

hearing is held, and during the public comment period. Issues raised by those comments may be the basis for a decision to deny approval to the State. EPA will give notice of its final decision in the **Federal Register**; the notice will include a summary of the reasons for the final determination and a response to all significant comments.

Statutory and Executive Order Reviews

This proposed rule will only approve State underground storage tank requirements pursuant to RCRA section 9004 and imposes no requirements other than those imposed by State law (see **SUPPLEMENTARY INFORMATION**, section A. Background). Therefore, this proposed rule complies with applicable executive orders and statutory provisions as follows:

1. *Executive Order 12866: Regulatory Planning Review*—The Office of Management and Budget has exempted this proposed rule from its review under Executive Order 12866. 2. *Paperwork Reduction Act*—This proposed rule will not impose an information collection burden under the Paperwork Reduction Act. 3. *Regulatory Flexibility Act*—After considering the economic impacts of today's proposed rule on small entities under the Regulatory Flexibility Act, I certify that this proposed rule will not have a significant economic impact on a substantial number of small entities. 4. *Unfunded Mandates Reform Act*—Because this proposed rule approves pre-existing requirements under state law and does not impose any additional enforceable duty beyond that required by state law, it does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act. 5. *Executive Order 13132: Federalism*—Executive Order 13132 does not apply to this proposed rule because it will not have federalism implications (*i.e.*, substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government). 6. *Executive Order 13175: Consultation and Coordination with Indian Tribal Governments*—Executive Order 13175 does not apply to this proposed rule because it will not have tribal implications (*i.e.*, substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes). 7. *Executive Order 13045: Protection of Children from Environmental Health &*

Safety Risks—This proposed rule is not subject to Executive Order 13045 because it is not economically significant and it is not based on health or safety risks. 8. *Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use*—This proposed rule is not subject to Executive Order 13211 because it is not a significant regulatory action as defined in Executive Order 12866. 9. *National Technology Transfer Advancement Act*—EPA approves State programs as long as they meet criteria required by RCRA, so it would be inconsistent with applicable law for EPA, in its review of a State program, to require the use of any particular voluntary consensus standard in place of another standard that meets the requirements of RCRA. Thus, section 12(d) of the National Technology Transfer and Advance Act does not apply to this proposed rule.

List of Subjects in 40 CFR Part 281

Environmental protection, Administrative practice and procedures, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

Authority: This document is issued under the authority of section 9004 of the Resource Conservation and Recovery Act as amended 42 U.S.C. 6991c.

Dated: December 20, 2002.

Donald S. Welsh,

Regional Administrator, Region III.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AI51

Endangered and Threatened Wildlife and Plants; Withdrawal of the Proposed Rule To List the Flat-tailed Horned Lizard as Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; withdrawal.

SUMMARY: We, the Fish and Wildlife Service (Service), have determined that the action of listing the flat-tailed horned lizard (*Phrynosoma mcallii*) as threatened, pursuant to the Endangered Species Act (Act) of 1973, as amended, is not warranted, and we consequently withdraw our proposed rule. We have made this determination because threats to the species as identified in the proposed rule are not as significant as

earlier believed, and current available data do not indicate that the threats to the species and its habitat, as analyzed under the five listing factors described in section 4(a)(1) of the Act, are likely to endanger the species in the foreseeable future throughout all or a significant portion of its range.

ADDRESSES: Supporting documentation for this rulemaking is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office, 6010 Hidden Valley Road, Carlsbad, CA 92009.

FOR FURTHER INFORMATION CONTACT: Jim Bartel, Field Supervisor, at the above address (telephone, 760-431-9440, or fax, 760-431-9618).

SUPPLEMENTARY INFORMATION:

Background

The flat-tailed horned lizard (*Phrynosoma mcallii*) is a small phrynosomatid lizard that reaches a maximum adult body length of 8.4 centimeters (cm) (3.3 inches [in]) (Muth and Fisher 1992). The flat-tailed horned lizard has a dorso-ventrally flattened body; long, broad flattened tail; and dagger-like head spines common to horned lizards. The species is cryptic in color, ranging from pale gray to light rust brown dorsally, and white or cream ventrally. It can be distinguished from the only other horned lizard known to occur within its range, the desert horned lizard (*Phrynosoma platyrhinos*), by its dark vertebral stripe, two rows of fringed scales on each side of the body, lack of external ear openings, and unmarked white ventral surface in most individuals (Foreman 1997). Apparent hybrids between the two species, exhibiting a mix of morphological characteristics, have been observed in the vicinity of Ocotillo, California (Stebbins 1985), and southeast of Yuma, Arizona (K. Young, Utah State University, pers. comm. 2002).

The flat-tailed horned lizard is endemic (restricted) to the Sonoran Desert in southern California, southwestern Arizona, and adjoining portions of Sonora and Baja California, Mexico (Turner and Medica 1982). Within California, the flat-tailed horned lizard ranges from the Coachella Valley, the northernmost extent of its range, south along both sides of the Salton Sea and Imperial Valley. On the west side of the Salton Sea and Imperial Valley, the species ranges into the Borrego Valley, Ocotillo Wells area, West Mesa, and the Yuha Desert (Yuha Basin). On the east side of Imperial Valley, the species occurs in the vicinity of the Dos Palmas Bureau of Land Management (BLM)

Area of Critical Environmental Concern (ACEC), but predominantly occurs in East Mesa and in areas adjoining the Algodones Dunes (*i.e.*, Imperial Sand Dunes, Glamis Sand Dunes). In Arizona, the flat-tailed horned lizard is found in the Yuma Desert south of the Gila River and west of the Gila and Butler Mountains (Rorabaugh *et al.* 1987). The flat-tailed horned lizard is patchily distributed throughout its range, and has been recorded at elevations as high as 520 meters (m) (1,706 feet [ft]) above sea level, but is more commonly found below 250 m (820 ft) in areas with flat-to-modest slopes (Turner *et al.* 1980).

The range of the flat-tailed horned lizard extends into Mexico from the international border in the Yuha Desert in California, south to Laguna Salada in Baja California, and from the international border in the Yuma Desert in Arizona, south and east through the Pinacate Region to the sandy plains around Puerto Penasco and Bahia de San Jorge, Sonora (Johnson and Spicer 1985, Gonzales-Romero and Alvarez-Cardenas 1989).

The distribution of the flat-tailed horned lizard is not contiguous across its range, because of fragmentation by large-scale agricultural and urban development, primarily in the Imperial Valley and the Coachella Valley. In addition, the Salton Sea, Colorado River, East Highline Canal, New Coachella Canal, and All American Canal are barriers to movement of flat-tailed horned lizards.

Due to this habitat fragmentation and existing geographic barriers, the distribution of flat-tailed horned lizards appears to be currently divided on a broad scale into at least four geographically discrete populations: three in California and one in Arizona. The three populations in California are located in the Coachella Valley, the west side of the Salton Sea/Imperial Valley, and the east side of the Imperial Valley.

The Coachella Valley population of flat-tailed horned lizards was likely much more extensive and connected to other populations in California in the past. Now it is isolated by extensive agricultural development in the southern half of the Coachella Valley and by the Salton Sea. The other two populations of flat-tailed horned lizards, on the west side of the Salton Sea/Imperial Valley and the east side of the Imperial Valley, are isolated from the Coachella Valley population and each other by agricultural and urban development of the Imperial Valley and by the Salton Sea. The Arizona population is isolated from populations in California by agricultural and urban

development around Yuma, and ultimately by the Colorado River.

Hodges (1997) estimated that the flat-tailed horned lizard historically (prior to agricultural or urban development of either the Coachella or Imperial Valleys) occupied up to 979,037 hectares (ha) (2,419,200 acres [ac]) in Arizona and California. Approximately 51 percent (503,173 ha [1,243,340 ac]) of this historical habitat remains in the United States, with about 56,770 ha (140,300 ac) in Arizona and 446,390 ha (1,103,040 ac) in California (Hodges 1997). The Salton Sea area could arguably be considered ephemeral historical habitat, present at some points and absent at others, as the area changed through time. Hodges (1977) included the Salton Sea as historical habitat. If the area the Salton Sea currently occupies is not considered historical habitat, then approximately 57 percent (557,072 ha [1,376,525 ac]) of historical habitat remains in the United States.

Johnson and Spicer (1985) estimated that in 1981 approximately 59 percent of the species range occurred in Mexico, with the majority of the range in Mexico occurring in the state of Sonora. However, the distribution of the species in Mexico is poorly understood because few surveys have been conducted to determine where the species occurs in Mexico (CEDO 2001). In Sonora, about 14 percent of the habitat was estimated to be threatened by urban, agricultural or recreational use, and habitat degradation in 1981 (Johnson and Spicer 1985). In Baja California Norte, considerable habitat loss has occurred in the Mexicali Valley, where urban and agricultural development extends from Mexicali to the Colorado River (Johnson and Spicer 1985, Foreman 1997).

The majority (about 60 percent) of the species' range in Mexico lies within two federally protected areas: (1) The Upper Gulf of California and Colorado Delta Biosphere Reserve, and (2) the Pinacate and Gran Desierto de Altar Biosphere Reserve (CEDO 2001). The National Park of Pinacate is an area administered by the Mexican government with use restrictions similar to those in a national park in the United States. The Pinacate area is primarily a volcanic zone within which flat-tailed horned lizard habitat is probably limited to the sandy perimeters of Volcan Pinacate. The Upper Gulf of California Biosphere Reserve includes flat-tailed horned lizard habitat in the vicinity of the Colorado River Delta in Sonora, Mexico.

The flat-tailed horned lizard is most commonly found in sandy flats and valleys in a creosote (*Larrea tridentata*)—white bursage (*Ambrosia dumosa*) plant association (Turner *et al.*

1980; Muth and Fisher 1992; Foreman 1997). Turner *et al.* (1980) stated the best habitats are generally low-relief areas with surface soils of fine packed sand or pavement, overlain with loose, fine sand. Flat-tailed horned lizards are also known to occur at the edges of vegetated sand dunes, on barren clay soils, and sparse saltbush communities, but Turner *et al.* (1980) suspected that these recorded occurrences were actually individuals that had dispersed from more suitable habitats. Within a creosote plant community in West Mesa, California, Muth and Fisher (1992) found that flat-tailed horned lizards preferred sandy substrates with white bursage and Emory dalea (*Psoralea emoryi*), and avoided creosote and *Tequila plicata*. In Arizona, Rorabaugh *et al.* (1987) found flat-tailed horned lizard abundance correlated with big galleta grass (*Hilaria rigida*) and sandy substrates, but suggested that the presence of sandy substrates were more important than that of big galleta grass.

Several researchers have investigated the relationship between density of perennial plants and flat-tailed horned lizard abundance. The relationships observed varied among studies (Altman *et al.* 1980, Turner and Medica 1982, Beauchamp *et al.* 1998). Altman *et al.* (1980) and Turner and Medica (1982) found the relative abundance of horned lizards was significantly and positively correlated with perennial plant density in creosote-white bursage plant communities. However, Beauchamp *et al.* (1998) found flat-tailed horned lizards to be present in higher relative densities in sparsely vegetated areas with large patches of concretions, gravel, and silt, than they were in sandy or densely vegetated areas. Altman *et al.* (1980) also reported finding flat-tailed horned lizards in desert pavement areas. Foley (2002) found little correlation in substrate texture and distribution of flat-tailed horned lizards when using three experimental treatments consisting of sandy, rocky and mixed substrates. However, Grant and Wright (2002) found flat-tailed horned lizard abundance was positively correlated with percentage of sand cover.

Information concerning population dynamics of flat-tailed horned lizard populations is limited and inconclusive. Since 1979, population trends were monitored using a combination of scat counts and lizards observed along transects (Wright 2002). Different methods of transect selection, numbers and experience of observers, numbers of repetitions, and lengths and shapes of transects have been used from year to year (Wright 2002).

The relationship between scat counts and lizard abundance is unclear, or weak at best (Wright 2002). Wright (2002) states that while differences in scat abundance could indicate differences in lizard abundance, the observed decline in the rate at which scat is found could also be a result of an increase in Off-Highway Vehicle (OHV) activity resulting in crushed or buried scat, lower deposition rates, greater wind eradication, different observers, or additional factors. Furthermore, the use of scat counts does not account for variations in lizard activity, misidentification of scat from other species, scat production due to fluctuating food resources, weather conditions that affect scat production or longevity in the field, observer differences, and small sample sizes (Muth and Fisher 1992, Rorabaugh 1994). Consequently, scat abundance may not be positively correlated with lizard abundance under varying conditions (Rorabaugh 1994, Beauchamp *et al.* 1998). In addition, the use of a relative index, such as scat counts, to indicate population trends is not reliable due to uncorrected bias that exists (discussed further below). Relative index techniques assume that any changes or differences in survey results are proportional to true changes or differences in the populations of interest (Thompson *et al.* 1998). Thus, due to the significant limitations of scat count data, we consider the use of scat count information useful primarily in determining the distribution and presence of flat-tailed horned lizards.

