) that incorporates conservation, monitoring, and management for the FTHL in CVMSHCP conservation areas. The CVMSHCP uses an ecosystem/habitat approach to identify natural communities and sensitive species known or expected to occur in the Plan area. The 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.

The international boundary pedestrian fence that was completed in 2008 along the entire border of the Yuma Desert appears to have greatly reduced impacts to FTHL habitat in the Yuma MA resulting from drug smuggling, illegal immigration, and associated law enforcement activities. 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 Tables 1 and 2. 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 3.

BLM-El Centro Field Office

There was one authorization for a renewable project transmission line right-of-way during 2012 in the Yuha Basin, Campo Verde Solar Project. The authorization was for up to 17 acres.

Currently, renewable projects with potential transmission or generation facility impacts to MAs under review are the Dixieland, Silverleaf, and Ocotillo Sol projects.

BLM-Palm Springs South Coast Field Office

Southern California Edison completed construction of the Devers to Palo Verde No. 2 Transmission Line in 2012, which impacted 16 acres of CVMSHCP modeled FTHL habitat within the Coachella Valley. Per the biological opinion, SCE was required to compensate at a 2:1 ratio. In 2012, Wildlands Inc. completed the purchase of 87.5 acres of modeled FTHL habitat within the Willow Hole and Thousand Palms conservation areas of the CVMSHCP.

BLM-Yuma Field Office

No trespass cases were opened in 2012.

BLM Yuma signed and implemented an increase in compensation rate for the BLM managed Yuma Field Office. This increased the land assessment rates from \$286.00 per acre to \$621.00 per acre. In addition there is an added administrative 18.4% and an operations assessment of 25% to cover the cost of patenting the land and/or managing the monies collected. BLM Yuma primarily used this compensation for trespass cases on BLM lands in Arizona, since BLM Yuma does not manage any of the management areas.

MCAS-Yuma

Projects described in the EIS for the Yuma Training Range Complex of 1995 are not subject to the RMS (Planning Action 2.2.1).

Construction of the 3-35 Joint Strike Fighter (JSF) Auxiliary Landing Field began in July 2012.

NAF-El Centro

No disturbance occurred within MAs managed by NAF-El Centro.

Anza-Borrego Desert State Park

No disturbance was authorized within the Borrego Badlands MA.

Table 1. Authorized projects with impacts to habitat within Flat-tailed Horned Lizard Management Areas, 1997-present (acres in parenthesis indicate either temporary disturbance or the project was subsequently withdrawn and no impacts occurred).

Year	Authorizing agency	Project	Acres
East Mesa			
1998	NAF-El Centro	Weapons Impact Scoring Set	1.0
1999	BLM-El Centro	Observation wells	8.77
2001	BLM-El Centro	Level 3 Communications	7.6
2001	BLM-El Centro	Granite Construction sand and gravel	1.0
2002	BLM-El Centro	BLM mining (API & Oat Pit)	82.3
2002	BLM-El Centro	BLM geothermal piping	1.0
2003	BLM-El Centro	BLM API sand and gravel and Ormat	2.8
2008	BLM-El Centro	Drop 2 Reservoir	285
TOTAL			389.47
West Mesa			
2001	BLM-El Centro	Imperial Irrigation District R Line	31.42
2001	BLM-El Centro	Imperial Irrigation District L Line	75.69
2004	NAF-El Centro	NAF cleanup of targets 101 and 103	6.0
2010	NAF-El Centro	Navy geothermal exploratory test well	1.76
TOTAL			114.87
Yuha Desert			
1998	BLM-El Centro	Imperial Irrigation District dike (“S” line transmission)	2.0
2001	BLM-El Centro	Caltrans ditching along Hwy. 98	16.1
2001	BLM-El Centro	Border Patrol blading of staging areas	14.0
2001	BLM-El Centro	Border Patrol maintenance of berms	2.1
2002	BLM-El Centro	Border Patrol cameras	0.6
2002	BLM-El Centro	La Rosita powerline	53.0
2004	BLM-El Centro	Powerpoles to Border Patrol camera	0.46
2008	BLM-El Centro	Powerpoles to Comsite T-line to IID communication	1.4
2008	BLM-El Centro	T-line to IID communication site	1.4
2000s	BLM-El Centro	Border Patrol: disturbance to bridges	3.0
2009	BLM-El Centro	Sunrise Powerlink transmission line	46.41
2010	BLM-El Centro	Tessara Imperial Valley Solar transm. line	(92.9)
2011	BLM-El Centro	C Solar South	3.12
2011	BLM-El Centro	C Solar West	13.7
2011	BLM-El Centro	Centinela	13.3
2012	BLM-El Centro	Campo Verde Solar	17
TOTAL			187.59

(Table 1 continued on next page)

Table 1 (cont.). Authorized projects with impacts to habitat within Flat-tailed Horned Lizard Management Areas, 1997-present (acres in parenthesis indicate either temporary disturbance or the project was subsequently withdrawn and no impacts occurred).

Year	Authorizing agency	Project	Acres
Borrogo Badlands			
2011	ABDSP	Paleoseismic study	3.73
TOTAL			3.73
Yuma Desert			
1999	MCAS-Yuma	Harrier jet crash (temporary disturbance)	(6)
2001	MCAS-Yuma	Rifle range and runway repair	2
2001	Reclamation	Prison right-of-way and monitoring wells	1.3
2002	Reclamation	Reclamation observation wells	0.5
2003	MCAS-Yuma	Weapons familiarization training	2
2004	MCAS-Yuma	Dust control and ammo supply point	10.15
2005	Reclamation	Border easement	14
2010	MCAS-Yuma	Joint Strike Fighter airfield	126.7
TOTAL			156.65

Bureau of Reclamation-Yuma

No new projects that impacted FTHL habitat were authorized in 2012.

Ocotillo Wells State Vehicular Recreation Area

A new water line was installed in 2012 that disturbed 14.4 acres. Biomonitoring was present and FTHL surveys were conducted prior to the start of construction each day.

Total Habitat Disturbance from January through December 2012.

BLM-El Centro authorized 17 acres in the Yuha MA.

Table 2. Acres of flat-tailed horned lizard habitat authorized for impact by RMS signatories from January to December 2012, and cumulative acres of impacts within the management areas and research area.

