

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

January 1, 2008- December 31, 2008

Prepared by the
Flat-tailed Horned Lizard Interagency Coordinating Committee
March 2009

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 Research Area, and other areas of flat-tailed horned lizard habitat.

Implementation activities during 2008 included regular coordination between the participating agencies through the Management Oversight Group and Interagency Coordinating 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. 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. New lands were acquired within the East Mesa and Borrego Badlands Management Areas. Continued attempts will be made to acquire additional lands in 2009 in the California Management Areas.

Biologists from the Alto Golfo Preserve in northern Sonora (Mexico) continue to be involved with the ICC. They have begun the process of creating a management strategy for FTHL in northern Mexico.

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. Only a few are behind schedule.

TABLE OF CONTENTS

Introduction

Implementation Progress in 2008

Planning Action 1 - Delineate and designate five FTHL MAs and one FTHL RA

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

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

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

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

Planning Action 6 - Coordinate activities and funding among the signatory agencies with Mexican agencies

Planning Action 7 - Promote the Strategy through law enforcement and education

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

Planning Action 9 - Continue inventory and monitoring

Conclusions

RMS Implementation Progress to Date

Appendix A: Report Abstracts

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

INTRODUCTION

On June 7, 1997, a Conservation Agreement, deemed a long-term agreement by its signatories, 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 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 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 that an annual report be prepared by the Interagency Coordinating Committee to monitor plan compliance (Planning Action 9.2.4). This is the tenth annual report and covers the period from January through December 2008.

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 2008

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 (MAs) 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. Pursuant to actions (listed below) taken 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 had 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 the RMS for its portion of the Yuma Desert MA. For Reclamation's portion of this MA, it completed a Five-Mile Zone Resource Management Plan in 2004 that incorporated the RMS.

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: 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) in accordance with provisions in the RMS.

Coachella Valley: BLM-Palm Springs continues to participate in the Coachella Valley Multi-Species Habitat Conservation and Natural Communities Conservation Plan (CVMSHCP) which

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. 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.

Construction of a pedestrian fence along the border of the entire Yuma Desert was completed in 2008. The fence 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 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.

The BLM completed an EA for the construction of a new communication tower in the Yuha totaling 1.4 acres of disturbance. The project has been appealed and has not officially granted the right-of-way (ROW). IID installed 9 power poles to supply power to the communication site without authorization. It submitted an ROW application after the work was completed. IID will be charged compensation according to the RMS. Stirling Energy was authorized to conduct geotechnical testing in its project site. Disturbance was approximately 100 acres; however, Stirling has completed restoration of the site and was not charged compensation. The US Border Patrol installed a fence along the border across most of the Imperial Valley including the Yuha MA. The project impacted 91.5 acres outside the Yuha MA and 222.5 acres south of the East Mesa MA. Compensation is proposed at a 1:1 ratio but will be included as part of a larger package of border fence mitigation.

A total of 2,199 acres was acquired at a cost of \$1,122,000.00 in the East Mesa using ADOT funds. All property owners in the West Mesa were sent a letter to identify willing sellers.

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

The El Centro Field Office continues to receive multiple solar energy applications in FTHL habitat. It has been successful in preventing applications located in its MAs. Most of the applications ask for 500-15,000 acres. Stirling Energy Systems submitted its Plan of

Development and Application for Certification with the California Energy Commission. After several rounds of reviews and data requests, Stirling's plan found data adequate late in the year. Stirling remains the furthest along in the process. The Stirling Site sits across I-8 from the Yuha MA and will require installation of a powerline through the Yuha MA to the Yuha Substation.

BLM - Palm Springs South Coast Field Office.

BLM-Palm Springs didn't authorize any impacts in FTHL habitat during 2008. It continued to enforce the Windy Point vehicle closure to protect FTHL, should they still be present in this area. The BLM also received OHV grant money in 2008 to fence off the Windy Point area. Fencing is anticipated to take place in 2009. BLM rangers continue to patrol the 1000 Palms Preserve, Willow Hole, and Edom Hill to keep out OHVs which may damage FTHL habitat.