Two measures of abundance trends (*i.e.*, lizards detected per 10 hours, and lizards per transect) used between 1979 and 2001 for the East Mesa, West Mesa, and Yuha Basin, did not include scat data (Wright 2002). No statistically significant trends were found in the rate at which lizards were detected or the number of lizards per transect on any of the areas from 1979 to 2001 (Wright 2002). The measure of lizards per transect has inherent error due to differences in transect lengths surveyed among years. More importantly, the methodologies used between 1979 and 2001 have varied and the data have not incorporated detection probabilities (see Thompson *et al.* 1998). Because flat-tailed horned lizards are very difficult to find in the field due to their cryptic coloration and behavioral characteristics, incorporating the probability of detecting them into survey results is very important.

Detectability is a common source of bias that is ignored for relative index techniques, such as the techniques used to collect the data between 1979 and

2001. Numerous factors may affect the detectability of animals within selected sampling plots. These include physical structure and cover, weather, individual behavior, and survey methodology. However, it is possible that differences in relative abundance found using uncorrected data may result from only a difference in detectability of animals between areas or within the same area across time (Thompson *et al.* 1998). Uncorrected bias could seriously affect the validity and usefulness of data in indicating abundance trends (Thompson *et al.* 1998).

The BLM recently estimated the population size on the Yuha Basin Management Area (MA) (one of five management areas identified in a management strategy for the species) by using capture-mark-recapture (CMR) techniques incorporating detection probabilities (see Thompson *et al.* 1998, Williams *et al.* 2002). In the summer (June to August) of 2002, the population of flat-tailed horned lizards for the Yuha Basin MA (24,122 ha [59,605 ac]) was estimated at 18,494 adults (95 percent CI = 14,596 to 22,391) (Grant and Wright 2002) and 8,685 juveniles (95 percent CI = 6,860 to 10,510) (derived from Grant and Wright 2002). "Adults" included all lizards greater than 60 millimeters (mm) (Young and Young 2000), while "juveniles" included all lizards 60 mm or less in snout-to-vent length. Population estimates for the other four MAs using a CMR methodology will be conducted soon, for the first time (Gavin Wright, BLM biologist, pers. comm. 2002).

Greater than 95 percent of the diet of flat-tailed horned lizards consists of ants of the genera *Messor*, *Pogonomyrmex*, *Conomyrma*, and *Myrmecocystus* (Turner and Medica 1982, Pianka and Parker 1975). Flat-tailed horned lizards are oviparous (egg-laying), early maturing, and may produce multiple clutches within a breeding season (Howard 1974). Flat-tailed horned lizards produce relatively small egg clutches (N = 31; mean clutch size = 4.7; range = 3 to 7; Howard 1974), compared to most other horned lizards (Pianka and Parker 1975). The first cohort hatches in July to August (Muth and Fisher 1992; Young and Young 2000), and in some years a second cohort may be produced (Howard 1974, Young and Young 2000). Hatchlings from the first cohort may reach sexual maturity after their first winter season, whereas hatchlings born later may require an additional growing season to mature (Howard 1974, Young and Young 2000). Flat-tailed horned lizards can live up to at least 6 years in the wild (FTHL-ICC

2002), and up to 9 years in captivity (Baur 1986).

Flat-tailed horned lizards can have relatively large home ranges (Foreman 1997). Muth and Fisher (1992) found the mean home range for lizards (N = 22) was 2.7 ha (6.7 ac) from a minimum of 19 locations in West Mesa. In the Yuma Desert of Arizona, Young and Young (2000) found mean home ranges for males differed between drought and wet years, while those of females did not. The mean home range for males was 2.5 ha (6.2 ac) during a dry year versus 10.3 ha (25.5 ac) during a wet year. Female mean home ranges were smaller at 1.3 ha (3.2 ac) and 1.9 ha (4.7 ac) in dry and wet years, respectively (Young and Young 2000). Young and Young (2000) noted a wide variation in movement patterns, with a few home ranges estimated at greater than 34.4 ha (85 ac).

Flat-tailed horned lizards generally lie close to the ground and remain motionless when approached (Wone 1995); however, but on occasion they may bury themselves in loose sand if it is available (Norris 1949). More rarely they may flee. Their propensity to remain motionless and bury themselves in the sand, along with their cryptic coloration and flattened body, make them very difficult to find in the field (Foreman 1997). During the summer, a flat-tailed horned lizard may escape extreme surface temperatures either by burying the main part of its body below the surface layer (Norris 1949) or by retreating to a burrow (Rorabaugh 1994, Young and Young 2000).

Adult flat-tailed horned lizards are reported to be obligatory hibernators (Mayhew 1965), although individuals have been noted on the surface during January and February (Eric Hollenbeck, Ocotillo Wells SVRA biologist, pers. comm. 2002). Hibernation may begin as early as October and end as late as March (Muth and Fisher 1992). Hibernation burrows appear to be self-constructed (constructed by the lizards themselves versus using burrows constructed by other animals) and are within 10 cm (3.9 in) of the surface (Muth and Fisher 1992). Mayhew (1965) found that the majority of lizards hibernated within 5 cm (2.0 in) of the surface. The greatest depth recorded was 20 cm (7.9 in) below the surface. While most adults apparently hibernate during winter months, some juveniles may remain active (Muth and Fisher 1992).

In June of 1997, seven Federal and State agencies signed a Flat-Tailed Horned Lizard Conservation Agreement (CA) to implement a Flat-tailed Horned Lizard Rangeland Management Strategy (Management Strategy). The purpose of

the Management Strategy is to provide a framework for conserving sufficient habitat to maintain several viable populations of the flat-tailed horned lizard throughout the range of the species in the United States. The Management Strategy was developed by an interagency working group over a two-year period. As part of the CA, agencies delineated specific areas under their jurisdiction as Management Areas (MAs). Approximately 181,100 ha (447,600 ac) of the remaining flat-tailed horned lizard habitat managed by signatories of the CA exists within five MAs, which occur in the Borrego Badlands, West Mesa, Yuha Desert, East Mesa, and the Yuma Desert. These managed areas are believed to represent approximately 35 percent of flat-tailed horned lizard habitat remaining in the United States.

The five MAs were designed to identify large areas of public land where flat-tailed horned lizards have been found, as well as to include most flat-tailed horned lizard habitat identified as key areas in previous studies (Turner *et al.* 1980, Turner and Medica 1982, Rorabaugh *et al.* 1987, Foreman 1997). MAs were proposed based on accepted principles of good preserve design, utilizing the best information available at the time (FTHL-ICC 2002). Furthermore, the MAs were delineated to include areas as large as possible, while avoiding extensive, existing and predicted management conflicts (*e.g.*, OHV open areas). The MAs are meant to be the core areas for maintaining self-sustaining populations of flat-tailed horned lizards in the U.S. (FTHL-ICC 2002).

The flat-tailed horned lizard commonly occurs in additional areas outside of the MAs. These areas include the Ocotillo Wells State Vehicle Recreation Area (Ocotillo Wells SVRA), Coachella Valley, the areas adjoining the Algodones Dunes, and east of the Algodones Dunes between Ogilby and the Mexican border (Norris 1949, Turner *et al.* 1980, Turner and Medica 1982). The Ocotillo Wells SVRA is currently a Research Area under the Management Strategy, and studies on the flat-tailed horned lizard have been encouraged and funded by the California Department of Parks and Recreation (CDPR) Division of Off-Highway Motor Vehicle Recreation (Foreman 1997).

The majority of the potential flat-tailed horned lizard habitat is within and adjacent to the Algodones Dunes is within the Imperial Sand Dunes Recreation Area. Over 47,754 ha (118,000 ac) of the Imperial Sand Dunes Recreation Area is used as an OHV open area. The majority of the Algodones

Dunes north of Highway 78 is a designated wilderness area.

The Coachella Valley has been developed to a much larger extent than any other geographic area within the flat-tailed horned lizard's current range, and does not have nearly as much Federal land as the other areas in which the MAs were established. There are only about 16,610 ha (41,040 ac) of flat-tailed horned lizard habitat remaining, representing 19 percent of the approximately 86,820 ha (214,540 ac) of historical habitat in the Coachella Valley (Katie Barrows, pers. comm. 2002), about 3 percent of the current habitat rangewide in the U.S., and roughly 1 percent of the species range overall, including Mexico (we derive these figures using Hodges' 1997 figure for current habitat within the U.S., and Johnson and Spicer's [1985] estimate of overall range). Of the remaining habitat in the Coachella Valley, only about 2,150 ha (5,314 ac) of suitable flat-tailed horned lizard habitat is estimated to be protected as part of the Coachella Valley Fringe-Toed Lizard Preserve System (Coachella Valley Mountains Conservancy 2001).

Approximately 75 percent of the flat-tailed horned lizard habitat in the Coachella Valley is either private or Tribal land and subject to development in the near future. An area with the largest amount of remaining habitat outside the fringe-toed lizard preserve system is the Big Dune area between Palm Springs and Indian Wells, south of I-10. However, this area is fragmented with major roads and new development (*e.g.*, residential housing, shopping centers, Agua Caliente Casino, and California State University of San Bernardino Extension) and is increasingly subject to new development because of its central location within the Coachella Valley.

Signatories of the CA, which include the Service, Bureau of Reclamation (BOR), BLM, U.S. Marine Corps, U.S. Navy, Arizona Game and Fish Department (AGFD), California Department of Fish and Game (CDFG), and CDPR, committed to implementation of conservation measures for the species over the life of the CA. These measures included: (1) Continued monitoring of lizard populations and new surface disturbance within MAs; (2) limitation of new surface-disturbing projects within MAs to 1 percent of the area of MAs between 1997-2002; (3) collection of compensation fees from project proponents who conduct activities within and outside of MAs; (4) reduction in off-highway vehicle (OHV = all vehicles used off-road, including

automobiles, dune buggies, motorcycles, all-terrain-cycles, four-wheelers, etc.) routes within MAs; (5) prohibition of off-highway competitive events within MAs; (6) support of continued flat-tailed horned lizard monitoring and research; (7) mitigation for surface-disturbing activities in lizard habitat; and (8) attempting to acquire all private inholdings within MAs. An Interagency Coordination Committee (ICC) and a Management Oversight Group, composed of biologists and managers from CA signatory agencies, respectively, were established to formulate and oversee implementation of the Management Strategy. The signatories agreed to review the CA and its effectiveness annually to determine whether it should be revised. Within a year of completing the tasks identified in the implementation schedule, the involved parties shall review the CA and either modify, renew, or terminate it. The CA may at any time be amended, extended, modified, supplemented, or terminated by mutual concurrence. Participation in the CA/Management Strategy is voluntary, and agencies may withdraw from participation with 60 days' notice. The Management Strategy is currently being revised.

A flat-tailed horned lizard Population Viability Analysis (PVA) was conducted by a conservation team convened both to share research results involving this species and to evaluate the Management Strategy. The preliminary PVA provided no estimate of the minimum viable population size and did not determine whether populations contained within the MAs were viable, due to a lack of population demographic and stochastic (*i.e.*, random events relevant to a population) information. However, the analysis illustrated the sensitivity of flat-tailed horned lizard population viability to certain factors, particularly changes in mortality and fecundity. Recommendations in the PVA report included controlling activities that result in mortality of flat-tailed horned lizards and degradation of their habitat. Large management areas were found to be desirable as a conservative approach to ensuring the long-term population persistence.

Based on information obtained since the withdrawal of the proposed listing rule in 1997 and information documented in the proposed rule, we have identified potential threats to the flat-tailed horned lizard, including the following: urban development, agricultural development, OHV activity, energy developments, military activities, introduction of non-native plants, pesticide use, and habitat degradation due to Border Patrol and

illegal drive-through traffic along the United States-Mexico border. These threats and their effects on flat-tailed horned lizards and their habitat are discussed in further detail in the section "Summary of Factors Affecting the Species."

Previous Federal Action

In 1982, we first identified the flat-tailed horned lizard as a category 2 candidate species for listing under the Act (47 FR 58454). Service regulations defined category 2 candidate species as "taxa for which information in the possession of the Service indicated that proposing to list as endangered or threatened was possibly appropriate, but for which sufficient data on biological vulnerability and threats were not currently available to support proposed rules." In 1989, we elevated the species to category 1 status (54 FR 554). Category 1 included species "for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule." Subsequently, on November 29, 1993, we published a proposed rule to list the flat-tailed horned lizard as a threatened species pursuant to the Act (58 FR 62624).

On May 16, 1997, in response to a lawsuit filed by the Defenders of Wildlife to compel us to make a final listing determination on the flat-tailed horned lizard, the District Court in Arizona ordered us to issue a final listing decision within 60 days. A month after the District Court's order, several State and Federal agencies signed a CA implementing a recently completed rangewide management strategy to protect the flat-tailed horned lizard. Pursuant to the CA, cooperating parties agreed to take voluntary steps aimed at "reducing threats to the species, stabilizing the species" populations, and maintaining its ecosystem."

On July 15, 1997, we issued a final decision to withdraw the proposed rule to list the flat-tailed horned lizard as a threatened species (62 FR 37852). We based the withdrawal on three factors: (1) Population trend data did not conclusively demonstrate significant population declines; (2) some of the threats to the flat-tailed horned lizard habitat had grown less serious since the proposed rule was issued; and (3) we believed that the recently approved "conservation agreement w[ould] ensure further reductions in threats."