Agency	Within MA		Outside MA (acres)	Total Acres	Acres Impacted to Date in MAs	
	MA	Acres			Total	Percent ²
BLM-El Centro	East Mesa				388.47	0.38
	West Mesa				107.11	0.12
	Yuha Desert	17			187.59	0.33
NAF-El Centro	East Mesa	0	0	0	1.0	0.01
	West Mesa	0	0	0	7.76	0.02
Anza-Borrego Desert State Park	Borrego Badlands				3.73	0.01
Ocotillo Wells SVRA	1				1	
BLM-Palm Springs	1				1	
MCAS-Yuma	Yuma Desert				140.85	0.12
Reclamation	Yuma Desert				15.80	0.10
BLM-Yuma	1				1	
Total Acres					853.31	0.18³

¹ No land administered within an MA.

² Based on the MA acreage for each agency, including acquisitions (see Table 3).

³ Excluding private lands (see Table 3).

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. Signage for the Yuha Desert, East Mesa, and West Mesa MAs is complete. BLM rangers and restoration crews 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. In addition, BLM-El Centro continues to provide regular outreach by producing and distributing maps of the WECO route of travel designations. Finally, 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 is contracting either the

Student Conservation Association (SCA) or American Conservation Experience (ACE) to engage youth in conducting restoration activities in the Yuha Desert, West Mesa, and East Mesa MAs. Groups of interns improve authorized routes and place dead standing vegetation or cover vehicle tracks from incursions outside the authorized routes of travel. Archaeological surveys are necessary before implementing restoration and are ongoing, concurrent with restoration.

At OWSVRA, a pilot program for trail restoration was initiated using vertical mulch and reseeded/replanting of native vegetation. Plant species chosen for this project were typical of creosote/ burrow brush scrub that promote FTHL habitat. The initial efforts were extremely successful and 4 user-made trails were rehabilitated in the north-western section of the park. Coupled with a GIS database for monitoring responses and success/failure OW is looking to create an adaptive management policy that addresses trail proliferation and habitat rehabilitation.

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

The Colorado and Mohave deserts have been targeted as prime locations for utility-scale renewable energy development. Project developers building renewable energy projects in these deserts are required as part of the permitting process to minimize and mitigate their impacts on local species and habitats. The Renewable Energy Action Team (REAT), composed of representatives from the BLM, the USFWS, the California Department of Fish and Wildlife, and the California Energy Commission, was formed to coordinate and expedite the permitting process. The REAT enlisted help from the National Fish and Wildlife Foundation (NFWF) to manage mitigation funds to better coordinate acquisition and management of mitigation lands associated with the large-scale projects. Several of these utility-scale projects could be constructed within FTHL historical habitat and would likely require compensation in accordance with the RMS. NFWF will manage and administer compensation funds collected for these projects within FTHL habitat. Therefore, land managers will need to coordinate the identification, prioritization, and acquisition of lands in MA's with NFWF staff.

See Table 3 for current and previous acquisitions within MAs.

In-holdings within the Yuma Desert MA were purchased previously and all land remains federally owned.

In Anza-Borrego Desert State Park, possible land acquisitions within FTHL habitat continue in coordination with the Anza-Borrego Foundation (ABF). ABF seeks to acquire private in-holdings within ABDSP including acres within the FTHL MA.

BLM-El Centro continues to use compensation funding for acquisition of private lands in FTHL MAs. They purchased 80 acres in 2012 within the West Mesa MA.

The Navy acquired 2,560 acres of private land in the West Mesa in 2012.

In the Borrego Badlands MA in 2012, 391.96 acres were acquired by the Anza-Borrego Foundation (ABF), the park’s cooperating association. These lands will be held by ABF until the State can purchase the land for the park.

Table 3. Ownership of lands within Flat-tailed Horned Lizard Management Areas.

Management Area	Initial acreage (1997) ¹			Acres acquired since 1997			Current acreage
	Signatory	Non-sig.	Total	Previous	2012	Total	
East Mesa							
BLM	99,741						102,990
NAF	8,455						8,455
Private		7,339		3,569		3,569 ²	3,770
TOTAL	108,196	7,339	115,535				115,535
West Mesa							
BLM	78,787						86,205
NAF	30,605 ³				2,560	2,560	33,165
State		2,678					2,678
Private		21,784		7,338	80	9,978 ⁴	11,806
TOTAL	109,392	24,462	133,854				133,854
Yuha Desert							
BLM	57,341						57,341
Private		2,958					2,958
TOTAL	57,341	2,958	60,299				60,299
Borrego Badlands							
State Parks	38,228						41,372
Private		4,253		2,752	392	3,144 ⁵	1,109
TOTAL	38,228	4,253	42,481				42,681
Yuma Desert							
MCAS	99,300						114,800
Reclamation	16,200						16,200
State		15,500		15,500		15,500 ⁵	0
TOTAL	115,500	15,500	131,000				131,000

¹Estimates of initial acreages in 1997 for MAs in California were revised by BLM-EC in 2010.

²Purchased by, and transferred to BLM.

³Estimate of initial acreage in 1997 was revised by NAF-El Centro in 2012.

⁴Includes 7,338 acres purchased by, and transferred to BLM and 2,560 purchased by, and transferred to the Navy.

⁵Includes 1,456 acres acquired by the Anza-Borrego Foundation, all but 392 of which have been transferred to California State Parks.

⁶Purchased and administered by MCAS.

Seek funds for land acquisitions in MAs

See previous section.

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

The development of the Desert Renewable Energy Conservation Plan has considered and provided provisions to address corridors between FTHL MAs.

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. Open riding at OWSVRA may be affecting habitat along its border with the Borrego Badlands. Consideration should be made for habitat connection along this border to ensure movement between adjacent populations.

The ICC added a connectivity/corridor analysis project to the research project list to determine if exchange among populations is occurring and to identify important corridors and linkage areas to be conserved.

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 signatory agency offices. It meets as necessary each year to coordinate implementation of the Conservation Agreement in response to ICC recommendations. The MOG met on the following dates during 2012:

8 March (MOG/ICC; BLM-El Centro)

9 September (BLM-El Centro)

Major items discussed by the MOG during 2012 were analysis of recent monitoring data, land acquisitions, proposals for various development projects, and possible revision of the RMS.

Interagency Coordinating Committee

The ICC is comprised of biologists from 13 signatory agency offices. 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 that outlines accomplishments under the RMS, lists issues regarding management of the MAs and RAs, and details planned actions for the upcoming year. The ICC met on the following dates during 2012:

2 May (monitoring workshop; BLM-El Centro)

8 March (MOG/ICC; BLM-El Centro)

14 June (BLM-Yuma)
4 October (BLM-Yuma)
13 December (BLM-El Centro)

Major items the ICC discussed in 2012 included maintaining a centralized database for monitoring data, analyzing recent monitoring data, possible revisions to the RMS, purchasing land in California MAs, development of a conservation strategy in Mexico, various projects that could impact FTHL habitat (particularly utility-scale solar energy projects), the results of monitoring and research, updating the research and monitoring list, and training of FTHL monitors.