BLM - Yuma Field Office.

BLM Yuma granted Yuma County two leases. The first lease is to build a library (lease No. AZA 03339101) on 4.375 acres of land. BLM Yuma collected a total of \$1,251.25 for that project's residual impacts to FTHL habitat. The second lease issued is to build county offices (lease No. AZA 03420601) on 5.625 acres. BLM Yuma collected a total of \$1,608.75 for that project's residual impacts to FTHL habitat. Compensation funds were deposited in the LLAZC020000 L71220000 JP0000 LVTF5701AZ00 account on June 03, 2008. 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, bringing the 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 2008. 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 2008.

NAF-El Centro.

NAF-El Centro authorized one project in 2008. Project caused disturbance at two ¼ acre sites for a total of 1/2 acre of project impacts. NAF-El Centro provided funds in the amount of \$22,797.00 to the BLM-EL Centro Office for surveying at the West Mesa (Target 101 area).

Anza-Borrego Desert State Park.

The illegal sand and gravel mining operation issue of 2006 persists to this day, The County of San Diego has been ineffective in dealing with the fact that the operation lacks a Major Use Permit. This illegal operation is using two miles of a public dirt road in the Park (and the MA) as a haul road and then those trucks are traversing paved roads in FTHL habitat that border either ABDSP or OWSVRA. No other impacts were encountered within FTHL habitat in 2008.

Table 1. Acres of flat-tailed horned lizard habitat authorized for impact by RMS signatories from January to December 2008, 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 | 225.5 | 225.5 | 93.9 | 0.09 |
| | West Mesa | 0 | 0 | 0 | 117.11 | 0.14 |
| | Yuha Desert | 1 | 91.5 | 92.5 | 88.7 | 0.15 |
| Yuma BLM | * | 0 | 10.00 | 10.00 | * | |
| NAF, El Centro | East Mesa | 0 | 0 | 0 | 1.0 | 0.01 |
| | West Mesa | 0 | 0 | 0 | 6.0 | 0.02 |
| MCAS, Yuma | Yuha Desert | 0 | 0 | 0 | 10.15 | 0.01 |
| Anza-Borrego Desert State Park | Borrego Badlands | 0 | 0 | 0 | 0 | 0.00 |
| Ocotillo Wells State Vehicular Recreation Area | * | 0 | 0 | 0 | * | |
| Reclamation | Yuma Desert | 0 | 0 | 0 | 15.80 | 0.10 |
| Total Acres | | 1 | 327.00 | 327.00 | 332.66 | 0.07 |

* No land administered within an MA.

Table 2. Ownership of lands within FTHL management areas by signatory agencies.

| Agency | MA | Acres as of 1997 | Acres acquired since 1997 | Total |
|---------------|------------------|------------------|-----------------------------|---------|
| BLM-El Centro | East Mesa | 99,900 | 2910 | 102,819 |
| | 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 projects that impacted FTHL habitat were authorized in 2008. Reclamation finalized an interagency agreement with BLM-El Centro. Agreement enables the transfer of the DROP 2 project's FTHL compensation funds totaling \$1,173,655.00 to the BLM-El Centro. Construction activities for the DROP 2 project began in 2008. Also, construction activities for the All American Canal lining (AAC) project continued in 2008.

Ocotillo Wells State Vehicular Recreation Area.

No new development projects resulted in loss of flat-tail habitat in 2008. No decision regarding the disposition of the geothermal site (approximately two acres) developed in 2007 has been made. Therefore, no restoration or compensation has been scheduled yet.

Total Habitat Disturbance from January through December 2008.

During this reporting period 327.33 acres were reported disturbed outside MAs and 1.4 acres was reported disturbed within the Yuha MA.

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 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, concurrent with restoration.

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.

OWSVRA is attempting to restore some mesquite dune habitat. A large number of mesquite bushes as well as several other plant species have been transplanted into previously fenced areas in hopes that they will survive and become vegetation around which sand will accumulate. In

addition, the OW Resources Department has added a Park Aide whose main duty will be monitoring, repairing, and upgrading fencing around restricted areas.