Six months following our withdrawal of the proposed listing rule, the Defenders of Wildlife filed a lawsuit challenging our decision. On June 16, 1999, the District Court for the Southern

District of California granted summary judgement in our favor upholding our decision not to list the flat-tailed horned lizard. However, on July 31, 2001, the Ninth Circuit Court of Appeals reversed the lower court's ruling and directed the District Court to remand the matter back to us for further consideration in accordance with the legal standards outlined in its opinion. The case was remanded back to us because (1) the withdrawal did not expressly consider whether the flat-tailed horned lizard is likely to become an endangered species within the foreseeable future in a significant portion of its range; and (2) the withdrawal did not "address the lizard's viability in a site-specific manner with regard to the putative benefits of the Conservation Agreement."

On October 24, 2001, the District Court ordered us to reinstate the previously effective proposed listing rule within 60 calendar days and, thereafter, commence a 12-month statutory time schedule for a final listing decision, and render our final listing determination in compliance with the mandate of the Ninth Circuit Court's order. Accordingly, we published a notice on December 26, 2001, announcing the reinstatement of the 1993 proposed listing of the flat-tailed horned lizard as threatened and the opening of a 120-day public comment period on the reinstated proposed rule (66 FR 66384).

In compliance with our requirements and for the purpose of adequately soliciting public comment, we published legal notices of the reinstatement of the 1993 proposed rule and the opening of the public comment period in the *San Diego Union Tribune* on January 7, 2002; *Imperial Valley Press* on January 7, 2002; *The Desert Sun* on January 8, 2002; and *The Yuma Daily Sun* on January 7, 2002; inviting the general public to comment. On May 30, 2002, we published a notice reopening the public comment period for an additional 60 days (67 FR 37752) and announced that we would be holding public hearings from 1 to 3 p.m. and from 6 to 8 p.m. on June 19, 2002, in El Centro, California. Additionally, on May 30, 2002, we published public notices in the *San Diego Union Tribune*, *Imperial Valley Press*, and *The Desert Sun*, announcing the June 19, 2002, public hearings in El Centro, California.

On September 24, 2002, we published an additional notice (67 FR 59809) announcing the reopening of the public comment period for 15 days to allow for peer review, additional public comment on the proposed rule, and submittal of information that has become available

since our 1997 withdrawal. In this current final determination to withdraw our proposal to list the flat-tailed horned lizard as threatened, we address the Court's order that we determine: (1) Whether the flat-tailed horned lizard is likely to become an endangered species within the foreseeable future in a significant portion of its range; and (2) the lizard's viability in a site-specific manner with regard to the putative benefits of the CA.

Summary of Comments and Recommendations

In the 3 notices announcing the public comment periods, we requested all interested parties to submit the following types of information pertaining to the flat-tailed horned lizard: current status, ecology, distribution, threats, and management/conservation efforts in place. We requested this information in order to make a new final listing determination based on the best scientific and commercial data currently available. During the three public comment periods, we received written comments from a total of 58 entities, and 10 speakers gave verbal comments at the public hearings.

Substantive information provided in all public comments either has been incorporated directly into this withdrawal or is addressed below. Similar comments are grouped together.

Comment 1: One commenter supported the listing of several populations of flat-tailed horned lizards, including the population in the Coachella Valley and Arizona. The commenter further stated that independent of the proposal to list the flat-tailed horned lizard as a threatened species rangewide, the Coachella Valley population must be listed as an endangered species.

Our Response: In our 1993 proposed rule, we proposed to list the flat-tailed horned lizard as a threatened species throughout its range.

However, under the Act and our regulations, a species will still warrant listing if it is threatened or endangered in a significant portion of its range. As discussed in the "Finding" section of this withdrawal, we have determined that the flat-tailed horned lizard is not threatened throughout all or a significant portion of its range.

We considered whether the flat-tailed horned lizard population in the Coachella Valley would warrant listing pursuant to our joint Service and National Marine Fisheries Service Policy Regarding the Recognition of Distinct Vertebrate Population Segments (61 FR 4722). According to this policy,

to be listed as distinct vertebrate population segments populations have to qualify as both "discrete" and "significant."

A population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions: (1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors; or (2) it is delineated by international government boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act. If a population segment is considered discrete under one or more of the above conditions, its biological and ecological significance will then be considered. Significance is determined by the importance or contribution, or both, of a discrete population to the species throughout its range. The policy (61 FR 4722) lists four examples of factors that may be used to determine significance: (1) Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; (2) evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon; (3) evidence that the discrete population segment represents the only known surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range; and (4) evidence that the discrete population segment differs markedly from other populations of the taxon in genetic characteristics. In carrying out this analysis, the Service will consider available scientific evidence of the discrete population segment's importance to the species as a whole.

If a population segment is found to be discrete and significant (*i.e.*, it is a DPS) its evaluation for endangered or threatened status will be based on the Act's definitions of those terms and on a review of the species' status relative to the factors described in section 4(a)(1) of the Act for listing a species as endangered or threatened.

As outlined in this withdrawal, we currently believe there are four disjunct geographic areas occupied by flat-tailed horned lizards. They are disjunct due to fragmentation of habitat by agricultural and urban development, the Salton Sea, and the Colorado River. We recognize that of the four geographically discrete populations, the Coachella Valley population is the smallest and most fragmented by development and roads, and faces existing and future threats to

the remaining habitat. Current scientific evidence does not suggest that the Coachella Valley population is genetically, behaviorally, or ecologically unique; is a large population of flat-tailed horned lizards; or contributes individuals to other geographic areas through emigration. Therefore, we conclude that this population, even if discrete, is not significant within the meaning of the DPS policy. If additional information becomes available that indicates the Coachella Valley population is biologically or ecologically significant pursuant to the Policy Regarding the Recognition of Distinct Vertebrate Population Segments (61 FR 4722), we may reconsider the status of the Coachella Valley population for the purpose of listing under the Act. At this time, the threats to the remaining populations (as described below) do not suggest that they warrant consideration for listing as a separate DPS.

Comment 2: One commenter noted that the population of flat-tailed horned lizards in the Coachella Valley is isolated from all other populations and is at the northern limit of the species range, and that preliminary genetic work being conducted at Utah State University suggests that the Coachella Valley population has a unique genetic structure.

Our Response: We agree that the population of flat-tailed horned lizards in the Coachella Valley is isolated from all other populations, and is at the northern limit of the species range. We have contacted the Utah State University scientist who is conducting the genetic research on the species, and he indicated that the work is still ongoing and that no conclusions have been drawn yet on the genetic structure of flat-tailed horned lizard populations.

Comment 3: Several commenters have remarked on the apparent lack of implementation of the planning actions in the Management Strategy, and its overall ineffectiveness with regards to conservation of flat-tailed horned lizard populations.

Our Response: There are nine planning actions with associated subactions. The Management Strategy states that it is understood among the signatories that implementation of these actions is subject to availability of funds and compliance with all applicable regulations. The implementation of the planning actions from May 1997 through June 2002 was as follows.

Planning Action 1: Delineate and designate five flat-tailed horned lizard MAs and one flat-tailed horned lizard research area. Management Areas have not been fully designated, although

participating agencies have continued to recognize the boundaries of MAs. Precise boundary descriptions have been completed. Naval Air Facility-El Centro has designated the portions of the MAs under Department of Defense jurisdiction through the Naval Air Facility-El Centro Integrated Natural Resources Management Plan. In order to implement the Management Strategy, the Yuma and El Centro BLM field offices have drafted a document entitled "The Proposed Amendment to the California Desert Conservation Area Plan and the Yuma District Resource Management Plan to Expand the East Mesa ACEC, West Mesa ACEC, and Gran Desierto Dunes ACEC Boundaries and To Implement the Flat-Tailed Horned Lizard Rangeland Management Strategy in Imperial County, California and Yuma County, Arizona." An Environmental Assessment (EA No. CA-067-EA-1998-023) was associated with the proposed amendment, and is still in the process of being finalized. Public scoping meetings concerning the proposed amendment were held. While the environmental assessment has not been completed, the Conservation Agreement has been signed and the Management Strategy has been implemented to the degree mentioned below.

Planning Action 2: Define and implement management actions necessary to minimize loss or degradation of habitat. Most subactions were implemented as follows. Appropriate mitigation measures were enforced for all authorized projects that impacted flat-tailed horned lizards or their habitat. Compensation funds were required for most projects that had residual impacts to flat-tailed horned lizard habitat. The limit of discretionary land use authorizations (not including impacts from OHV activity) to 1 percent cumulatively for each MA was not exceeded. No disposal of lands within MAs occurred. No new roads were authorized in MAs. Members of the ICC for the Management Strategy held several flat-tailed horned lizard orientation sessions with Border Patrol agents in the Yuma and El Centro sectors to reduce impacts to flat-tailed horned lizard habitat along the international border. The BLM El Centro office implemented an aggressive education strategy with Border Patrol to reduce impacts to flat-tailed horned lizard habitat. Competitive off-highway vehicle races have not been permitted in MAs. No new recreation facilities were allowed in MAs. A camping closure was implemented and enforced as mitigation in the East Mesa MA. However,

important subactions to designate routes "open," "closed," or "limited;" to reduce route density; and to limit camping to within 15 m (50 ft) from the centerline of a designated open route in MAs were not implemented; or were implemented to a limited degree. The effects of this inaction are discussed under Factor A of the section "Summary of Factors Affecting the Species."

Planning Action 3: Rehabilitate damaged and degraded habitat in MAs. BLM staff have been rehabilitating routes inside the Yuha Basin MA. They have focused on proliferation (unauthorized development of new routes by users) and parallel routes off of designated routes; and have rehabilitated approximately 32 to 40 km (20 to 25 mi) of non-designated routes.

Planning Action 4: Attempt to acquire through exchange, donation, or purchase from willing sellers all private lands within MAs. Lists prioritizing parcels for acquisition have been maintained by the California OHV Division office headquarters in Sacramento and by BLM's El Centro office. BLM's El Centro office has contacted all landowners within the East Mesa MA to advise them of BLM's desire to acquire their lands through purchase or exchange. Approximately 6,273 ha (15,500 ac) of Arizona State land within the Yuma Desert MA was acquired by the Department of Defense, a signatory to the Management Strategy. Consequently, all land within this MA is owned by signatory agencies. Anza Borrego Desert State Park acquired private lands totaling 299 ha (740 ac) within and adjacent to the Borrego Badlands MA. BLM-El Centro acquired 97 ha (240 ac) within the East Mesa MA and 32 ha (80 ac) within the West Mesa MA. California Department of Transportation has purchased one section (259 ha [640 ac]) in the northern portion of the West Mesa MA as compensation for a project outside the MAs. This section may be conveyed to BLM in the future.

Planning Action 5: Maintain or establish effective habitat corridors between naturally adjacent populations. No new corridors have been established, but no new projects were authorized that would block movement across existing corridors between MAs. Currently, MAs that may still be connected by corridors include the Borrego Badlands MA, West Mesa MA, and Yuha MA. An OHV open area and I-8 lie between West Mesa and the Yuha MAs, but two underpasses may facilitate some movement between these MAs. All corridors across the U.S.-Mexico border are currently intact, according to the ICC.

Planning Action 6: Coordinate activities and funding among the participating agencies and Mexican agencies. The signatory agencies formed the ICC, which has met quarterly to discuss implementation of planning actions under the Management Strategy. The signatory agencies also formed a Management Oversight Group to provide management-level leadership, coordination, and oversight in the implementation of the Management Strategy. A study to investigate the distribution of flat-tailed horned lizards in Sonora and Baja California, Mexico, was initiated with funding from BOR and BLM.

Planning Action 7: Promote the purposes of the strategy through law enforcement and public education. Annual reports (ICC 1999a, ICC 1999b, ICC 2002) stated that insufficient law enforcement personnel were available to prevent most of the illegal off-highway vehicle traffic and illegal dumping that occurs in the West Mesa, Yuha Basin, and East Mesa MAs. The annual reports state that given the funding situation of most of the agencies involved, sufficient law enforcement is unlikely to occur. Information pamphlets addressing the flat-tailed horned lizard were prepared by the CDPR staff at Ocotillo Wells SVRA and Naval Air Facility El Centro and distributed to relevant agencies and the public. Flat-tailed horned lizard signs were posted on most access points into the Yuma Desert and East Mesa MAs. BLM's El Centro office produced range-user brochures and wallet cards to educate all range users of the presence of flat-tailed horned lizards and procedures to avoid impacting lizards and to report any accidental impacts to lizards.

Planning Action 8: Encourage and support research that will promote the conservation of flat-tailed horned lizards or desert ecosystems and will effectively define and implement necessary management actions, both within and outside of MAs and the Research Area. Ocotillo Wells SVRA funded four studies (Young 1999, Setser and Young 2000, Setser 2001, and Gardner 2002) to collect information on flat-tailed horned lizard demographics, habitat use, and the effects of OHV activity. Various sampling methodologies to assess population trends were tested. ICC members consulted with Colorado State University regarding monitoring population trends. Flat-tailed horned lizard life history and demographic data were collected by several researchers from Utah State University. In 2001, BLM's El Centro office conducted a pilot CMR study that led to a population

estimate study in 2002 for the Yuha Basin MA. Tissue samples were taken from the disjunct populations throughout the range of the flat-tailed horned lizard and are to be analyzed by Utah State University to determine any genetic differences between populations.