Coordination with Mexico

Staff of the Alto Golfo de California Biosphere Reserve (AGCBR) continued to participate in the ICC and to discuss the development of a Mexican management strategy and other issues of common concern.

Special management areas, equivalent to the MAs in the U.S., need to be identified and managed as such. Additional signage and interpretive materials are needed in support of these areas. In addition, MOG and/or ICC need to meet to focus management and research needs in Mexico and projects to support those needs. Ideally, the meetings should be held in Sonora and include representatives from AGCBR and El Pinacate y Gran Desierto de Altar Biosphere Reserves. Also, the final Mexican Rangewide Management Strategy is under development, and should be completed by end of calendar year 2013. 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 October 2012, the Secretary for the Department of the Interior signed the final Programmatic Environmental Impact Statement (PEIS) for solar energy development that provides a blueprint for utility-scale solar energy permitting in six states, including California and Arizona. The document identifies BLM-administered lands in the six-state study area that may be environmentally suitable for solar energy development and lands that would be excluded from such development. The list of criteria excluding areas from utility-scale solar development include all ACEC's and FTHL MA's. Therefore, if implemented, the solar PEIS should limit utility-scale solar energy development within California and Arizona MA's.

BLM-El Centro continues to implement the Western Colorado Routes of Travel Designation (WECO). BLM-El Centro completed the WECO in January, 2003, which 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 this zone that parallels the international border. This RMP incorporated the RMS and was further described in the 2004 FTHL Annual Report.

MCAS-Yuma continues to implement the INRMP (see Planning Action 1), which fully incorporates and implements the RMS.

BLM-Palm Springs continues to participate in the CVMSHCP, which ensures the continued existence of the FTHL within designated conservation areas in the Coachella Valley.

Staff from BLM-El Centro, Department of Fish and Game Region 6, and Fish and Wildlife Service Region 8 submitted comments on the draft Desert Renewable Energy Conservation Plan's DRECP preliminary conservation strategy map to incorporate areas of potential connectivity between the Yuha and West Mesa MA's consistent with Planning Action 5. Additionally, FTHL MA's have been identified on the preliminary conservation strategy map as areas with high biological value. This will ensure the management and conservation goals identified in the RMS are incorporated into the DRECP.

Customs and Border Protection

BLM-El Centro coordinates monthly meetings with 3 CBP offices.

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

Law Enforcement

BLM-El Centro has continued to increase law enforcement patrols in FTHL habitat in Imperial County, particularly within the East Mesa MA (see description under Planning Action 3 above). Law enforcement officers report that the majority of recreational users in the MAs are now complying with the route designation requirements by staying on approved routes and camping in appropriate areas.

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

OWSVRA initiated a multi-disciplinary task force in 2011 to educate and enforce the "trails only" designation east of Poleline Road. This effort continued in 2012, and includes increased

interpretive and regulatory signage, public outreach by park interpreters and rangers, and enhanced law enforcement.

Public Information

BLM-El Centro continues to maintain informational kiosks and update and distribute the WECO area road 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 partnered with the Desert Protective Council in securing of a grant to produce and distribute an interpretive brochure of the Yuha area. Recreation is allowed within a limited area of the MCAS portion of the Yuma Desert MA. MCAS has published a recreational use map depicting closed areas that is supported with on-the-ground signage. The Range Wardens and Facility Control monitor Range access in real-time for natural resource preservation, including the FTHL MA. In addition, MCAS includes a FTHL presentation to DOD, academic, and private contractors who will be accessing the BMGR via in person and online Range Briefs. Finally, MCAS provides CBP with a FTHL brief prior to Weapons Tactics Instruction (WTI) training twice a year and in quarterly law enforcement meetings.

Reclamation placed signs near FTHL habitat south of Yuma to inform off road users about resource damage. Reclamation coordinated with BLM-Yuma Law Enforcement and AGFD regarding this issue.

FTHL are addressed by the interpretive department at OWSVRA in their wildlife presentations along with rules and regulations regarding the species.

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

The University of Arizona's (UA) School of Natural Resources and the Environment continued work under contract with MCAS-Yuma to evaluate the effects of the proposed Joint Strike Fighter project and the effectiveness of proposed mitigation measures. This research project began in 2011 and will continue through 2014. A brief summary for 2012 is included in the Abstracts portion of this report.

With MCAS funding, the United States Geological Survey (USGS) and UA continued a disturbance mapping effort. Five students were hired to map authorized and unauthorized roads and trails from 2008 high resolution (1 ft.) imagery. The project estimated an average of 6.7 km of linear roads per km² of BMGR-W land, with average of 15 road segments measuring an average of 0.45 km per km² of land. The study walked transects to ground validate the mapped roads and trails. In total they completed 26 transects distributed over the entire Barry M. Goldwater Range (BMGR)-West, and covering a majority of soil types. The 1.5 km transects

were meant to both validate the maps produced in the lab, and serve as a baseline inventory that can be used for long-term and repeated monitoring. GPS locations and photographs of all visible disturbances along each transect were collected.

The field efforts within the MA included 6 transects located within the FTHL boundary. One transect was located on the west side of Foothills Blvd just south of point A4. Three transects were located near 2012 FTHL occupancy plots. Those plot numbers are 65, 61, and 72. These three transects were designed to study known hot spots for the lizard. The fifth transect was located on border fence near occupancy plot #30. The sixth and final transect was located near occupancy plot #56. The final two transects were based solely on soil type rather than FTHL suitability.

Initial field validation suggested that disturbance mapping from aerial photography underestimated the true number of disturbances by ~40%. Many of the disturbances noted in the field may have occurred since the 2008 imagery was acquired. Many disturbances were faint, and it is likely that they could not be detected in the imagery. Detectability was also influenced by soil type.

AGFD continues to fund an on-going study to evaluate the potential impacts of Sahara Mustard (*Brassica tournefortii*, BRTO) on the FTHL. BRTO is an invasive winter annual plant that may threaten FTHL by reducing the density of native annual plants, whose seeds are the major diet of desert harvester ants (genus *Pogonomyrmex* and *Messor*), which in turn are the main diet of FTHL. The study will assess BRTO's effects on the richness and abundance of both desert winter annual plants and desert harvester ants. In addition, the study will assist in predicting BRTO impacts on FTHL populations.

AGFD issued 7 permits for collecting or handling FTHL during 2012. CDFG issued no new scientific collecting permits during 2012; 70 Letters of Concurrence were issued to monitoring trainees.