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

California State Parks acquired approximately 262 acres of private in-holdings for the Research Area (OWSVRA).

Most of the in-holdings within the Yuma Desert MA were purchased previously and all land remains federally owned. Remaining parcels are held by unwilling sellers

Anza-Borrego Desert State Park: Land acquisitions within FTHL habitat continue. A new initiative to acquire private in-holdings within Anza-Borrego Desert State Park is being coordinated by the Anza-Borrego Foundation and Institute. Approximately 543.5 acres of FTHL habitat within the Borrego Badlands FTHL MA were purchased and added to the Park during 2008.

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 are 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.

Reclamation's Boulder City Regional Office which is implementing the Multi-Species Conservation Program (MSCP), is in the process of acquiring 230 acres of FTHL habitat to meet Lower Colorado River MSCP mitigation requirements. Lands acquired by MSCP must be inhabited and will be transferred to an appropriate land management agency. During 2008, MSCP was looking at lands in California.

Seek funds for land acquisitions in MAs.

The compensation of \$1.17 million for Drop II Reservoir was paid to the BLM by Reclamation for the acquisition of FTHL habitat. BLM 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 Department of Customs and Border Protection completed construction of a pedestrian fence along the border of the entire Yuma Desert. Following ICC recommendations, this fence includes slots that were intended to allow passage by FTHL. However, because of drifting sand, these slots have become either buried or stranded high above the sand surface, making most of them inaccessible to FTHL. This, combined with the difficulty of crossing Mexico Highway 2, may mean there is no longer an effective corridor between the Arizona and Sonora populations. The ICC provided recommendations on how to maintain permeability for FTHL so that genetic exchange with Mexico populations could continue.

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 with Mexican agencies.

Management Oversight Group.

The MOG is comprised of managers from 12 offices of 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 date during 2008:

19 March (MOG/ICC; BLM-Yuma)

Major items discussed by the MOG during 2008 included the use of compensation funds that would result from the Area Service Highway near Yuma, various projects that could impact FTHL habitat, and land acquisitions.

Interagency Coordinating Committee.

The ICC is comprised of biologists from 13 offices of 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, lists concerns of the MAs and RAs regarding management issues, and details planned actions for the upcoming year. During 2008, the ICC met on the dates and at the locations that follow:

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

19 June (Yuma Crossing Park)

9 September (Yuma Crossing Park)

3 December (BLM-El Centro)

Major items that the ICC discussed in 2008 included the use of compensation funds (including the purchase of in-holdings 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, and completion of informational videos.

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 is the new highway between the community of Santa Clara (El Golfo) and Puerto Peñasco (Rocky Point), 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. The total distance of the new highway is 128 kilometers (about 80 miles) in length.

FTHL surveys were conducted along the area of the new road alignment in 2008. Data collected will be able to show impacts to FTHL resulting from associated use of the new road, and also could help in mitigating impacts (e.g. possible fence construction).

In 2007, a bi-national working group was formed to address FTHL conservation activities in Mexico which would include a conservation management strategy. The ICC formed a sub-team headed by Rob Lovich (Natural Resources Specialist with the Department of Navy) to facilitate coordination through the ICC and Mexico representatives. A funding agreement was initiated in 2008 that would transfer funding to Mexico which will help with the development of a conservation management strategy.

Brochures and other interpretive materials are still needed to inform visitors of the sensitivity of the area and of regulations designed to protect the environment, as well as the FTHL in Mexico. 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.

In addition, 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 finalized the INRMP (see Planning Action No. 1), which fully incorporates and implements the RMS.

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

Border Patrol.

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 2008, BP initiated construction of fencing in all flat-terrain and lowland areas for the entire California-Mexico border and areas along the Arizona-Mexico border. Several types of fencing (pedestrian and vehicular) were constructed. 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, BP is completing its 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 in relation 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).