Planning Action 9: Continue Inventory and Monitoring. BLM's Palm Springs office conducted surveys in the Coachella Valley. Surveys were also conducted across Baja Norte and Sonora, Mexico, with the help of ICC personnel and funding from BOR and BLM. Additional surveys were conducted along the peripheral areas of the Borrego Badlands MA. Surveys of flat-tailed horned lizards and their scat continued on MAs each year between 1997 and 2001. ICC annual reports monitored the habitat loss authorized by Management Strategy/CA signatories. The Navy contracted Tierra Data Systems in 1997 to take aerial photographs and digitally map the five MAs and the Research Area to document habitat loss and disturbance. The El Centro BLM office quantified vehicular impacts at a finer resolution than Tierra Data Systems by using a step-point method on the West Mesa, Yuha Basin, and East Mesa MAs. A similar analysis was conducted in the Yuma MA by the Service and the Arizona Game and Fish Department.

In conclusion, while the Management Strategy has resulted in actions that provide protections for the flat-tailed horned lizard and has contributed to reductions in particular threats to the species (see Factor D below), the stated objectives of the Management Strategy have not yet been fully achieved. Specifically, the four of the Management Strategy's priority 1 planning subactions have not been fully implemented. These are the following: (1) Finalizing the designations of the MAs; (2) reducing route densities in MAs; (3) signing routes closed, limited, or open; and (4) providing adequate law enforcement.

Comment 4: One commenter stated that one of the management areas is within the boundaries of an ORV Open Area (Ocotillo Wells SVRA) and asked what has been done on the ground in the Ocotillo Wells SVRA to actually protect the lizard's habitat.

Our Response: None of the Management Areas contains OHV open areas. The Ocotillo Wells SVRA is designated as a Research Area and is not a designated Management Area under the Management Strategy. The Ocotillo Wells SVRA was not established to protect the flat-tailed horned lizard's habitat. It is one of six State Vehicular Recreation Areas within California that

serve as OHV parks for the public. While OHV freeride, racing, and touring are permitted, the Ocotillo Wells SVRA prohibits most permanent surface disturbing activities. In order to encourage studies on the flat-tailed horned lizard, the Ocotillo Wells SVRA was proposed as a Research Area in the Management Strategy. Funding was to be provided by the California Department of Parks and Recreation Division of Off-Highway Motor Vehicle Recreation.

Comment 5: One commenter stated that large areas within the BLM-managed deserts of California and Arizona, as well as significant portions of Anza-Borrego Desert State Park and the Ocotillo Wells SVRA, have been closed to protect the flat-tailed horned lizard and its habitat from OHV intrusion.

Our Response: No areas have been closed to OHV use to protect the flat-tailed horned lizard or its habitat. Within the Anza-Borrego Desert State Park, OHV activity is limited to designated routes. Most of the BLM managed lands within the range of the flat-tailed horned lizard are currently open to OHV use in some capacity. The entire Ocotillo Wells SVRA is open to OHV use in some form, and the majority is completely open to freeride (unlimited access and use). The Ocotillo Wells SVRA is in fact the largest of the State Vehicular Recreation Areas in California, comprising approximately 85 percent of land in the program. In addition, there are two BLM Open Areas that have unrestricted OHV use, the BLM's Plaster City (16,592 ha [41,000 ac]) and Superstition Hills (5,261 ha [13,000 ac]) Open Areas.

Comment 6: One commenter mentioned that the data show a weak, almost nonexistent correlation between OHV use and alleged declines in flat-tailed horned lizard populations, and that by contrast, other threats such as predation by ravens, shrikes, and round-tailed squirrels have been substantiated with hard evidence.

Our Response: Past indices of population abundance of the flat-tailed horned lizard have not used similar methodologies, nor have they incorporated detection probabilities. Population trends based on such data potentially include error related to numerous variables, including variation in detectability, scat counts, sampling methods, study areas sampled, number of transects surveyed, number of observers, temperature, year, etc. The BLM (Wright 2002) reported data that can be used as an indication of abundance from 1979 to 2001 and the correlation of OHV activity and

population abundance, conditional on a number of assumptions.

Wright (2002) reported that flat-tailed horned lizards were encountered at the highest rates in the Navy and Limited use areas of West Mesa, at intermediate rates in the Yuha Desert and East Mesa, and at the lowest rates in the West Mesa ACEC, Plaster City, and Superstition Mountains Open Areas. If detection rates were assumed to be equal across all variables involved, then an inference could be made that the areas used most by OHVs, the open areas, have the lowest abundance of flat-tailed horned lizards. If we assume that the main difference between open and the other areas is a higher rate of use of open areas by OHVs, we could reasonably conclude that OHV impacts were responsible for this difference. However, the previously mentioned bias and error associated with the data collection make this inference weak and unreliable.

Further hypothesis testing of the relationship of OHV use and flat-tailed horned lizard abundance incorporating detection probabilities in a rigorous sampling design would be valuable. The BLM has recognized the importance of incorporating detection probability into their flat-tailed horned lizard sampling designs and has recently employed such a design to estimate population size in the Yuha Basin MA, referred to previously in the "Background" section of this notice.

OHV activity has also been documented as the direct cause of mortality of individual flat-tailed horned lizards (Luckenbach 1975; Luckenbach and Bury 1983; Muth and Fisher 1992). However, the number of documented flat-tailed horned lizard mortalities due to OHVs is limited.

The fact that ravens, shrikes, and round-tailed squirrels have been documented as predators of flat-tailed horned lizards does not make them threats to the survival of the species. We assume that flat-tailed horned lizards have coevolved in a predator-prey relationship with most of the predators they encounter in the Sonoran Desert. There are no data showing that round-tailed ground squirrels or other predators depend on flat-tailed horned lizards as a primary food source. To the contrary, round-tailed ground squirrels are omnivorous and rely on plant material for a major part of their diet (Ernest and Mares 1987).

Anthropogenic threats (*i.e.*, human caused habitat destruction and degradation; *e.g.*, OHV activity) and introduced predators or competitors are generally regarded as more severe threats to the survival of native species than are predators or interspecific

competition with which the species has coevolved (Pimm *et al.* 1995). There is also the potential for natural predators to increase their predation rate on certain prey given human subsidies available. For example, increased predation rates on flat-tailed horned lizards by loggerhead shrikes and American kestrels have been reported in localized areas where human-provided perches (*e.g.*, power lines or planted palm trees) have been used by shrikes and kestrels as points from which to hunt (Young and Young 2000, Cameron Barrows pers. comm, 2002). However, areas in which these increased predation rates occur are small in size and occur within relatively short distances of the perches in the abovementioned examples.

Comment 7: One commenter stated that it is absolutely critical that we not issue a final decision until after we have conducted the studies necessary to address flat-tailed horned lizard abundance and viability on private lands. The commenter further recommended that all future studies do the following: (1) Abandon scat counts as a way of deriving species densities, (2) use different, more reliable methods for counting flat-tailed horned lizards, and (3) be repeatable over time, so that trend data on the lizard can be developed.

Our Response: The schedule for the final listing determination was mandated by the Southern District Court of California under the direction of the Ninth Circuit Court of Appeals, to be made within 12 months of reinstating the proposed listing. A notice announcing the reinstatement of the 1993 proposed rule was published in the **Federal Register** on December 26, 2001. Consequently, on the basis of the best scientific and commercial data currently available, we must make a final listing determination for the flat-tailed horned lizard by December 26, 2002.

While our listing determination undoubtedly would be aided by further studies on flat-tailed horned lizards, we can not delay the decision. Additionally, we do not currently have the funding to conduct additional research prior to making our decision. Despite this shortcoming, several of the commenter's recommendations have already been enacted. We have not used any scat count information to derive lizard density or abundance estimates, and the BLM has begun to use the previously mentioned CMR methodology to conduct population estimates on the MAs, which can then be replicated in the future to gain information on population trends.

Comment 8: One commenter remarked that a large flaw in the management strategy was that little or no baseline data were gathered on the abundance of the lizard or the condition of its habitat at the time the conservation agreement was put in place.

Our Response: While there were no data leading to population estimates, there were data gathered on flat-tailed horned lizard abundance using transects between 1979 and 1997, as discussed previously. In addition, the U.S. Navy (signatory agency) funded aerial photography of the MAs, and Tierra Data Systems subsequently analyzed the photographs to establish baseline levels of surface disturbance within MAs. We have since analyzed aerial photos taken in 2002 in an attempt to document disturbance on MAs using a methodology similar to that used by Tierra Data Systems in 1997. We then compared the 1997 disturbance information to that of 2002 to assess the change in amount of disturbance during that time period. The results of this comparative analysis can be found under our discussion of Factor A in the Summary of Factors Affecting the Species.

Comment 9: Several commenters have expressed concern that Border Patrol is not a signatory to the Conservation Agreement associated with the Management Strategy, and that its activities pose one of the main threats to the flat-tailed horned lizard.

Our Response: The Border Patrol declined the opportunity to sign the CA, but has encouraged education of new agents and continues to coordinate with signatory agencies to identify ways to reduce the impacts of Border Patrol activities. ICC members held several flat-tailed horned lizard orientation sessions with Border Patrol agents in the Yuma and El Centro sectors to reduce impacts to flat-tailed horned lizard habitat along the international border. These briefings were designed to familiarize Border Patrol agents with flat-tailed horned lizard natural history, habitat requirements, and the importance of minimizing vehicular traffic off of designated patrol routes/roads, and were well received by Border Patrol personnel. However, the Border Patrol's OHV activities and their impacts on flat-tailed horned lizard conservation have not been monitored and assessed.

Comment 10: One commenter remarked that while the MAs may be large enough to ensure viability of the species, because only approximately 35 percent of the current range of the flat-tailed horned lizard is included in the

MAs, the species will at some point cease to be a part of the ecological community.

Our Response: Assessing a species' role in an ecosystem is often a complex task. We believe that the flat-tailed horned lizard will continue to be a self-sustaining, functioning component of their ecosystem into the foreseeable future. The roughly 65 percent of the current range of the flat-tailed horned lizard found outside of the MAs, if not developed, may continue to serve as habitat for flat-tailed horned lizard populations.

Much of the habitat outside the MAs is managed by Federal agencies such as the BLM, or the State. These agencies have the capacity to manage their lands to conserve flat-tailed horned lizard habitat into the future. The Management Strategy is applied to lands owned or managed by Federal signatories outside MAs as well, albeit to a lesser degree than is done for lands inside MAs. BLM lands outside of designated open areas are managed for limited use under the California Desert Conservation Area Plan. The flat-tailed horned lizard is also a sensitive species in the California Desert Conservation Area Plan, which states the goal for such designated species is to manage the species and their habitats so that the potential for Federal or State listing is minimized. In addition, the BLM must adhere to directives such as Executive Orders 11644 and 11989, which established policies and provided for procedures to control and direct, among other things, the use of OHVs on Federal lands in order to protect the resources of those lands.

Any habitat within the current range of the flat-tailed horned lizard that is in the Anza-Borrego Desert State Park is managed favorably for the conservation of the flat-tailed horned lizard, because of the emphasis placed on resource protection and regulations limiting OHV activity to designated trails. Some of the California state land outside the MAs is in the Ocotillo Wells SVRA. The mission of the Off-Highway Motor Vehicle Recreation Division (CSDPR 2002) includes insuring "that quality recreational opportunities remain available for future generations by providing for education, conservation, and enforcement efforts that balance OHV recreation impact with programs that conserve and protect cultural and natural resources." In addition, projects on State lands must adhere to the California Environmental Quality Act (CEQA). CEQA requires a full public disclosure of the potential environmental impact of proposed projects. Moreover, there is no evidence

of private lands in flat-tailed horned lizard habitat being developed at a rate that would pose a significant threat to the species or its habitat, except in the Coachella Valley.

In the Coachella Valley, Regional Habitat Conservation Plans in preparation by the Coachella Valley Association of Governments and the Agua Caliente Band of Cahuilla Indians would conserve a yet-to-be-determined amount of flat-tailed horned lizard habitat, leaving the rest subject to development. However, these Habitat Conservation Plans are in progress and are subject to approval in the future; therefore, their completion and implementation cannot be relied upon for conservation purposes.

Comment 11: One commenter responded that BLM studies have shown that flat-tailed horned lizard populations have remained at levels found in the 1970s, regardless of the increased use of the desert by Border Patrol, OHVs, and other development.

Our Response: The BLM population trend data from the 1970s until 2001 used scat counts, which have been acknowledged to be unreliable indicators of lizard abundance (Muth and Fisher 1992, Rorabaugh 1994, Beauchamp *et al.* 1998) that should not be used to analyze population trends. Other problems associated with these studies have been stressed in our response to comment 6. In 2002, the BLM started to use the CMR methodology (described previously) incorporating detection probability to estimate population sizes on the MAs. This is a much more reliable and promising methodology that BLM will continue using in the future to monitor population trends. The increased use of the desert by Border Patrol, OHVs, and other development and the resulting effects on flat-tailed horned lizard populations has been difficult to monitor. Intuitively, we know these impacts cannot keep increasing without resulting in negative impacts to habitat. However, based on the best available information, we have determined that such possible negative impacts do not currently, or in the foreseeable future, pose a threat to the species. Land use thresholds resulting in population declines can only be derived through sound research and monitoring. See also discussion in Factor A below.