Bio-monitoring workshop. The ICC again partnered with Southwest Partners in Amphibian and Reptile Conservation (SW PARC) in 2012 to organize and conduct 2 biomonitor training workshops for the FTHL consisting of about 3-4 hours of field training and 2 hours of classroom debriefing. The high-demand workshops were conducted June 19-20 to train biologists, mostly private consultants, who may work as monitors on projects that impact FTHL. ICC agencies provided staff as experts to assist with the training to certify approximately 70 FTHL monitors who saw up to 14 FTHL per day. This was a worthwhile effort for all who participated in the organization, training, and follow-up. The majority of the feedback in regard to the quality of the workshop was extremely positive. The ICC hopes that the Southwest Partners in Amphibian and Reptile Conservation continue to manage future training sessions.

OWSVRA continues to provide an award-winning interpretive program that focuses on desert ecology to over 50,000 participants annually. This program includes education about the FTHL and the need to protect habitat at OWSVRA.

Planning Action 9: Continue Inventory and Monitoring.

Implementation of variations of the current monitoring protocols began in 2002. Techniques were refined over subsequent years, culminating in a FTHL Monitoring Plan that was developed by the ICC in 2008. This plan described 2 types of standardized monitoring methods. Occupancy surveys are large-scale efforts to document the presence (“occupancy”) of FTHL among numerous survey plots broadly distributed within each MA. The purpose is to estimate the proportion of sites occupied, which could be used as a reasonable indicator of population status both in MAs and rangewide. The 2008 plan recommended at least 120 4-ha plots per MA, surveyed simultaneously for one hour by 4 observers working independently. In 2011, this protocol was revised to improve the precision of occupancy estimates and detection probability. Demographic surveys are localized intensive efforts within only a few (usually 2) 9-ha selectively chosen plots within each MA. Plots are surveyed by a team of 4-6 observers for 10 consecutive days. All FTHL GPS locations are recorded, a range of measurements are taken, and FTHL with snout-vent length greater than 55mm are PIT-tagged. Demographic results are intended to provide more-detailed assessments of FTHL abundance, density, survivorship, and recruitment within purportedly higher-quality habitats within each MA.

BLM-El Centro continued demographic surveys at 4 plots on the East Mesa, Yuha, and West Mesa MAs. However, they did not conduct occupancy surveys in 2012. In cooperation with FWS-Carlsbad and AGFD, BLM-El Centro continued to improve the FTHL monitoring database and created a Sharepoint website. BLM-El Centro coordinated with FWS-Carlsbad on data entry and quality control using the new database. In 2012, program glitches continued to be a problem. The database contains inherent errors, some of which are internal in the database script and others are due to data entry. These errors include but are not limited to, records being deleted after entry and records being entered inconsistently across locations and years. It is possible that some estimates reported at some locations in previous years may have been inaccurate due to such errors. It is the intention of the ICC to fix these errors and re-evaluate the condition of the monitoring data. The ICC is hopeful that a complete and up-to-date analysis will be included in the 2013 report.

Due to lack of funding, OWSVRA reduced their level of effort for occupancy surveys within the park and surveyed only 14 occupancy plots 6 times each during 2012.

AGFD, MCAS, and Reclamation completed surveys on 2 demographic plots that were established in the Yuma Desert MA. One plot lies within the Reclamation portion and the other within the BMGR portion. AGFD, MCAS, and Reclamation completed surveys on 75 occupancy plots in the Yuma Desert MA.

ABDSP decided to expand their occupancy surveys at Borrego Badlands MA to 60 plots with a goal of 3 visits each. Two of the original 40 plots were retired as not reasonably surveyable (more than 50% of the plot was unreachable/unwalkable). Twenty-two new plots were selected to best distribute the surveys throughout the MA and to ensure the proportionality within each stratum. A total of 226 visits were made, exceeding our goal.

Summaries of 2012 monitoring results from occupancy plots are given in Table 4 and from demographic plots in Table 5. Summaries of all monitoring results from 2002-present are given in Tables 6 and 7.

Table 4. Number of occupancy plots surveyed in 2012 and percent that were found to be occupied.

Management Area	Number of Plots	Naïve Occupancy Estimate
Yuma Desert	75	78.7%
Ocotillo Wells	14	57.1%
Borrego Badlands	60	10.0%

Table 5. Summary of flat-tailed horned lizard captures on demographic plots in 2012 (juveniles < 60mm SVL).

Plot	Location Description	MA	Adults Captured	Juveniles Captured
BMG (=YD1)	BMG Range	Yuma Desert	37	4
BOR (=YD2)	Reclamation 5-Mile Zone	Yuma Desert	18	0
315 (=EM1)	East of geothermals	East Mesa	¹	¹
486 (=YU1)	Pinto Wash	Yuha Basin	¹	¹
156 (=WM1)	SW of Superstition Mtn	West Mesa	¹	¹
WM2	On Navy target	West Mesa	Discontinued	
WM3		West Mesa	¹	¹
Squaw Peak	Near Squaw Peak	OWSVRA	Discontinued in 2009	
Mudhills	Mudhill area	OWSVRA	Discontinued in 2009	

¹Data not available.

Table 6. Summary of monitoring estimates on Flat-tailed Horned Lizard Management Areas, with 95% confidence intervals. Estimates are of the total population in the Management Area (except where noted) or the probability of occupancy of lizards (L), scat (S), or both (B) on plots in the Management Area. Population estimates were based on mark-recapture data, except one case where trapping webs were used (TW) in 2003 in the Yuma MA.

	Yuma Desert	East Mesa	West Mesa	Yuha Basin	OWSVRA	Borrogo Badlands
2002	-	-	-	25,514 (12,761-38,970)	-	-
2003	16,328 (TW) (8,378-31,794) 25,855 (16,390-43,951)	42,619 (19,704-67,639)	10,849 (3,213-23,486)	-	19,222 (18,870-26,752)	-
2004	-	-	-	73,017 (4,837-163,635)	-	-
2005	22,120 ¹ (19,962-25,357)	-	0.06 (0.02-0.14) L 0.48 (0.31-0.79) S	-	24,345 (14,329-69,922)	-
2006	-	0.44 (0.28-0.69) L 0.83 (0.76-0.89) S	-	-	1.00 (no CI) L 0.56 (0.43-0.72) S	-
2007	-	-	-	-	1.00 (no CI) L 0.74 (0.52-1.00) S	-
2008	16,185 ¹ (12,840-20,285)	-	-	0.56 (0.29-1.00) L 1.00 (no CI) S	0.66 (0.42-1.00) L 0.74 (0.64-0.83) S	-
2009	19,422 ¹ (13,703-24,925)	-	0.86 (0.53-1.00) L 0.87 (0.75-0.99) S	-	0.75 (0.50-1.00) L 0.88 (0.82-0.94) S	-
2010	27,946 ¹ (24,871-31,183) 0.91 (0.39-0.99) L 1.00 (0.98-1.01) B	0.75 (0.22-0.97) L 0.83 (0.70-0.91) B	-	-	0.85 (0.49-0.97) L 0.90 (0.84-0.94) B	-
2011	0.88 (0.78-0.94) L					
2012	0.79 (0.69-0.89)L	- ²	- ²	- ²		

¹ Estimates are only for areas of optimal habitat, approximately 10% of the MA.