In 2008, Border Patrol and the FWS have been working on developing a mitigation proposal to compensate for habitat loss from the new border fence.

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 (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 has been officially designated as a California Watchable Wildlife Site as of September 29, 2008. The nomination process specifically emphasized 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 update and distribute the WECO route of travel area map, which encompasses the Yuha Desert, and 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 it will be distributed to schools, OHV groups, conservation groups, and civic groups, and will be provided to the public by the signatory agencies.

Recreation is allowed 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.

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.

Research Permitting and Funding

AGFD issued 9 permits for collecting or handling FTHL during 2008. CDFG issued no new scientific collecting permits during 2008. The following studies were funded by signatory agencies or other sources during this reporting period:

In addition to funding the ongoing occupancy monitoring study, OWSVRA self-funded a demographic study that included two separate plots to examine more long-term population parameters. While the primary purpose was to continue to test and refine the 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.

With funding from AGFD, the University of Arizona completed a study to analyze microsatellite genetic variation in FTHL throughout its range. The abstract from the final report appears in Appendix A of this report.

Planning Action 9: Continue Inventory and Monitoring.

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

In 2008 the BLM-El Centro continued demographic surveys on the East Mesa, Yuha, and West Mesa MAs. The Navy El Centro and BLM established an MIPR, whereas the Navy provided funding for the BLM to conduct monitoring on Navy withdrawn lands. A new demographic plot was established east of the target. Nine hectare plots were surveyed for 10 consecutive days by SCA interns. All FTHL of 55mm snout-vent length were PIT tagged, the location GPSed, and a range of measurements noted. Occupancy plots were completed on 85 randomly selected 4-hectare plots in August. The data was sent to Tyler Grant for analysis of the data.

OWSVRA conducted both Demographic and Occupancy Plot surveys. The nine hectare Demographic Plots that were surveyed for nine consecutive days produced an insufficient number of captures to provide useful data. The first Demographic, or Sentinel, Plot resulted in two captures, only one of which was deemed large enough to implant a PIT tag. This plot had been established last year. None of the seven implanted FTHLs from 2007 (four on plot and three on the boundary sweep) were recaptured during the surveying of this plot. A second Demographic Plot was established this year. This plot was surveyed for only six days because the scanner ceased functioning. On the second Sentinel, while more successful with 13 FTHLs located, only four were adults and only three were tagged because the fourth was found after the scanner broke. Of the 10 possibilities for recapture, only one juvenile was recaptured, twice. Since the Occupancy Plots surveyed in 2006 and 2007 had been inappropriately selected in some cases, a thorough analysis of our total area and stratifications was conducted. As a result, 120 plots were established, 63 from the original set. Tyler Grant analyzed the data. All surveys were conducted by employees of OWSVRA and a helpful group of volunteers. 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. CDPR, through OWSVRA and ABDSP, awarded a contract to the San Diego Natural History Museum to conduct flat-tail research, primarily presence-absence surveys, on the Freeman Property, approximately 10,000 acres north of OWSVRA, adjacent to the RA, and east of ABDSP, although not adjacent to the Borrego Badlands MA. Status of FTHLs is not known in this area. The initial survey done in October did find four flat-tails.

With funding from Reclamation, AGFD completed surveys on two demographic plots within the Yuma Desert MA. One plot each was established in the Reclamation portion of the MA and the BMGR portion. Each was surveyed for 10 days in late summer. All adult FTHL were PIT tagged and their locations were recorded.

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. No FTHL surveys were completed at the Dos Palmas ACEC.