Comment 12: Several commenters stated that we should take economic impacts into consideration when we decide whether to list the flat-tailed horned lizard, because the areas surrounding the lizard's habitat are in danger of suffering economic harm

should the listing and any resulting land use restrictions occur.

Our Response: The Act requires us to make listing determinations solely on the basis of the best scientific and commercial data available after conducting a review of the status of the species (section 4(b) of the Act). Congress also made it clear in the Conference Report accompanying the 1982 amendments to the Act that “economic considerations have no relevance to determinations regarding the status of species.” We do not consider economic impacts in the listing process, except when designating critical habitat; during this latter process, we conduct an economic analysis.

Comment 13: One commenter noted that reported habitat loss resulting from urbanization may not be accurate, because cities such as Imperial, El Centro, and Brawley have alkali, heavy clay, and silty clay soils, respectively; and these soil types are not preferred habitat for the flat-tailed horned lizard.

Our Response: These soils and habitats in Imperial Valley may not have been preferred or high quality habitat for the flat-tailed horned lizard, but they still more than likely provided habitat of some quality. Historically, the Imperial Valley may not have consisted of contiguous habitat quality but probably consisted of a patchy mosaic of different qualities of flat-tailed horned lizard habitat, as is seen today in the different geographic areas. Flat-tailed horned lizards do not require fine sandy habitats as was described in the past, but appear to be more flexible in their use of different soil types (Beauchamp *et al.* 1998). They have been found to occur on clay soils (Turner *et al.* 1980); concretions, gravel, and silt (Beauchamp *et al.* 1998); and desert pavement areas (Altman *et al.* 1980); in addition to the fine sandy habitats in which they are commonly found. They have even been found on the rocky lower slopes of Superstition Mountain coexisting with chuckwallas (Turner *et al.* 1980). Furthermore, the areas the commenter notes above may have been beneficial to populations for reasons other than providing quality habitat (*e.g.*, corridors or “stepping stones” providing gene flow among populations). Flat-tailed horned lizards have been documented in what are now the towns of Westmorland, Seeley, and Holtville (Klauber 1932).

Comment 14: A few commenters noted that although the Management Strategy and Conservation Agreement were produced in 1997, an environmental assessment to officially

authorize the Management Areas has not been completed.

Our Response: While this is true, the Yuma and El Centro BLM field offices drafted a document to implement the Management Strategy. This document is “The Proposed Amendment to the California Desert Conservation Area Plan and the Yuma District Resource Management Plan to Expand the East Mesa ACEC, West Mesa ACEC, and Gran Desierto Dunes ACEC Boundaries and to Implement the Flat-tailed Horned Lizard Rangeland Management Strategy in Imperial County, California, and Yuma County, Arizona.” An environmental assessment (EA No. CA-067-EA-1998-023) is attached to this proposed amendment. Public scoping meetings concerning this proposed amendment have been held, and work is in progress to finalize the environmental assessment. While the environmental assessment has not been completed, the Conservation Agreement has been signed, and the Management Strategy has been implemented to the degree mentioned previously.

Peer Review

In accordance with our July 1, 1994, Interagency Cooperative Policy for Peer Review in Endangered Species Act Activities (59 FR 34270), we solicited the expert opinions of six independent specialists. The Policy for Peer Review states that it is the policy of the Service to incorporate independent peer review in listing decisions during the public comment period in the following manner: (1) Solicit the expert opinions of a minimum of three appropriate and independent specialists regarding pertinent scientific and commercial data and assumptions relating to the taxonomy, population models, and supportive biological and ecological information for species under consideration for listing; and (2) summarize in the final decision document the opinions of all independent peer reviewers received on the species under consideration. The purpose of such review is to ensure that listing decisions are based on scientifically sound data, assumptions, and analyses, including input of appropriate experts and specialists.

We specifically asked the reviewers to review both our proposal to list the flat-tailed horned lizard as threatened (58 FR 62624) and our subsequent withdrawal of the proposed rule (62 FR 37852), and also to provide comments and information on the following issues: (1) Any additional data that may assist us in making our listing decision, (2) the status and threats to the species—in particular, the four geographic areas in

which the species occurs in the United States, and (3) the effectiveness of the conservation strategy to provide adequate protection and management for the species. Four peer reviewers responded to our solicitation.

One reviewer noted that his comments are limited to the Coachella Valley population and stated that the Coachella Valley has experienced higher levels of urbanization and habitat fragmentation than any of the five MAs identified in the Management Strategy. The reviewer mentioned that the Coachella Valley historically had a substantial flat-tailed horned lizard population and that the largest remaining unfragmented habitat patch represents just 3 to 4 percent of its original extent. The reviewer stated that the Management Strategy has had no apparent benefit within the Coachella Valley, because there is no MA established within the Coachella Valley due to the lack of public land containing flat-tailed horned lizard habitat.

Two reviewers recommended the species be listed as threatened, as proposed in 1993, and the fourth reviewer recommended the species not be listed. The two reviewers who recommended listing the species stated that more research was necessary on the demographics of flat-tailed horned lizard populations.

One reviewer’s opinion was that if immediate and strong action is not taken, the species is likely to disappear in most or all of its range in the immediate future. However, this reviewer noted that critical demographic data necessary to demonstrate population stability are still lacking. The reviewer remarked that the quality of data on flat-tailed horned lizards is so poor that all analyses are suspect. The following recommendations for continued research relevant to developing the necessary information to make a convincing argument for listing this species were offered: (1) Long-term capture-recapture data; (2) phylogeography studies to determine historic patterns of dispersal and present effects of fragmentation; (3) comparative ecological studies in areas impacted by chemicals that might affect ant populations versus areas where no detectable effects of insecticide exist; (4) physiological studies to determine whether dietary shifts (away from ants) might negatively effect growth rates and size at sexual maturity; and (5) close examination of the illegal OHV threat with the intent of developing a strategy of effective enforcement.

One reviewer, who has conducted research on flat-tailed horned lizards in

Arizona and California, expressed that the designated MAs and the current protective measures are adequate, and the species does not warrant Federal listing as threatened. This reviewer stated that the main reason that the species does not warrant Federal listing is that even without population estimates for the MAs, it is reasonable to believe there are large, viable, self-sustaining populations that are being protected in the MAs.

We respectfully disagree with the two reviewers who recommended listing the flat-tailed horned lizard rangewide, because we do not feel the available data indicate that the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. While one reviewer stated that critical demographic data necessary to demonstrate population stability are still lacking, reliable demographic data showing population declines are also lacking.

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1531 *et seq.*) and the regulations (50 CFR part 424) that implement the listing provisions of the Act set forth the procedures for adding species to the Federal list of endangered and threatened species. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act. These factors and their application to the flat-tailed horned lizard rangewide are discussed below.

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

United States

There were some threats of habitat loss and modification identified in the 1993 proposed rule that have been reduced since 1993 or for which we have limited new information since 1993. The proposed rule stated that 95 percent of the remaining optimal habitat in California is threatened by one or more impacts, and that urban growth is an important component of these threats. At this time, habitat loss due to urbanization does not appear to be a significant threat in the foreseeable future, due to Federal and State land ownership of most of the remaining habitat, with the exception of that in the Coachella Valley and Borrego Valley. The Imperial Valley has been developed up against the borders of MAs, and additional BLM lands on both sides of

the Imperial Valley largely prevent further urban and agricultural development. The proposed rule also mentioned gold mining as a potential threat. There are currently no gold mines in flat-tailed horned lizard habitat, and gold mines are not expected to become a threat in the foreseeable future.

The relative abundance index that was used in the 1993 proposed rule to document a decline in the Yuha Desert has since been found to be based on erroneous assumptions and inconclusive data. The information on population trends presented in the proposed rule was derived in part from scat count data collected between 1979 and 1991. The use of scat counts for this purpose has problems that were previously mentioned in the Background section of this rule, and therefore we do not consider scat counts scientifically reliable as indicators of population abundance. At this time, the available data do not indicate that populations of flat-tailed horned lizard are declining or threatened in any of the geographic areas, with the exception of the Coachella Valley, discussed later.

The distribution of the flat-tailed horned lizard was described by Turner and Medica (1982) as the desert areas of southeastern California and southwestern Arizona and adjoining portions of Sonora and Baja California Norte, Mexico. The historical distribution of the flat-tailed horned lizard in California was arguably connected to an unknown extent from the Imperial Valley north through the Coachella Valley. Locality records report flat-tailed horned lizards occurring within the Imperial Valley in the towns of Westmorland, Seeley, and Holtville (Klauber 1932). Bryant (1911) reported locality records from Mecca (southern end of Coachella Valley) and "Salton Lake." The development of the Imperial Valley and southern half of the Coachella Valley for agriculture and urbanization, and the filling up of the Salton Sea, have essentially fragmented the range of the flat-tailed horned lizard in California into the following disjunct areas: (1) Coachella Valley, (2) west side of Salton Sea and Imperial Valley, and (3) the east side of the Imperial Valley. Additionally, the Colorado River separates the Arizona population of flat-tailed horned lizards from populations in California. Consequently, we will further analyze Factor A using the four disjunct areas within the United States: (1) Coachella Valley, (2) west side of Salton Sea/Imperial Valley, (3) east side of Imperial Valley, and (4) Arizona.

Coachella Valley (California)

There has been substantial loss and fragmentation of flat-tailed horned lizard habitat within the Coachella Valley. We use the term fragmentation to refer to the breaking up of a habitat or ecosystem into smaller parcels (Foreman 1997). Fragmentation stems from Interstate 10 (I-10), which runs through the middle of the Coachella Valley; an associated network of roads south of I-10; and associated urban and agricultural development. An important effect of habitat fragmentation is the decreased movement of a species (*i.e.*, the flat-tailed horned lizard) across a landscape. Some highways, such as I-10, act as complete barriers to movement of flat-tailed horned lizards. Other roads may decrease the probability that flat-tailed horned lizards will cross the road, or may result in increased mortality rates for flat-tailed horned lizards within an unknown distance of roads. The decrease in movement of flat-tailed horned lizards due to roads can have negative impacts to local populations, including: (1) Decreased dispersal rates of juveniles, (2) decreased likelihood for rescue of small populations due to immigration, (3) decreased genetic flow between local populations, and (4) other unknown impacts to a population's spatial structure.

The amount of contiguous and total habitat remaining in the Coachella Valley is far less than that found in the other three geographic areas. There are about 16,610 ha (41,040 ac) remaining, which represent 19 percent of the approximately 86,820 ha (214,540 ac) of historical habitat in the Coachella Valley (Barrows, pers. comm. 2002), and about 3 percent of the current habitat rangewide in the U.S. (We derive these figures using Hodges 1997 figure for current habitat within the U.S.) Approximately 75 percent of the flat-tailed horned lizard habitat in the Coachella Valley is either private or Tribal land and subject to development in the near future. The remainder is either in Federal or State ownership. Between 1996 and 2002, an estimated 2,428 ha (6,000 ac) of flat-tailed horned lizard habitat was developed in the Coachella Valley (Kim Nicol, CDFG biologist, pers. comm. 2002).

The largest patch of habitat is on the Coachella Valley Preserve and consists of about 1,480 ha (3,660 ac). In total, there are about 2,150 hectares (5,314 acres) of suitable flat-tailed horned lizard habitat that are protected as part of the Coachella Valley Fringe-Toed Lizard Preserve System (Coachella Valley Mountains Conservancy 2001).

An area with the largest amount of remaining habitat outside the fringe-toed lizard Preserve System is the Big Dune area between Palm Springs and Indian Wells, south of I-10. However, this area is fragmented with major roads and new development (e.g., residential housing, shopping centers, Agua Caliente Casino, and California State University of San Bernardino Extension) and is increasingly subject to new development because of its central location within the Coachella Valley.

Regional Habitat Conservation Plans in preparation by the Coachella Valley Association of Governments and the Agua Caliente Band of Cahuilla Indians would conserve a yet-to-be-determined amount of flat-tailed horned lizard habitat and the rest would be subject to development. However, these Habitat Conservation Plans are in progress and are subject to approval in the future; therefore their completion and implementation cannot be relied upon for conservation purposes.

West Side of Salton Sea/Imperial Valley (California)

This geographic area spans from Borrego Valley east to Salton Sea, and south to the border with Mexico, bounded on the west by the Peninsular Mountain ranges and to the east by the Salton Sea and agricultural development of the Imperial Valley. The majority of the private land that is potential flat-tailed horned lizard habitat is in the Borrego Valley and Ocotillo Wells area just south of State Route (SR) 78, west of the West Mesa MA. The geographic area contains three MAs (Borrego Badlands, West Mesa, and Yuha Basin) and the Ocotillo Wells SVRA research area.