² Surveys were conducted but analysis is unavailable because of database issues.

Table 7. Flat-tailed horned lizard demographic plot density estimates (adults) with 95% confidence intervals calculated from Huggins closed-capture abundance estimates and mean maximum distance moved (Wilson and Anderson 1985).

MA	Yuma Desert		East Mesa	West Mesa		Yuha Basin	OWSVRA	
Plot	YD1 (=BMG)	YD2 (=BOR)	EM1 (=315)	WM1 (=156)	WM2/ WM3 ²	YU1 (=486)	Squaw Peak	Mudhills
2007	-	-	1.62 (1.26 – 1.97)	0.83 (0.48 – 1.18)	-	1.15 (0.88 – 1.43)	-. ¹	-. ¹
2008	2.24 (1.75 – 2.78)	0.98 (0.82 – 1.26)	1.23 (0.89 – 1.56)	0.33 (0.20 – 0.45)	2.34 (1.86 – 2.82)	1.11 (0.83 – 1.38)	-. ¹	-. ¹
2009	3.36 (2.41 – 4.24)	1.83 (1.24 – 2.41)	3.31 (2.64 – 3.98)	1.19 (0.83 – 1.55)	3.40 (2.71 – 4.08)	2.70 (2.13 – 3.27)	-	-
2010	5.54 (5.11 – 6.00)	4.82 (4.11 – 5.56)	5.54 (4.87 – 6.22)	2.02 (1.47 – 2.58)	6.26 (5.24 – 7.27)	5.16 (4.24 – 6.07)	-	-
2011 ³								
2012 ³								

¹Surveys were conducted in 2007 and 2008 but sample sizes were too small for statistical analysis.

²Surveys were conducted on WM2 in 2008-2009 and on WM3 beginning in 2010.

³Analysis unavailable because of database issues.

TREASURY REPORT

Table 8. Expenditures and balances for compensation fund accounts through Nov. 2012.

	Yuma MA ² (17.3% INC)	AZ ASH intermediate acquisitions costs ³ (19% INC)	AZ ASH land purchase cost ⁴ (19% INC)	East Mesa MA ⁵ (% INC)	West Mesa MA ⁶ (% INC)	Reclamation Drop 2 ⁷	Sunrise Powerlink ⁸
carryover	120,013.32	130,842.94	600,983.12	61213.52	12,425.43	485,151.78	11,158.12
Additions		311.66					
Obligations	32,510.07		41,582.67				879.42
TOTALS	87,503.25	131,154.60	599,400.45	61,213.52	12,425.43	485,151.78	10,278.70

²AZ 320 7122 5701: LVTFA0957010

³AZ 320 7122 5808: LVTFA0958080

⁴AZ 320 7122 6974: LVTFA0969740

⁵CA 670 7122 6712: LVTFB0967120

⁶CA 670 7122 6713: LVTFB0967130

⁷LRORBX901700

⁸LVTFB10649L0:

Table 9. Treasurer's report to the MOG as of August 31, 2012.

Yuma MA		As of 8/31/12	New Budget Authority	Carry-Over (Field)	Consumable Budget	Commitments	Unliquidated Obligations	Total Expenditures	Total Obligations (Incl. Comm)	Current Available Funds
Funds Center	FA Budget Activity	Funded Program		\$	\$					\$
LLAZC02000	L7122	LVTF5701AZ00		1,308.77	1,308.77					1,308.77
LLAZC02000	L7122	LVTFA0957010		120,013.32	120,013.32	0.00	20,658.00	10,202.57	30,860.57	89,152.75
Overall Result										90,461.52

E. Mesa			New Budget Authority	Carry-Over (Field)	Consumable Budget	Commitments	Unliquidated Obligations	Total Expenditures	Total Obligations (Incl. Comm)	Current Available Funds
Funds Center	FA Budget Activity	Funded Program		\$	\$					\$
LLCA000000	L7122	LVTFB0967120		61,213.52	61,213.52					61,213.52

W. Mesa			New Budget Authority	Carry-Over (Field)	Consumable Budget	Commitments	Unliquidated Obligations	Total Expenditures	Total Obligations (Incl. Comm)	Current Available Funds
Funds Center	FA Budget Activity	Funded Program		\$	\$					\$
LLCA000000	L7122	LVTFB0967130		12,425.43	12,425.43					12,425.43

(Continued on next page)

Table 9
(cont.)

Yuma Area Service Highway Land Purchase			New Budget Authority	Carry-Over (Field)	Consumable Budget	Commitments	Unliquidated Obligations	Total Expenditures	Total Obligations (Incl. Comm)	Current Available Funds
Funds Center	FA Budget Activity	Funded Program		\$	\$		\$	\$	\$	\$
LLAZC02000	L7122	LVTFA0969740		600,983.12	600,983.12		0.00	41,582.67	41,582.67	559,400.45

Yuma Area Service Highway Intermediate			New Budget Authority	Carry-Over (Field)	Consumable Budget	Commitments	Unliquidated Obligations	Total Expenditures	Total Obligations (Incl. Comm)	Current Available Funds
Funds Center	FA Budget Activity	Funded Program		\$	\$			\$	\$	\$
LLAZC02000	L7122	LVTFA0958080		126,225.58	126,225.58			-311.67	-311.67	126,537.25
LLCA000000	L7122	LVTFA0958080		4,617.36	4,617.36					4,617.36
Overall Result										131,154.61

BOR Drop II			New Budget Authority	Carry-Over (Field)	Consumable Budget	Commitments	Unliquidated Obligations	Total Expenditures	Total Obligations (Incl. Comm)	Current Available Funds
Funds Center	FA Budget Activity	Funded Program		\$	\$					\$
LLCA000000	L1920	LRORBX901700		485,151.78	485,151.78					485,151.78

CONCLUSIONS

Signatory agencies continue close cooperation and careful execution of their respective responsibilities as described in the 2003 updated version of the FTHL RMS. The signatory and cooperating agencies continue to implement the RMS throughout the MAs and outside the MAs within FTHL habitat. 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 for FTHL habitat conservation. During the past year, implementation of the RMS planning actions has positively benefited FTHL conservation. Outreach efforts continue to include the general public, other U.S. agencies (e.g., CBP), and Mexican agencies as active participants in RMS implementation. AGCBR and Pinacate Biosphere Reserves are working closely with U.S. agencies on research and conservation efforts to benefit the FTHL in Mexico. Authorized surface impacts have remained low in MAs. However, there is some concern the 1% development cap may be reached, and exceeded, in some MAs due to utility-scale renewable energy development and navy projects.