Table 3. Summary of flat-tailed horned lizard Management Area monitoring estimates with 95 percent confidence intervals. Estimates are of the total population in the Management Area or the probability of occupancy of lizards or scat 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. Analyses for 2008 have not been completed.

| MA | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|------------------|-----------------------------|--|-----------------------------|------------------------------|-------------------------------|---------------------|------|
| East Mesa | - | 42,619 (19,704 – 67,639) | - | - | 0.50 (lizards) (0.3 – 0.7) | - | - |
| West Mesa | - | 10,849 (3,213 – 23,486) | - | 0.42 (scat) (0.27 – 0.58) | - | - | - |
| Yuha Basin | 25,514 (12,761 – 38,970) | - | 73,017 (4,837 – 163,635) | - | - | - | TBD |
| Yuma Desert | - | 16,328 (TW) (8,378 – 31,794) 25,855 (16,390 – 43,951) | - | - | - | - | - |
| Borrego Badlands | - | - | - | - | - | - | - |
| OWSVRA | - | 19,222 (18,870 – 26,752) | - | 24,345 (14,329 – 69,922) | 1.0 (No C.I.) | 1.0 (0.56 – 1.0) | TBD |

Table 4. Demographic plot density estimates with 95 % confidence intervals calculated following Royle and Young (2008). Analyses for 2008 have not been completed.

| Plot | BMG (=YM1) | BOR (=YM2) | 315 (=EM1) | 486 (=YU1) | 156 (=WM1) | WM2 | Squaw Peak | Mudhills |
|------|-------------|-------------|-----------------------|-----------------------|-----------------------|-----------|------------|----------|
| MA | Yuma Desert | Yuma Desert | East Mesa | Yuha Basin | West Mesa | West Mesa | OWSVRA | OWSVRA |
| 2007 | - | - | 2.55 (1.89 - 3.44) | 2.40 (1.67 - 3.22) | 1.12 (0.78 - 1.56) | - | - | - |
| 2008 | TBD | TBD | TBD | TBD | TBD | TBD | TBD* | TBD* |

*Sample sizes are too small for statistical analysis.

Analysis of 2008 monitoring data has yet to be accomplished because of limitations in staff time. In the meantime, a summary of captures is given in Table 5 and 6.

Table 5. Summary of flat-tailed horned lizard captures on demographic plots in 2008. Juveniles < 60mm SVL.

| Plot | Location Description | MA | Adults Captured | Juveniles Captured |
|------------|------------------------|------------|-----------------|--------------------|
| BMG (=YM1) | On BMG range | Yuma | 33 | 45 |
| BOR (=YM2) | BOR land | Yuma | 16 | 16 |
| 315 (=EM1) | East of geothermals | East Mesa | 17 | 0 |
| 486 (=YU1) | Pinto Wash | Yuha Basin | 18 | 1 |
| 156 (=WM1) | SW of Superstition Mtn | West Mesa | 5 | 3 |
| WM2 | On Navy target | West Mesa | 36 | 5 |
| Squaw Peak | Near Squaw Peak | OWSVRA | 1 | 1 |
| Mudhills | Mudhill area | OWSVRA | 3 | 7 |

Table 6. Number of plots surveyed and proportion that were found to be occupied.

| Management Area | Number of Plots | Naïve Occupancy Estimate |
|------------------------|------------------------|---------------------------------|
| Ocotillo Wells | 120 | 40% |
| Yuha Basin | 85 | TBD |

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 has been done at least once on all the MAs and the RA except for the Borrego Badlands. This monitoring has successfully generated broad population estimates. The confidence intervals were very wide in a few cases; and, because it is believed that 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 are a smaller number of plots where more in-depth information is collected to further understanding of the population dynamics of the species. ICC participants are using 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, critical elements in 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, with expansion in the summer of 2008, 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 2008.

| | Date | Yuma Area LLAZC020000 L71220000 JP0000 LVTF5701AZ00 | 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) |
|---------------------------------------|-----------|---|--|---|---|---|---|
| 2007 carryover | 1 Jan 07 | \$ 0 | \$248,975.81 | \$1,106,500.00 | \$2,912,000.00 | \$131,425.78 | \$65,715.23. |
| Additions | | | | | | | |
| San Luis ROW | 3 June 08 | \$2,860.00 | | | | | |
| Reclamation Drop 2 Deposit | | | | | | | \$1,173.655.00 |
| Truckhaven Geothermal Developer | | | | | | | |
| Subtractions | | | | | | | |
| DOI Minerals | | | | | \$1,122,000.00 | | |
| DOI Minerals | | | | | | | |
| TOTALS | | \$2,860.00 | \$248,975.81 | \$1,106,500.00 | \$1,790,000.00 | \$131,425.78 | \$1,239,370.23 |