This geographic area is fragmented from north to south by SR22, SR78, Interstate 8 (I-8), and SR98. Habitat loss has also resulted from the towns of Borrego Springs, Salton City, Ocotillo Wells, and Ocotillo. The largest of these towns is Borrego Springs, with a population of approximately 3,000 people. Due to the small size of these towns, it is unlikely that urban or agricultural development in or around these small towns is a significant threat to the flat-tailed horned lizard or its habitat in the foreseeable future.

Borrego Badlands MA

The Borrego Badlands MA is composed of about 17,159 ha (42,400 ac), of which 14,771 ha (36,500 ac) is habitat managed by signatories to the Management Strategy/CA, and 2,388 ha (5,900 ac) are private land. When we compared habitat disturbance and loss from aerial photographs taken in 2002

with the habitat loss and disturbance documented by Tierra Data Systems in 1997, we found that the length of dirt roads had slightly increased from 154 kilometers (km) (96 miles [mi]) to 192 km (120 mi), and the area disturbed had increased from 142 ha (351 ac) to 761 ha (1,881 ac). However, this increase in disturbed area may have been an artifact of what we designated disturbed versus what Tierra Data Systems called disturbed. The majority of the increase in disturbed habitat was attributed to an area that appeared to be an abandoned airfield.

West Mesa MA

The West Mesa MA consists of approximately 55,079 ha (136,100 ac), of which 46,257 ha (114,300 ac) is habitat managed by signatories to the Management Strategy/CA, and 8,822 ha (21,800 ac) are private land. No geothermal activity was found during BLM disturbance surveys, but about 2 percent of the surface has been affected by mining. In 2001, the BLM estimated that 11.4 percent of the West Mesa MA was covered with vehicle tracks (Wright 2002). Wright (2002) reported that the West Mesa and Yuha Basin MAs have relatively high levels of vehicular disturbance throughout and lack protected core habitats when compared with the East Mesa MA. The number of OHV routes in the West Mesa MA increased roughly fourfold from 1985 to 2001 (Wright 2002).

Yuha Basin MA

The Yuha Basin MA consists of about 24,363 ha (60,200 ac), of which 23,149 ha (57,200 ac) of habitat is managed by signatories to the Management Strategy/CA. This MA is bounded by I-8 to the north and fragmented by SR98 running east to west across the entire MA. In 2001, the BLM estimated that 10.5 percent of the eastern Yuha Basin MA was covered with vehicle tracks (Wright 2002). Wright (2002) estimated there was a 23 percent increase in routes and graded roads on this MA from 1994 to 2001, and commented that the vehicle track levels along SR98 in the eastern Yuha Basin MA are more consistent with an Open Area than they are with a limited area. Part of the high level of vehicle track disturbance in this area can be attributed to the increase in illegal drive-through traffic in the recent past from the border into the U.S. (BLM 2002). Drive-through traffic consists of vehicles that drive illegally across the International boundary, the majority off-road, without being inspected by Federal officers. The Border Patrol is planning to erect an "Anti-Vehicle Barrier System" along the international

order that will decrease this specific OHV threat in the future. This system has been effective in reducing illegal drive-through traffic near the Algodones Dunes.

The primary reason for the proliferation of trails in limited use areas is most likely due to the lack of route signing and law enforcement available not only on the Yuha Basin MA, but across all MAs. "Federal Lands: Information on the Use and Impact of Off-highway Vehicles," a U.S. General Accounting Office (USGAO) report to Congress (USGAO 1995), reported that BLM has "not completed inventories of their OHV areas, roads, and trails, and they have not finished preparing maps and posting signs to indicate where OHVs may or may not be used. Without such inventories, maps, and signs, neither the public nor the staff can be certain whether specific areas, roads, or trails are available for OHV use." The report did not specifically look at the resource areas containing flat-tailed horned lizard habitat, but it does illustrate the difficulty BLM offices across the western United States have in complying with their agency's own regulations requiring the designation of lands for OHV use be communicated to the public. Without maps and signs to identify OHV routes, the USGAO (1995) concluded that restricted-use areas are, in effect, used and managed as open-use areas.

Our analysis showed that, between 1997 to 2002, the percentage of area disturbed increased from 6.6 to 9.7, the area of disturbance increased from 1,376 ha (3,400 ac) to 2,145 ha (5,300 ac), and the length of roads increased from 394 km (246 mi) to 655 km (409 mi). We consider the BLM figures for vehicle track coverage to be more accurate for strictly measuring vehicle tracks, because of the finer resolution in sampling. BLM measured track coverage on the ground, while our measurements were derived from aerial photographs with obviously much coarser resolution.

Outside MAs

The Ocotillo Wells SVRA manages about 31,040 ha (76,700 ac) between the Borrego Badlands MA and the West Mesa MA, west of SR86. The Ocotillo Wells SVRA allows unrestricted use by OHVs across approximately 20,640 ha (51,000 ac) of this area, while the remaining land is a restricted area zone limited to OHV use on designated trails only (Hollenbeck, pers. comm. 2002). In addition to the Ocotillo Wells SVRA, in this geographic area unrestricted OHV use is also allowed in the BLM's Plaster City (approximately 6,070 ha [15,000 ac]) and Superstition Hills

(approximately 14,164 ha [35,000 ac]) Open Areas.

The California State Department of Parks and Recreation (CSDPR 2002) has reported an increasing popularity of OHV activity in California, with a 30 percent increase in dirt bike registrations, a 96 percent increase in the number of All-Terrain Vehicle registrations, and a 96 percent increase in Dune Buggy and Sand Rail registrations from 1983 to 2000. The number of 4 wheel-drive vehicles registered in the state increased 74 percent from 1994 to 2001. The visitation rate to State Vehicular Recreation Areas in California increased 52 percent from 1985 to 2000. The Ocotillo Wells SVRA contains the majority of the greater than 36,423 ha (90,000 ac) in California's six SVRAs. These upward trends in OHV use in California can be expected to continue as the U.S. Census Bureau estimates California's population to increase by 39 percent, from 32 million to 45 million people by the year 2020.

OHV activity can result in direct mortality of flat-tailed horned lizards and other sand dwelling lizards (Luckenbach 1975; Luckenbach and Bury 1983; Muth and Fisher 1992). Road mortality has also been documented to occur (Turner and Medica 1982, Muth and Fisher 1992, ICC 1999b, Young and Young 2000). Flat-tailed horned lizards may be more prone to road and OHV caused mortality than other lizards due their tendency to remain motionless when approached. OHV activity can also crush burrows used by flat-tailed horned lizards and modify habitat because of impacts to vegetation (Luckenbach 1975, Vollmer *et al.* 1976, Bury *et al.* 1977, Luckenbach and Bury 1983, Wilshire 1983), soil disturbance (Luckenbach 1975, Bury *et al.* 1977, Webb 1983, Strittholt *et al.* 2000); and introduction of non-native plants.

Past studies of OHV impacts on lizards (Busack and Bury 1974, Bury *et al.* 1977, Luckenbach and Bury 1983, Klinger *et al.* 1990, Beauchamp *et al.* 1998, Setser and Young 2000, Setser 2001, Gardner 2002, Grant and Wright 2002, Knauf 2002) have been largely inconclusive or cannot be readily applied across the species' range (*i.e.*, have limited inference space; Ratti and Garton 1994). Luckenbach and Bury (1983) reported that a pronounced reduction in flat-tailed horned lizard abundance around the Algodones Dunes had been anecdotally noted by scientists. Marked declines in herbaceous and perennial plants, arthropods, lizards and mammals in OHV-used areas compared with nearby control areas were also reported by

Luckenbach and Bury (1983). The declines, however, were for the Colorado Desert fringe-toed lizard (*Uma notata*) and beetles, and did not include flat-tailed horned lizards or ants. Similarly, the BLM (Knauf 2002) found that preliminary results from a comparative study on fringe-toed lizard abundance in OHV open and closed areas showed that abundance of fringe-toed lizards in the OHV-used areas of the Algodones Dunes was significantly lower than in areas closed to OHVs.

Research was conducted in creosote-dominated habitats in the Mojave Desert. Researchers compared reptile metrics (measures) between sites used differentially by OHVs and control sites (Bury *et al.* 1977). Bury *et al.* (1977) found a significant decrease in numbers of reptiles on ORV-used areas compared with numbers on control sites in the Mojave Desert. However, the highest number of desert horned lizards (*Phrynosoma platyrhinos*) on any one plot occurred on a moderately used OHV site. In research conducted by both Busack and Bury (1974) and Bury *et al.* (1977), there appeared to be an inverse relationship between increased use of OHVs and the abundance of lizards. Grant and Wright (2002) reported that OHV use was negatively correlated with flat-tailed horned lizard abundance on 12 plots on the Yuha Basin MA; however, the correlation was not statistically significant.

Research in the Ocotillo Wells SVRA found flat-tailed horned lizards at higher densities in non-sandy habitats than sandy habitats within the SVRA, which differed from most other research findings (Beauchamp *et al.* (1998). It was unclear, however, if flat-tailed horned lizards were found in these atypical habitat types because they are more plastic in habitat use than previously thought, these habitat types are more available in the Ocotillo Wells SVRA than other areas in which flat-tailed horned lizards have been studied, or as a response to OHV activity (Beauchamp *et al.* 1998). Beauchamp *et al.* (1998) stated that most of the sandy areas were heavily affected by OHV activity compared to the habitat types where flat-tailed horned lizards were more dense.

Setser and Young (2000) and Setser (2001) found flat-tailed horned lizards avoided OHV disturbed areas. However, there was no difference in flat-tailed horned lizard habitat use between areas within 10 m (33 ft) of OHV trails and sites further away from OHV trails (Setser and Young 2000, Setser 2001). Setser and Young (2000) and Setser (2001) concluded that (1) OHV use might render sites less suitable to flat-

tailed horned lizard use, because of the impacts of OHV activity on vegetation and soil characteristics; or (2) OHV trails occur on sites not preferred by flat-tailed horned lizards (*e.g.*, barren ground with no plants or rocks). However, Gardner (2002) suggested that OHV activity did not have an effect on flat-tailed horned lizards at two different areas in the Ocotillo Wells SVRA, on the basis of observations. Similarly, Grant and Wright (2002) found that abundance of flat-tailed horned lizards was more correlated with percentage of sand cover than level of OHV disturbance.

In conclusion, while there has been some research on the adverse effects of OHV activity on vegetation, soils, and flat-tailed horned lizards, its applicability to flat-tailed horned lizard populations is limited and unreliable, because of the lack of scientific rigor associated with the research designs. Additionally, the effects of OHV activity on flat-tailed horned lizard populations were not the primary research questions. Nevertheless, these studies have utility in generating hypotheses concerning variation in degree of OHV use and flat-tailed horned lizard abundance. At this time, we feel that the available studies do not collectively show that OHV activity causes declines in flat-tailed horned lizard populations in the four different geographic areas in the United States, or that adverse OHV impacts pose a significant threat to these populations. Management activities, including efforts to reduce conflicts with actions that impact flat-tailed horned lizard habitats, would be enhanced by focused research. Impacts of OHV activity on flat-tailed horned lizard populations should be studied using rigorous research designs to yield conclusions with high degrees of certainty (Ratti and Garton 1994) regarding the effects of OHV activity on flat-tailed horned lizard populations across the geographic areas previously mentioned.

The Management Strategy includes specific planning actions to "Maintain information exchange and coordination of monitoring, management activities, and research" and "Encourage and support research that will promote the conservation of [flat-tailed horned lizards] or desert ecosystems." Research priorities include techniques for assessing abundance, life history, demographics, and effects of activities (including OHV use and associated activities). The research is conducted by the appropriate land management agency. We expect that future studies on these research priorities will provide the Service with the information necessary

to reevaluate the status of the flat-tailed horned lizard and threats at a population level.

East Side of Imperial Valley (California)

This geographic area is fragmented north to south by the New Coachella Canal, which separates the East Mesa populations from peripheral Algodones Dunes populations. Additional fragmentation is caused by SR78, I-8, and the All American Canal running mostly in an east to west direction. On the east side of the Algodones Dunes, Ogilby Road further fragments the area, although to a far lesser degree, running from I-8 to SR78.

East Mesa MA

The East Mesa MA is 46,661 ha (115,300 ac) in size, and consists of 43,869 ha (108,400 ac) managed by signatories to the Management Strategy/CA, and 2,792 ha (6,900 ac) of private land. In 2001, BLM estimated that about 4.8 percent of the surface area in the southern portion of the East Mesa MA was covered with OHV tracks (Wright 2002). Our disturbance analysis showed that, between 1997 and 2002, the percentage area disturbed increased from 7.3 to 7.8, acreage of disturbance increased from 3,278 ha (8,099 ac) to 3,311 ha (8,181 ac), and length of roads increased from 224 km (140 mi) to 944 km (590 mi).

In 2001, BLM disturbance surveys detected about 5 percent of the surface area in the southern East Mesa MA to be affected by agriculture, mining, and geothermal activity (Wright 2002). A live bombing area controlled by the U.S. Navy, El Centro Naval Air Facility is located in the northernmost portion of the MA. Based on our review of currently available information, we believe the limited nature of the activities discussed above, do not individually or collectively pose a significant threat to the species and/or its habitat such that the species warrants listing under the Act.