The MOG and ICC continue to support the 2004 decision to allow distributing compensation funding among MAs, regardless of source state, since no land is available for purchase in the Yuma MA. This decision continues to focus on purchasing land available in any MA prior to private development. If there is no additional land available for purchase in a MA, the group will continue to use compensation funds for habitat restoration within MAs. Some signatory participants have been successful in securing funding for rehabilitation efforts from non-compensation funds. This supplements the compensation funds in providing management capability for RMS implementation.

Population inventories and the monitoring of trends continue, as does research in MAs and FTHL habitat areas. This information is useful in developing future management actions and providing direction on how best to implement current projects.

Public outreach and education continues. The informational videos produced in 2006 for the general public and the CBP will help in this effort. Public understanding of the FTHL, its habitat needs, and authorized activities in its habitat areas, is necessary to fully implement the RMS.

The 2003 updated version of the FTHL RMS continues to direct participating agencies towards ever more effective management and conservation of FTHL.

RMS IMPLEMENTATION PROGRESS TO DATE (Updated schedule)

The following table displays the priority level, responsible agency, estimated cost, and schedule for completing each Planning Action. The priority levels 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								
☑	1	1.1	Designate Yuma Desert MA	2	RECLAMATION USMC	1	0	0	0	0	0
☑	1	1.2	Designate East Mesa MA	2	BLM USN	1	0	0	0	0	0
☑	1	1.3	Designate West Mesa MA	2	BLM USN	1	0	0	0	0	0
☑	1	1.4	Designate Yuha Desert MA	2	BLM	1	0	0	0	0	0
☑	1	1.5	Designate Borrego Badlands MA	2	ABDSP	1	0	0	0	0	0
☑	3	1.6	Designate Ocotillo Wells RA	1	BLM OWSVRA ABDSP	1	0	0	0	0	0
☑	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								
⇒	1	2.1.1	Apply mitigation measures	∞	ALL	5	1	1	1	1	1
⇒	1	2.1.2	Require compensation	∞	ALL	25	5	5	5	5	5
⇒	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
⇒	1	2.2.2	Do not dispose of lands in MAS	∞	ALL	0	0	0	0	0	0
⇒	3	2.2.3	Continue maintenance in existing ROWs	∞	ALL	0	0	0	0	0	0
⇒	2	2.2.4	Require fencing along Yuma Desert MA boundary road	∞	ALL	50	0	50	0	0	0
⇒	2	2.3.1	Limit surface disturbance from mineral activities in MAS	∞	ALL	5	1	1	1	1	1
⇒	2	2.4.1	Reduce new roads to a minimum in MAS	∞	ALL	5	1	1	1	1	1
⇒	1	2.4.2	Designate routes "open," "closed", or "limited." Give route signing a priority	∞	BLM USMC BR	100	20	20	20	20	20
⇒	1	2.4.3	Reduce route density in MAS		See 2.4.2						
⇒	1	2.4.4	Coordinate with U.S. CBP	∞	ALL	20	4	4	4	4	4
⇒	3	2.5.1	Allow OHV recreation in RA	∞	OWSVRA	0	0	0	0	0	0
⇒	1	2.5.2	No competitive recreational events in MAS	∞	ALL	0	0	0	0	0	0
⇒	2	2.5.3	Allow non-motorized recreational activities in MAS, but no new recreational facilities	∞	ALL	0	0	0	0	0	0
⇒	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 in California MAS)	∞	BLM CDFG ABDSP	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	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
<input checked="" type="checkbox"/>	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
<input checked="" type="checkbox"/>	2	6.3.2	Incorporate actions in CVM SHCP (Note: Other state and local agencies will fill key roles)	3	BLM CDFG USFWS	0	0	0	0	0	0
<input type="checkbox"/>	2	6.3.3	Incorporate actions in Western Colorado Desert Route Designation	∞	BLM	20	4	4	4	4	4
<input type="checkbox"/>	1	6.4	Coordinate with U.S. CBP and develop mutual agreements	2	BLM RECLAMATIO N USMC	6	2	2	2	0	0
<input type="checkbox"/>	2	6.4.1	Encourage use of techniques to minimize CBPOHV activity	∞	BLM RECLAMATIO N USMC	5	1	1	1	1	1
<input type="checkbox"/>	2	6.4.2	Prepare educational briefing for CBP agents	1	BLM BR	5	1	1	1	1	1
		7.	Promote the purposes of the RMS through law enforcement and public education								
<input type="checkbox"/>	1	7.1	Provide adequate law enforcement	∞	BLM CDFG AGFD USMC	750	150	150	150	150	150
<input type="checkbox"/>	3	7.2	Provide public information and education	∞	ALL	25	5	5	5	5	5
		8.	Conduct research necessary to define and implement necessary management actions effectively								
<input type="checkbox"/>	3	8.1	Require permits for research	∞	ALL	5	1	1	1	1	1
<input type="checkbox"/>	2	8.2	OWSVRA shall continue to fund research	∞	OWSVRA	200	40	40	40	40	40
<input checked="" type="checkbox"/>	2	8.3.1	Test trapping as a population census technique	2	ALL	0	0	0	0	0	0
<input type="checkbox"/>	2	8.3.2	Test direct counting methods	2	ALL		Included in 8.2 and 8.3.1				
<input type="checkbox"/>	2	8.4	Determine life history and demographic data (sentinel plots)	5	BLM MCAS, RECLAMATIO N OWSVRA ABDSP	300 150 150 100	60 30 30 20	60 30 30 20	60 30 30 20	60 30 30 20	
<input type="checkbox"/>	2	8.5	Determine effects of conflicting activities	5	ALL	300	60	60	60	60	60
<input type="checkbox"/>	3	8.6.1	Determine genetic variation in population	5	ALL	40	0	20	0	20	0
<input type="checkbox"/>	3	8.6.2	Determine effects of non-natural barriers	∞	ALL	30	5	5	5	5	5
<input type="checkbox"/>	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, RECLAMATION OWSVRA ABDSP	400 180 135 150	100 60 45 50	50	100 60 45 50	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