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 for 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 in its habitat areas, 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 | 26 | Authorize limited use of flora in MAS | ∞ | ALL | 5 | 1 | 1 | 1 | 1 | 1 | |
| ⇒ | 1 | 27 | Allow military maneuvers and encampments only in designated sites in MAS | ∞ | USN USMC | 5 | 1 | 1 | 1 | 1 | 1 | |
| ⇒ | 3 | 28 | Suppress fires in MAS using limited fire suppression methods in MAS | ∞ | ALL | 5 | 1 | 1 | 1 | 1 | 1 | |
| ⇒ | 1 | 29 | 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 | | | | | | | | | |
| <input checked="" type="checkbox"/> | 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 | | | | | | | | | |
| <input checked="" type="checkbox"/> | 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 | |
| <input checked="" type="checkbox"/> | 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 RECLAMATIO N USMC | 6 | 2 | 2 | 2 | 0 | 0 |
| ⇒ | 2 | 6.4.1 | Encourage use of techniques to minimize BPOHV activity | ∞ | BLM RECLAMATIO N 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 define and implement necessary management actions effectively | | | | | | | | |
| ⇒ | 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, RECLAMATIO N 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, RECLAMATION OWSVRA ABDSP | 400 180 135 150 | 100 60 45 50 | 50 45 50 | 100 60 45 50 | 50 45 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 2008. The BLM-El Centro continued monitoring at the East Mesa, West Mesa, and Yuha MAs. A fourth plot was added on Navy lands, the bombing range north of Superstition Mountain. Nine hectare demographic plots were established and surveyed for 10 consecutive days using 6 monitors on all plots. Lizards over 55mm snout-to-vent length were fitted with a PIT tag and temporarily marked with a sharpie. The capture locations were GPSed and routes walked recorded. Individual lizards were generally recaptured near the original capture site. One hundred seventy-one FTHL were captures were made on the demographic plots, including one individual who was caught on 8 out of 10 survey days. In addition to the demographic plots, 85 occupancy plots were surveyed in the Yuha MA.

Demographic Plots

Table 1. Number of flat-tailed horned lizards captured on demographic plots in 2008. Juveniles < 60mm SVL.

| Plot | Location Description | MA | Adults Captured | Juveniles Captured |
|-------------|-----------------------------|------------|------------------------|---------------------------|
| BMG (=YM1) | On BMG range | Yuma | 33 | 45 |
| BOR (=YM2) | BOR land | Yuma | 16 | 16 |
| 315 (=EM1) | East of geothermals | East Mesa | 17 | 0 |
| 486 (=YU1) | Pinto Wash | Yuha Basin | 18 | 1 |
| 156 (=WM1) | SW of Superstition Mtn | West Mesa | 5 | 3 |
| WM2 | On Navy target | West Mesa | 36 | 5 |
| Squaw Peak | Near Squaw Peak | OWSVRA | 1 | 1 |
| Mudhills | Mudhill Area | OWSVRA | 3 | 7 |

Occupancy Surveys

Table 2. Number of plots surveyed and proportion that were found to be occupied.

| Management Area | Number of Plots | Naïve Occupancy Estimate |
|------------------------|------------------------|---------------------------------|
| Ocotillo Wells | 120 | 40% |
| Yuha Basin | 85 | ? |

Hollenbeck, Eric and Joe Hopkins. 2008. Ocotillo Wells District 2008 flat-tailed horned lizard (*Phrynosoma mcallii*) occupancy survey and initial demographic survey report (draft). In 2008, 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. 120 stratified-random and nested four-hectare plots were searched for presence of FTHL. 48 plots (40%) were positive for FTHL. Analysis in the program MARK for occupancy is still being done, but it will probably indicate 100% occupancy. Two Demographic (Sentinel) Plots were 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. On the first Sentinel Plot, established in 2007, only two FTHLs were detected and only one was implanted with a PIT tag. None of the seven FTHLs implanted in 2007 (four on the plot and three on the boundary sweep) were recaptured. A second Sentinel Plot established this year did produce 13 FTHLs, but only four were adults, three of which were implanted with PIT tags.