Outside MA

The Imperial Sand Dunes Recreation Area is over 60,704 ha (150,000 ac) of habitat directly to the east of the East Mesa MA. Unrestricted OHV activity is permitted on more than 47,754 ha (118,000 ac) of the area, while about 12,950 ha (32,000 ac) are designated as a wilderness area, with no vehicle use allowed. Habitat has been degraded in the open area of the Imperial Sand Dunes Recreation Area by OHV activity and associated camping. The main impacts to the population in this area are most likely along the western periphery of the Dunes, where people

camp and ride OHVs to and from the Dunes and around camp, and to a lesser extent on the eastern periphery. The Dunes have heavy OHV use; however, surveys have shown that the Dunes have a low abundance of flat-tailed horned lizards (Turner *et al.* 1980, Luckenbach and Bury 1983, Wright 2002), even in the wilderness area of the Dunes (Luckenbach and Bury 1983, Wright, pers. comm. 2002).

There has been loss of flat-tailed horned lizard habitat on the west side of East Mesa due to geothermal development on both BLM and private land in an area termed the Known Geothermal Resource Area (KGRA). Historically, approximately 28,240 ha (69,760 ac) of potential flat-tailed horned lizard habitat were subject to geothermal development in the form of construction, maintenance and operation of geothermal powerplants within the KGRA. Ormesa LLC currently operates six geothermal power plants and 80 geothermal wells on nearly 5,463 ha (13,500 ac) of BLM land in the KGRA (D. Campbell, Ormesa LLC Plant Manager, *in litt.* 2002).

Based on our review of currently available information, we believe the limited nature of the geothermal activities discussed above and their location on the periphery of East Mesa, do not constitute a significant threat to the species and/or its habitat such that the species warrants listing under the Act.

Yuma Desert (Arizona)

The historic range of the species in Arizona was estimated at approximately 82,360 ha (203,520 ac) by Hodges (1997), and 89,455 ha (221,043 ac) by the AGFD (Duane Shroufe, AGFD Director, *in litt.* 2002). By 1997, Hodges (1997) estimated about 69 percent (56,780 ha [140,301 ac]) of the species' historic range remained. Habitat losses resulted from conversion to agriculture, urbanization, and military use. AGFD similarly estimates about 72 percent (64,283 ha [158,844 ac]) of the historic range currently remains in Arizona. AGFD reported that approximately 3.7 percent of historic habitat has been lost since 1996. Conversion of habitat to agriculture has been the primary land use responsible for the loss of habitat in Arizona, eliminating about 17.5 percent of historic habitat by 1997. Conversion of habitat for urban and military use accounted for the loss of approximately 11.1 percent and 2.5 percent of historic habitat, respectively (Hodges 1997). The 1993 proposed rule noted that urban and agricultural expansion into flat-tailed horned lizard habitat on the part of the communities of San Luis, Yuma,

and the Foothills was a threat. While the expansion of these communities will convert some flat-tailed horned lizard habitat, 77 percent of the remaining habitat is within the MA and 87 percent is managed by signatories to the CA. The remaining private land subject to development is adjacent to existing urban and agricultural areas and is fragmented. In addition, the potential development of this land will not fragment or degrade the contiguous habitat remaining in the Yuma Desert MA, which comprises the majority of the flat-tailed horned lizard habitat in Arizona. For these reasons, the remaining private land does not constitute a significant portion of the range of the flat-tailed horned lizard in this geographic area.

Yuma Desert MA

Of the current habitat, 50,384 ha (124,500 ac) are within the MA. Recently, 6,273 ha (15,500 ac) of suitable habitat owned by the State of Arizona within the Yuma Desert MA was acquired by the Department of Defense, a signatory to the Conservation Agreement. Consequently, the Management Area is completely owned by signatories to the Management Strategy.

A proposal for an Area Service Highway on the west side of the MA would reduce the MA by about 405 ha (1,000 ac), because it would revise the MA boundary. The Area Service Highway would further fragment habitat on the west side of the MA by dividing it from the adjoining habitat outside the MA. Because the Area Service Highway will only contract the MA boundary on one side by less than 1 percent, leaving the habitat in the MA contiguous, this impact does not constitute a significant threat to the species or its habitat such that the species warrants listing under the Act.

The Yuma Desert MA is relatively undisturbed compared to the Management Areas in California. Rorabaugh *et al.* (2002) randomly surveyed the Management Area to assess human disturbance and found the most common form was off-road-vehicle tracks, which covered 2.9 to 3.4 percent of the surface area. The Marine Corps Air Station-Yuma has a 66 ha (162 ac) target area called the "Moving Sands Target" within the MA. Based on our review of currently available information, we believe the limited nature of the activities discussed above, do not individually or collectively pose a significant threat to the species and/or its habitat such that the species warrants listing under the Act.

Outside MA

Currently, there is an estimated 14,876 ha (36,758 ac) of flat-tailed horned lizard habitat outside the MA. Of this habitat, 8,376 ha (20,697 ac) are owned by either the Arizona State Land Department, private interests, or the Cocopah Tribe. No immediate plans for development of this land are known; however, AGFD considers the land to be vulnerable to development. The other 44 percent is owned primarily by the BOR, which is a signatory agency of the Conservation Agreement, so the land is less likely to be developed (Shroufe in litt. 2002). However, approximately 6,475 ha (16,000 ac) of habitat managed by the BOR are within the "5-Mile Zone" of the international border with Mexico, which has been identified by the City of San Luis in their General Management Plan for potential development (Robert Kritzstein, BLM, *in litt.* 2002). These lands do not comprise a significant percentage of the flat-tailed horned lizard habitat in this geographic area, and the potential development of this land will not fragment or degrade the contiguous habitat remaining in the Yuma Desert MA. Therefore, these activities do not constitute a significant threat to the species or its habitat such that the species warrants listing under the Act.

Invasion of non-native plants into the desert systems has been noted as a threat (Hodges 1997, Shroufe in litt. 2002). Non-native species that have become prevalent in certain areas of the Sonoran Desert include *Schismus barbatus* (Mediterranean grass) and *Brassica* spp. (mustard). In Arizona, high densities of Mediterranean grass currently appear limited to disturbed areas in proximity to Yuma (Shroufe *in litt.* 2002). These species can become dense and effectively stabilize substrates that were once loose sand, likely reducing flat-tailed horned lizard habitat quality. Increased fuel load for fire is also a concern with these non-native plant species, and the effects of a new fire regime on the desert ecosystems and ultimately the flat-tailed horned lizard is unknown. Because of the limited extent to which non-native plants have established themselves in flat-tailed horned lizard habitat in this geographic area, this threat does not warrant listing the species under the Act.

Mexico

At this time, much less is known about the threats of habitat loss and modification in Mexico. Urban and agricultural farming are the most immediate threats to the species in

Mexico (CEDO 2001). Considerable habitat loss has occurred in the Mexicali Valley in Baja California Norte where urban and agricultural development extends from Mexicali to the Colorado River (Johnson and Spicer 1985, Foreman 1997). This development from Mexicali to the Colorado River together with the All American Canal, has isolated flat-tailed horned lizard habitat on the Andrade Mesa in Mexico from East Mesa in the U.S. and also from the Yuha Desert in Mexico. Habitat fragmentation also has resulted from a variety of human activities, such as the creation of roads and highways. Other potential threats to the habitat of the flat-tailed horned lizard include invasion of non-native plants such as Russian thistle (*Salsola kali*), mustards (*Brassica* spp.), and salt cedar; cattle grazing in the Gran Desierto/Pinacate region; and the increasing use of OHVs in sandy plains, dunes, and back-roads (CEDO 2001). However, the effects of these threats have not been adequately documented (CEDO 2001).

In conclusion, after considering all the current available information, we have determined that the threats identified under Factor A are not significant enough to conclude that the flat-tailed horned lizard is likely to become endangered throughout all or a significant portion of its range in the foreseeable future. However, the Coachella Valley has experienced a significant amount of habitat curtailment and there is the potential for significant habitat destruction in the immediate future, because of the predominant private ownership of habitat and the rate of development in the Coachella Valley. The available data do not suggest that habitat modification by OHV use threatens the flat-tailed horned lizard on the west side of the Salton Sea/Imperial Valley and east side of the Imperial Valley. We conclude that the Arizona population is not likely to become endangered within the foreseeable future, because the low percentage of lands in private ownership makes for a low degree of threat from development. Further, OHV use has not been shown to be a threat to populations here and this geographic area experiences a relatively low level of OHV activity.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

In the past, scientists have reported on collection of flat-tailed horned lizards. The most noted example was the collection of 381 flat-tailed horned lizards along an 11.3 km (7 mi) stretch of SR78 between the Coachella and East

Highline Canals between 1961 to 1964 (Bolster and Nicol 1989). Norris (1949) noted that near Palm Springs the capture of flat-tailed horned lizards was not a common occurrence, and that collecting was good if it yielded two flat-tailed horned lizards in one day. Collection of flat-tailed horned lizards has not been reported since 1964. Because of the difficulty in locating these lizards, due to their cryptic coloration and tendency to remain motionless when approached, no threat of overutilization of this species is known or expected in the future on either public or private lands. Collection for the pet trade has not been identified as a threat to the species.

C. Disease or Predation

While disease is not known to be a threat to flat-tailed horned lizard persistence, flat-tailed horned lizards are depredated by a variety of predators. Flat-tailed horned lizard predators include loggerhead shrikes, round-tailed ground squirrels, grasshopper mice, snakes, canids, American kestrels, common ravens, and burrowing owls (Muth and Fisher 1992, Duncan *et al.* 1994, Young and Young 2000). Round-tailed ground squirrels were documented as the main predator of flat-tailed horned lizards during research conducted in California (N = 19; Muth and Fisher 1992) and Arizona (N = 26; Young and Young 2000), with loggerhead shrikes being the second most common predator. The 1993 proposed rule noted that Bolster and Nicol (1989) suggested that predation of flat-tailed horned lizards near agricultural areas and urban areas may be elevated because of the presence of house cats in urban areas and the abundance of loggerhead shrikes and other predatory birds in croplands. We were unable to find any documentation suggesting that house cats increased mortality rates for flat-tailed horned lizards adjacent to urban areas. Increased predation rates on flat-tailed horned lizards by loggerhead shrikes and American kestrels have been reported in localized areas where human-provided perches (*e.g.*, power lines or palm trees) have been used by shrikes and kestrels as points from which to hunt (Young and Young 2000, Barrows pers. comm. 2002). Despite this, available evidence does not suggest that predation has caused a significant threat to the persistence of the species in any part of its range, public or private.

D. The Inadequacy of Existing Regulatory Mechanisms

Existing mechanisms that could provide some protection for the flat-tailed horned lizard include the following: (1) State laws, including the California Endangered Species Act (CESA) and CEQA, and the Arizona State List of Wildlife of Special Concern and Arizona Game and Fish Commission Order 43; (2) Federal laws and regulations, including the National Environmental Policy Act (NEPA), the Endangered Species Act in those cases where this species occurs in habitat occupied by other listed species, and the Fish and Wildlife Coordination Act; (3) local land use processes and ordinances; (4) the Flat-Tailed Horned Lizard Rangewide Management Strategy and associated Conservation Agreement; (5) regional planning efforts such as the Coachella Valley Multi-Species Habitat Conservation Plan; and (6) foreign laws and regulations in Mexico, including the Mexican Endangered Species List.

The State of California considers the flat-tailed horned lizard a species of special concern, but it is not listed as threatened or endangered under CESA. Consequently, the species receives no protection under CESA. In California, the management of Anza-Borrego Desert State Park is favorable for the conservation of the flat-tailed horned lizard because of the emphasis placed on resource protection and regulations limiting OHV activity to designated trails.

The States of California and Arizona prohibit the collection of flat-tailed horned lizards pursuant to California Code of Regulations, Title 14, Section 5.60, and Arizona Game and Fish Commission Order 43, except by permit. The AGFD has included the species on the draft List of Wildlife of Special Concern in Arizona, which Arizona uses to prioritize species for planning and funding purposes. No state regulations in Arizona protect the habitat of this species at this time.

CEQA requires review of any project that is undertaken, funded, or permitted by a State or local governmental agency. If a project with potential impacts on the flat-tailed horned lizard were reviewed, CDFG personnel could determine that, although not listed, the lizard is a *de facto* endangered, threatened, or rare species under section 15380 of CEQA. Once significant effects are identified, the lead agency has the option of requiring mitigation for effects through changes in the project or deciding that overriding considerations make mitigation infeasible (CEQA Sec. 21002). In the latter case, projects may

be approved that cause significant environmental damage, such as destruction of listed endangered species or their habitat. Protection of listed species through CEQA is, therefore, dependent upon the discretion of the agency involved.

The flat-tailed horned lizard may receive some level of protection through the Act because of overlapping ranges or proximity to other federally listed species in California. These species include Coachella Valley fringe-toed lizard (*Uma inornata*), Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), Pierson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*), bighorn sheep in the Peninsular Ranges (*Ovis canadensis*), and desert tortoise (*Gopherus agassizii*).