Abbate, D. J. and D. J. Leavitt. 2013. Flat-tailed Horned Lizard (*Phrynosoma mcallii*) Demographic Monitoring Within the Yuma Desert Management Area: 2012 Progress Report. Arizona Game and Fish Department, Wildlife Contracts Branch, Phoenix, Arizona. 22 pp. We captured 18 and 37 FTHL adult individuals within the BR and BMGR survey plots respectively. Of these, 6 were encountered for the first time on the BR plot and marked with PIT tags and 2 (previously detected and toe-clipped as juveniles on the BR plot) were also PIT tagged. We captured and PIT tagged 16 newly identified adults on the BMGR plot and permanently marked 3 other adults with PIT tags that were encountered and toe-clipped during a previous season. Reproduction was at its lowest level since monitoring began in 2008 with only 4 juvenile detections on the BMGR plot and none on the BR plot. Analysis of yearly, summer, and winter precipitation revealed a strong pattern of lizard abundance being associated with winter precipitation. Analysis of 2012 survey results indicate abundance of FTHL decreased since 2010 on both the BR and BMGR sampling plots within the Yuma Desert MA. In contrast to 2011, adults on the BR plot during August 2012 appeared to be in good condition. All adults processed were relatively robust and most appeared to be well nourished.

Goode, Matt, and Mickey Ray Parker. 2013. Evaluation of potential impacts of the Joint Strike Fighter Program on the flat-tailed horned lizard at MCAS-Yuma, Barry M. Goldwater Range, 2012 Annual Report. School of Natural Resources & Environment, University of Arizona, Tucson, Arizona. 15pp. Intensive fieldwork on the Flat-tailed Horned Lizard (FTHL; *Phrynosoma mcallii*) was conducted from May-October 2012 on the Barry M. Goldwater Range (BMGR), near Yuma, Arizona. This report covers year two of a four-year study funded by Marine Corps Air Station-Yuma (MCAS). The study is designed to evaluate potential impacts of the Joint Strike Fighter (JSF) program, including construction of the Auxiliary Landing Field (ALF) and operational activities, on the FTHL. Construction of the ALF commenced in late July 2012, beginning with the installation of FTHL exclusion fencing.

Nineteen mark-recapture plots were surveyed 26 times. The 10 plots established in 2011 were resurveyed, and nine new plots were created, 6 of which were located in areas free of human disturbance. Population estimates of all plots averaged 23.9 ± 2.7 (range = 4 -60) individuals per 4-ha plot. On previously established plots, estimates were lower than those from 2011, likely due to the absence of the large number of juveniles observed in 2011. FTHLs removed from the ALF footprint were translocated to six existing mark-recapture plots. Plots with low population estimates after their first survey in 2012 still had low population estimates, even after lizards were translocated to them.

A total of 167 FTHLs were tracked via radiotelemetry in Project Year 2, six of which were first telemetered in Project Year 1. Of the 167 FTHLs that were telemetered, 78 were animals that had been translocated. Non-translocated individuals were re-located 1795 times, and translocated individuals were re-located 941 times. Translocated lizards on average moved more than non-translocated lizards, though this may be due to seasonal differences in movement patterns. As in Project Year 1, predation was the primary source of mortality for telemetered lizards. As of January 2013, 5 translocated FTHLs are still being tracked.

Removal efforts in the ALF footprint yielded 499 FTHLs, all of which were translocated either to mark-recapture plots (304 lizards) or just over the FTHL exclusion fencing (175 lizards), with the exception of 20 individuals that were sent to the San Diego Zoo for display and use in hearing tests. Translocated lizards were encountered during subsequent surveys on mark-recapture plots. FTHLs translocated over the exclusion fencing often crossed the fence back into the airfield footprint.

A total of 6221.1 miles were driven on the Hardball, yielding observations of 377 live reptiles and 92 DORs. As in Project Year 1, FTHLs were the most commonly encountered reptile. Twenty-six DORs were monitored until they were no longer present. During road surveys in which the driver was unaware of the location of DORs previously marked in a GPS unit by the passenger, the driver was unable to see the DOR 42% of the time. This suggests that much more road mortality may be occurring than what can be readily observed.

A collaborator was selected to investigate FTHL vulnerability to jet noise. Initial meetings have taken place, and the study is scheduled to begin during the 2013 field season.

Hollenbeck, Eric, and Joe Hopkins. 2013. Flat-tailed Horned Lizard Occupancy Surveys within the Borrego Badlands Management Area for Survey Year 2012. Anza-Borrego Desert State Park—Colorado Desert District—California State Parks. In 2011, Occupancy Plots were done for the first time in the Borrego Badlands MA; however, it was only 40 plots done once each. When additional FTHL-experienced personnel joined the staff in the spring of 2012, someone who could recruit and manage a volunteer corps, it was decided to expand the survey to 60 plots with a goal of three visits each. Two of the original 40 plots were retired as not reasonably surveyable (more than 50% of the plot was unreachable/unwalkable). Twenty-two new plots were selected to best distribute the surveys throughout the MA and to ensure the proportionality within each stratum. A total of 226 visits were made, exceeding our goal. The two retired plots were visited once each and their unsuitability was confirmed. Two totally barren playa plots were visited twice each. Of the remaining 58, 46 had four visits and 12 could only be surveyed 3 times before time ran out. Therefore, $1*2 + 2*2 + 12*3 + 46*4 = 226$ visits. For FTHL, there were 8 positive visits and 6 plots positive with two plots testing positive twice. For DHL, there were 6 positive visits and 4 plots positive with one plot testing positive three times. There was very little horned lizard activity with only 19 visits (8.4%) being positive for scat and almost all of those with only one scat. Five of the FTHL and two of the DHL were found on only nine survey days between August 6 and August 16. The other 57 survey days produced only three FTHL and four DHL.