Hollenbeck, Eric and Joe Hopkins. 2008. Ocotillo Wells District 2008 flat-tailed horned lizard (*P. mcallii*) capture rate in pitfall arrays. In 2008, Ocotillo Wells State Vehicular Recreation Area, while completing its biannual reptile monitoring, captured an extraordinary number of flat-tailed horned lizards. Prior to Fall, 2007, OWSVRA's reptile monitoring system was a combination of walking (time-constraint) surveys and pitfall arrays run for one week (4 trapping days). The pitfall arrays consisted of four five-gallon buckets buried with a center bucket and three buckets 20 feet away separated by 120 degree angles and drift net fencing running between the center and spoke buckets. In the Fall season, 2007, most of the walking surveys were replaced with pitfall arrays, and all the pitfall arrays were worked for three weeks (12 trapping days). In Spring, 2008, the remainder of the walking surveys were converted to pitfalls, worked for the longer time period. Total spring captures of flat-tailed horned lizards from 2000 through 2007 amounted to 21 individuals. Total fall captures, 2000 through 2007 with 2007 having more pitfall arrays run for the longer time period, were 23. In Spring, 2008, there were 21 FTHLs captured, equal to the eight previous springs. In Fall, 2008, 35 FTHLs were captured, a 52% increase over the total captures of the previous eight falls. The total of 56 individuals is 81% of the total 69 FTHLs found by the crews doing the Occupancy Plots with those Occupancy Plot Surveys being conducted from May 27 through September 12, visiting 120 plots a total of 197 times and executing 640 individual surveys.

Culver, M. and T. Dee. 2008. Microsatellite Genetic Variation in Flat-tailed Horned Lizards (*Phrynosoma mcallii*) in Arizona, California and Mexico. Arizona Game and Fish Department, final report for Heritage Fund Project number I05004. 14 p. 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 population(s) of *Phrynosoma mcallii*, and between the Arizona population(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.

Delta Del Río Colorado, in Sonora, Mexico, in 2008.

During June, 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 areas nearest to El Golfo de Santa Clara town, and in vegetation along the transect which was also sampled. Six FTHLs were found in seven days of survey.

Appendix B: 2009 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 providing and maintaining 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 MAs. 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 in-holdings. ABDSP will continue to acquire private in-holdings 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.**
 - 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 2009.
 - 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 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.

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. 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): Repeat the survey of all 120 Occupancy Plots. In lieu of the scientifically disappointing Demographic Plots, do a detailed habitat analysis of the positive plots from the Occupancy survey including substrate, vegetation, and OHV use. Explore alternate detection methods such as evening surveys and pitfall arrays. Explore the establishment of Occupancy Plots on a potential new acquisition to the north of OW and east of ABDSP. Explore training methods that might help in FTHL detection.

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 will review the results of the relocation study to determine whether the RMS should be revised or whether additional information is needed on this issue.

9. Continue Inventory and Monitoring.

9.1. Continue inventories. BLM-Yuma will determine the presence/absence of FTHL within some BLM-managed land. 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 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 Occupancy Plots and will investigate establishing new Occupancy Plots on the new acquisition property jointly managed by OWSVRA and ABDSP. ABDSP proposes to conduct occupancy surveys during 2009 in the Borrego Badlands MA. Occupancy surveys are also proposed for the Yuha Desert MA. Occupancy plot surveys at OWSVRA will be continued and possibly expanded in number.

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 2009 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 2009 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 2009. The report will include a schedule of activities to be accomplished in 2010, budget needs for 2010, and projected budget needs for major projects in 2011 and 2012. 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 will be used to revise the RMS.