The federally threatened Coachella Valley fringe-toed lizard is restricted to the Coachella Valley, but its distribution overlaps with the northern portion of the flat-tailed horned lizard's range in the Coachella Valley. However, the flat-tailed horned lizard may use additional habitat within the Coachella Valley in which the fringe-toed lizard does not occur. In addition, the majority of suitable habitat in the Coachella Valley in which both the fringe-toed lizard and flat-tailed horned lizard occur is not protected. Only 2,150 ha (5,314 ac) of suitable flat-tailed horned lizard habitat is protected as part of the Coachella Valley Fringe-toed Lizard Preserve System (Coachella Valley Mountains Conservancy 2001). The federally endangered Coachella Valley milk-vetch also co-occurs with the flat-tailed horned lizard only within the Coachella Valley and offers no additional conservation beyond that provided by the fringe-toed lizard. However, projects in which there is a Federal action that may affect one or both these species are subject to Section 7 consultation with the Service under the Act. Section 7 consultations on the Coachella Valley fringe-toed lizard and/or Coachella Valley milk-vetch may indirectly provide ways to avoid or minimize adverse impacts to the flat-tailed horned lizard in addition to the targeted species.

The federally endangered bighorn sheep of the Peninsular Ranges and flat-tailed horned lizards may overlap in habitat use at the edge of both of their ranges, where there is suitable habitat for both species in close proximity to the toe of slope of the mountains. However, the benefit to the flat-tailed horned lizard provided by the protection of bighorn sheep in the Peninsular Ranges is inconsequential.

The federally endangered Pierson's milk-vetch is restricted to the Algodones

Dunes, in which the flat-tailed horned lizard occurs in low numbers (Wright 2002), therefore offering little protection to the flat-tailed horned lizard. The range of the federally threatened desert tortoise may marginally overlap with the flat-tailed horned lizard in certain parts of the Coachella Valley, near the east side of the Salton Sea and the east side of the Algodones Dunes; however, no conservation value to the flat-tailed horned lizard should be expected.

Through NEPA and the Fish and Wildlife Coordination Act, we may recommend discretionary conservation measures to avoid, minimize, and offset impacts to fish and wildlife resources resulting from Federal projects and water development projects authorized by the U.S. Army Corps of Engineers.

The Management Strategy/CA has been the main regulatory mechanism established for the conservation of the flat-tailed horned lizard throughout its range. The Management Strategy/CA was signed in 1997 and included an extensive list of planning actions developed as recommendations to management agencies to ensure population viability within each MA (Foreman 1997). A caveat of the Management Strategy, however, was that the implementation of these actions is subject to availability of funds and compliance with all applicable regulations. In addition, the CA is a voluntary agreement to implement the Management Strategy; a signatory agency may withdraw from the CA after giving the other signatories 60 days' notice.

Some of the planning actions have not yet been implemented. The planning action to "limit vehicle access and limit route proliferation within MAs," has not been achieved. No action has been taken regarding the planning subactions to designate all routes either open, closed, or limited; and to reduce open and limited route density in MAs (Shroufe in litt. 2002, Wright in litt. 2002), despite these subactions' being "priority 1" actions. Priority 1 actions are defined in the Management Strategy (Foreman 1997) as "action[s] that must be taken in the near term to conserve the species and prevent irreversible population declines." The lack of enforcement to ensure closed and limited use areas is the primary deficiency of Management Strategy implementation. Should future research demonstrate that OHV use poses a significant threat to the species, these deficiencies may need to be corrected to avoid the species being listed in the future.

While some important planning actions in the Management Strategy have not yet been implemented, the

actions that have been and are being implemented do provide protection for the flat-tailed horned lizard and its habitat and have contributed to reductions in specific threats to the species. Most planning actions listed in the Management Strategy were implemented between the period of May 1997 and June 2002 (see our response to comment 3). The Management Strategy actions that contributed the most to the conservation of flat-tailed horned lizards were the exclusion of pesticide spraying within MAs, exclusion of competitive recreational events within MAs, efforts to develop and implement a monitoring strategy, and compensation for project impacts to flat-tailed horned lizard habitat.

The actions that have been and are being implemented on the MAs do provide protection for the flat-tailed horned lizard and its habitat in each of the four geographic areas, except the Coachella Valley, in which the flat-tailed horned lizard occurs. Additionally, the Management Strategy has contributed to reductions in specific threats to the species, and to the viability of the flat-tailed horned lizard in each of the five MAs and ultimately the four geographic areas. Current available information does not indicate that the viability of the flat-tailed horned lizard in each of the geographic areas in which it occurs, with the exception of the Coachella Valley, is dependent on full implementation of the Management Strategy.

Regional Habitat Conservation Plans in preparation by the Coachella Valley Association of Governments and the Agua Caliente Band of Cahuilla Indians would conserve a yet-to-be-determined amount of flat-tailed horned lizard habitat, leaving the rest subject to development. These Habitat Conservation Plans are in progress and are subject to approval in the future; therefore, their completion and implementation cannot be relied upon for conservation purposes.

The species is listed in the official Mexican Endangered Species List as threatened (CEDO 2001). Consequently, the species is protected from collection, sale, and commerce, and its habitat is afforded special protection in Mexico. The majority (about 60 percent) of the species' range in Mexico lies within two Mexican Federal natural protected areas: The Upper Gulf of California and Colorado Delta Biosphere Reserve, and the Pinacate and Gran Desierto de Altar Biosphere Reserve (CEDO 2001). The National Park of Pinacate is an area administered by the Mexican government with use restrictions similar to those of a national park in the United

States. However, the boundaries are not well established, and enforcement of regulations is minimal.

In conclusion, currently available information does not indicate that inadequate regulatory mechanisms necessitate listing the species under the Act. However, if flat-tailed horned lizard populations are found to be declining in the future, it would be prudent to revisit the adequacy of the regulatory mechanisms mentioned above, including the Management Strategy.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Pesticide spraying associated with the Curlytop Virus Control Program to control the beet leafhopper (*Circulifer tenellus*) (Curlytop Program) on the east and west sides of the Salton Sea and Imperial Valley, is a threat because of its effects on the ant prey base for flat-tailed horned lizards. In the 1993 proposed rule, this threat was identified as having an impact mainly the East Mesa and Yuha Desert. Since the proposed rule, the threat from pesticide spraying has been reduced by a BLM Record of Decision on the Curlytop Program in 1997 and 2002 to prohibit pesticide spraying within MAs. The Curlytop Program or a similar program has not been conducted in the Arizona geographic area of the species range (Minch, Arizona Department of Food and Agriculture, pers. comm. 2002). However, the Curlytop Program persists outside MAs and its direct, and indirect effects on flat-tailed horned lizard populations outside the MAs are not known in any detail. Foreman (1997) stated that the effects of applying broad-spectrum insecticide to desert scrub communities over many years are potentially many and complex. Pesticide/herbicide drift from croplands also has the potential to adversely affect plant communities adjacent to agricultural areas (Foreman 1997).

The California Department of Food and Agriculture's Joint Environmental Assessment proposed that the Curlytop Program is likely to have no direct adverse effect to flat-tailed horned lizard populations, because studies (Hall and Clark 1982, Peterle and Giles 1964, and Giles 1970; all cited in CDFA 2000) have shown various lizard species have a high tolerance of malathion. However, indirect effects of the Curlytop Program to ant populations were noted as being a concern in the associated Biological Opinion (11430-2002-7FCC-2365.1). The Curlytop Program included monitoring of ant colonies in 1991. Malathion was found to negatively affect ant colonies temporarily;

however, ant colonies rapidly recovered (Peterson *in litt.* 1991). The Biological Opinion estimated the program could affect up to 141,643 ha (350,000 ac) of flat-tailed horned lizard habitat outside the MAs; however, most treatments are localized.

Historically, treatments in the Imperial Valley are necessary 1 out of every 3 years, and the area treated may vary from 50 to a few thousand hectares (100 to several thousand acres) (CDFA 2000). The most recent treatments in the Imperial Valley were in 1998 and 1991, when 2,388 ha (5,900 ac) and 2,891 ha (7,143 ac), respectively, of flat-tailed horned lizard habitat were sprayed (CDFA 2000).

Because of the limited extent of area sprayed, the prohibition of spraying on MAs, the long intervals between applications, and the apparently temporary nature of the adverse effects, we do not believe the Curlytop Program to be a threat to the species throughout all or a significant portion of its range to the extent that the flat-tailed horned lizard would be likely to become in danger of extinction in the foreseeable future. However, because the study conducted by CDFA (mentioned earlier) was cursory, we recommend further monitoring of ant colonies and flat-tailed horned lizard populations in treated and adjacent areas.

The potential adverse impacts associated with drought were mentioned in the 1993 proposed rule. The threat that localized areas may experience long-term drought resulting in decreased local flat-tailed horned lizard populations still exists.

In our 1993 proposal to list the flat-tailed horned lizard as threatened, we identified numerous potential threats to the species and its habitat as the rationale for believing that the listing of the flat-tailed horned lizard was warranted. In this withdrawal, we have spoken directly to many of the threats discussed in our 1993 proposal in addition to other information that has become available since the publication of that proposal. We did not, however, speak directly to all threats because we believe, based on our review of currently available and credible information, that the threats not directly discussed here no longer pose a significant threat to the species and/or its habitat individually or in combination such that the species warrants listing under the Act.

Finding

The species was proposed as threatened in 1993 because much of the habitat of this species was reported to have been lost, fragmented, or degraded

by human use; and relative densities were reported to have declined in at least one of five optimal habitat areas. Much of the species' habitat has been lost, fragmented, or degraded, but available data concerning population abundance, trends, and threats do not indicate that because of this habitat loss and degradation the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

The information on population trends presented in the 1993 proposed rule was derived in part from scat count data collected between 1979 and 1991. We no longer consider the use of these scat counts reliable for this purpose, as previously discussed in this rule. Therefore, we do not consider scat counts useful or reliable indicators of population abundance. Currently available data do not suggest that flat-tailed horned lizard populations are declining in any of the geographic areas.

On the basis of the analysis of the five factors for the four different geographic areas in which the flat-tailed horned lizard occurs in the U.S., we conclude that the species is in danger of extirpation within the Coachella Valley, because of the large amount of habitat loss, the drastic curtailment of its range, a high degree of fragmentation of remaining habitat, and the threat of habitat loss in the foreseeable future.

While we have determined that the population of flat-tailed horned lizards in the Coachella Valley is endangered with extinction within the foreseeable future, we have concluded that the current distribution of the flat-tailed horned lizard in the Coachella Valley does not constitute a significant portion of the species' range. We have made this determination based on the following: (1) Small extent of flat-tailed horned lizard habitat in the Coachella Valley relative to the overall range of the species (approximately 3 percent of the range in the U.S., and roughly 1 percent

of the species range overall, including Mexico); and (2) high level of habitat fragmentation. In addition, current scientific evidence does not suggest that the Coachella Valley population is genetically, behaviorally, or ecologically unique; nor does it appear to be a large population of flat-tailed horned lizards or contribute individuals to other geographic areas through emigration.

Currently, the only geographic areas that have relatively large amounts of flat-tailed horned lizard habitat on private lands are the Coachella Valley and the west side of Salton Sea/Imperial Valley. The Coachella Valley is discussed above. Currently available information does not suggest that development of private lands on the west side of Salton Sea/Imperial Valley poses a threat in the foreseeable future. The only towns in this geographic area are Borrego Springs, Ocotillo, Ocotillo Wells, and Salton City. The largest of these towns is Borrego Springs with a population of approximately 3,000 people. It is likely the size of these towns will not change significantly in the foreseeable future. Therefore, we conclude that the threat of development of private lands in areas other than the Coachella Valley is not significant enough to endanger the species within the foreseeable future throughout a significant portion of its range.

In addition, currently available data do not suggest that the flat-tailed horned lizard is likely to become an endangered species within the foreseeable future on the west side of the Salton Sea/Imperial Valley and east side of Imperial Valley. The primary potential threat to the flat-tailed horned lizard identified for these areas is OHV use. As discussed under Factor A in the "Summary of Factors Affecting the Species" section, we believe the available studies do not collectively show that OHV activity causes declines in flat-tailed horned lizard populations, or that adverse OHV

impacts pose a significant threat to these populations.

We conclude the Arizona population is not likely to become endangered within the foreseeable future, because of the relatively low level of OHV activity in this geographic area and the low degree of threats from development due to the low percentage of lands in private ownership.

Following our above analysis and discussion, we have determined that the action of listing the flat-tailed horned lizard as threatened throughout its range as proposed in 1993 is not warranted. We have made this determination because the threats to the species, as identified in the proposed rule, are not as significant as earlier believed, and current available data do not indicate that the threats to the species and its habitat are likely to endanger the species in the foreseeable future throughout all or a significant portion of its range. Consequently, we withdraw our 1993 proposal to list the flat-tailed horned lizard as threatened throughout its range.

References Cited

A complete list of all references cited is available at the Carlsbad Fish and Wildlife Office (see **ADDRESSES** above).

Author

The primary author of this document is the Carlsbad Fish and Wildlife Office (see **ADDRESSES** above).

Authority

The authority for this action is section 4(b)(6)(B)(ii) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: December 24, 2002.

Steve Williams,

Director, U.S. Fish and Wildlife Service.

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