Leavitt, Daniel, Daniel Sturla, and Michael Ingraldi. 2013. Flat-tailed Horned Lizard Occupancy Surveys within the Yuma Desert Management Area on the Barry M. Goldwater Range – West; Annual Report. Arizona Game and Fish Department Wildlife Contracts Branch, Phoenix, Arizona. We detected FTHL during 224 of 450 (50%) total surveys and on 59 of 75 (79%) of survey plots in 2012. On average, 37.33 (± 6.89 SD) FTHL were found during each of 6 survey passes (i.e., 1 complete survey of all 75 survey plots) with the total number detected varying between 30 and 48 individuals per survey pass. The naïve

estimate for the proportion of survey plots occupied, which assumed a detection probability equal to 1.0, ranged from 0.51 to 0.81 across survey passes. Modeled FTHL occupancy was estimated at 0.79 (95% CI: 0.69-0.89) for our study area. The probability of detecting a FTHL, if it occurred on a plot, was estimated at 0.89 (95% CI: 0.86-0.92). Compared to 2011, our surveys in 2012 detected fewer lizards in fewer locations. In addition, the modeled occupancy for FTHLs was lower in 2012 than in 2011. However, the detection probability was higher in 2012 as compared to 2011.

Appendix B: 2013 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.

1.7. Encourage development of a MA in the Coachella Valley. Signatories decided to support creation of the CVMSHCP in lieu of establishing an MA in the Coachella Valley. BLM-Palm Springs will continue to participate in the implementation 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 maintaining lizard barrier fencing along the Area Service Highway.

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 add signage to designated routes.

2.4.1. Reduce new roads to a minimum in MAs. BLM-El Centro: all designated routes within the MAs have been signed.

- 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 in January, 2003. 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 CBP to ensure cooperation and enforcement of vehicle regulations.** ICC members will continue to hold FTHL orientation sessions with CBP 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, BLM lands, and 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.** BLM-El Centro will continue restoration and rehabilitation efforts in 2012 utilizing SCA interns. Efforts will focus on the East Mesa MA.
- 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 State Parks, and BLM-El Centro. Ocotillo Wells District, through OHMVRD, will continue to acquire private in-holdings. Colorado Desert District will continue to acquire private in-holdings within ABDSP. The ICC will coordinate with the National Fish and Wildlife Foundation to ensure priority parcels are acquired to offset impacts from utility-scale renewable energy projects.
- 4.2. Seek funding to acquire key parcels in MAs.** Compensation funds will be banked for habitat acquisition. The ICC will coordinate with the National Fish and Wildlife Foundation to ensure funds acquired through utility-scale renewable energy project mitigation is used to acquire identified priority parcels.
- 4.3. Using compensation and other funds, acquire key lands in MAs.** Key lands in MAs will be acquired as opportunities arise. The ICC and MOG will coordinate with the national Fish and Wildlife Foundations 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.** The ICC will continue to work with state and federal agencies working on renewable energy conservation plans to ensure opportunities for establishing effective FTHL habitat corridors are not lost.

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.
The ICC will continue to work with Mexico biologists to develop a Mexico Rangeland Management Strategy.

6.2 Develop a conservation agreement. 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 2012.

6.3.2. Incorporate actions into the CVMSHCP. BLM-Palm Springs will continue to participate in the implementation of the CVMSHCP to ensure FTHL populations within the CVMSHCP plan area persist.

6.3.3. Incorporate actions into the Western Colorado Desert Route Designation.
See 2.4.2.

6.4. Coordinate with U.S. CBP to develop mutual agreements. CBP will continue to be invited to MOG meetings. ICC agencies will finalize the production of the CBP training and education video and distribute it to CBP offices for use in their training programs.

7. Promote the goals 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. El Centro is currently almost fully staffed.

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, via 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.

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 occupancy surveys and conduct monitoring for FTHL as part of the annual Habitat Monitoring Surveys. Depending on funding, planned monitoring (in house) is to complete 15 or more occupancy plots with 6 visits per plot as outlined in the current protocol.

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

8.3.1. Test trapping and other techniques used 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 this 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. The ICC may implement a relocation study to determine whether this measure within the RMS should be revised.

9. Continue Inventory and Monitoring.

9.1. Continue inventories. BLM-El Centro will continue to monitor lizard populations in the MAs using the methods prescribed by the ICC. 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 correlation approach as well as an experimental approach (small mammal enclosures 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 and/or MCAS, AGFD will conduct 2 demographic plots within the Yuma Desert MA. With funding from MCAS, MCAS and AGFD will resample the 75 occupancy plots that were established in the Yuma Desert MA in 2011. Sentinel plots are proposed in the West Mesa, and Yuha Desert MAs. OWSVRA will survey 50 occupancy plots 6 times each. Occupancy surveys are proposed for the Borrego Badlands MA and Yuha Desert MA. Occupancy surveys for the Borrego Badlands will be expanded in order to better comply with ICC recommendations. Certain plots will be put on rotation so that more visits can be achieved on the remaining plots, thus hoping to increase statistical reliability.

9.2. Monitor habitat quality and population trends in the MAs. 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 2013 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 for the Habitat Monitoring Surveys. BLM-El Centro will gather population data using occupancy plots. Colorado Desert District will continue occupancy plots in Borrego Badlands MA.

9.2.3. Document habitat disturbance and loss. All authorized habitat impacts will be reported in the 2012 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. The results from MCAS Yuma's disturbance study will be included in the 2012 ICC Annual report as well as the results from the ant study.

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 2012. The report will include a schedule of activities to be accomplished in 2013, budget needs for 2013, and projected budget needs for major projects in 2014 and 2015. The report shall also include a summary of monitoring results and a discussion of the likely causes of any noted declines in population.

9.2.5 New data shall be used in evaluations of the RMS and in assessing proposed changes. New information resulting from ongoing research and monitoring will be used to revise the RMS. MCAS-Yuma will continue their JSF study multi-year survey and monitoring of FTHL behavior, habitat use, and effects of increased road traffic and noise exposure through 2014. It will install traffic counters along County 14 to monitor volume of traffic prior to and after Auxiliary Landing Field construction pre-construction traffic volume data. It will build upon mark-recapture baseline FTHL abundance and demographic data. This will allow documentation in changes in FTHL abundance and demographics due to factors such as seasonal and annual variation, and to obtain long-term data on individual growth and survivorship. It will continue to place new plots in areas of interest, and will re-survey existing plots. It will refine and extend its measurements of distance-from-effect for paved roads, powerlines, and the ASH drift fence. This will permit more accurate estimates of impact severity and allow the study to identify which impacts are most important individually and under what circumstances. It will continue to examine FTHL movement patterns using radiotelemetry. This will provide insight into FTHL natural history, the better we will be able to assess how JSF construction will affect the FTHL population on BMGR. It will continue to refine methodology for radiotelemetry used to evaluate JSF impacts. It will continue to formally monitor FTHL road use and mortality by conducting road surveys. Supplementing these data with traffic volume data will provide insight into how roads are both directly and indirectly affecting FTHLs on the BMGR. Finally, it will also continue to monitor how other species of reptiles, as well as their predators, are using the roads and infrastructure.