



United States Department of the Interior

Fish and Wildlife Service Arizona Ecological Services Office

9828 North 31st Avenue

Phoenix, Arizona 85051

Telephone: (602) 242-0210 Fax: (602) 242-2513



AESO/SE
02EAAZ00-2013-F-0238 (R1)

December 9, 2016

Memorandum

To: Field Manager, Bureau of Land Management, Tucson Office, Tucson, Arizona

From: Field Supervisor

Subject: Reinitiation of Informal Consultation Pursuant to Section 7 of the Endangered Species Act and 50 CFR 402.13 for the Keystone Peak Prescribed Fire

Thank you for your agency's correspondence of June 8, 2016, requesting reinitiation of informal consultation on the proposed Keystone Peak Prescribed Fire (Consultation Number 02EAAZ00-2013-I-0238; concurrence letter dated August 16, 2013). This request for reinitiation is triggered by a change in the proposed action as outlined in your June 8, 2016, correspondence and was made pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Changes in the proposed action are being made following further analysis by your staff related to the effects of the project to the Chiricahua leopard frog and its designated critical habitat. As a result, the Bureau of Land Management (BLM) has determined that the use of sediment traps to protect Chiricahua leopard frog habitat (stock tanks) would be ineffective. In addition, the proposed action has been changed with regard to the extent of the proposed prescribed burn (increased from 2,670 to 3,118 acres) and has increased levels of shin dagger removal to further the effectiveness of the project.

You have determined that only the threatened Chiricahua leopard frog (*Lithobates chiricahuensis*) and its designated critical habitat may be adversely affected by the proposed changes in the action and it is this species and its designated critical habitat that are the subjects of this reinitiation, formal consultation, and the following Biological Opinion (BO). Therefore, our previous analyses and conclusions stand with regard to the other listed species included in the original concurrence letter dated August 16, 2013 (Consultation Number 02EAAZ00-2013-I-0238). The BLM determined that the change in the proposed action (increased target percentage for shin dagger) may affect, but would not adversely affect the endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*). We have considered this change and find that the extent and types of effects on the lesser long-nosed bat have not changed with regard to this species

when compared to the existing concurrence letter. Therefore, the original concurrence for the lesser long-nosed bat remains valid and will not be addressed further in this reinitiation.

This BO is based on information provided in your request for reinitiation dated June 8, 2016; your June 2016 Biological Evaluation (BE); the original August 16, 2013 concurrence letter (Consultation Number 02EAAZ00-2013-I-0238); conversations and electronic correspondence with your staff; and other sources of information. Literature cited in this BO is not a complete bibliography of all literature available on the species addressed or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

CONSULTATION HISTORY

Previous applicable section 7 consultations related to the proposed action include:

- Informal consultation pursuant to Section 7 of the Endangered Species Act and 50 CFR 402.13 for the Keystone Peak Prescribed Fire (02EAAZ00-2013-I-0238);
- BLM Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (02-21-03-F-0210)
- Phoenix Resource Management Plan and Environmental Impact Statement (2-21-88-F-167)
- Phoenix District Portion of the Eastern Arizona Grazing Environmental Impact Statement (2-21-96-F-422)
- Gila District Grazing Program (22410-2006-F-0414)
- Altar Valley Fire Management Plan (22410-2005-F-0002)

The Keystone Peak prescribed fire is being conducted under the program-level BLM Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management consultation (02-21-03-F-0210) and is consistent with this program. Your request for project-specific section 7 consultation for the Keystone Peak prescribed fire is consistent with the existing Biological Opinion (BO) for that consultation.

Project-specific consultation actions related to the Keystone Peak prescribed fire include:

- August 16, 2013: The U.S. Fish and Wildlife Service (FWS) provided the BLM with a concurrence letter requested under informal consultation for the Keystone Peak prescribed fire (Consultation Number 02EAAZ00-2013-I-0238).
- June 8, 2016: The BLM requested the reinitiation of the Keystone Peak prescribed fire triggered by additional analysis of information related to the threatened Chiricahua leopard frog and its designated critical habitat that resulted in a proposed increase in the extent of the prescribed burn and an increase in the target percentage for shin dagger.
- July 7, 2016: FWS requested and received clarification on the scope of the reinitiation from BLM staff.
- August 23, 2016: FWS provided the BLM a draft BO for review and comment.
- November 22, 2016: BLM accepts draft BO and requests finalization.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

With the exception of the changes outlined in the BLM's June 8, 2016 request for reinitiation, the proposed action remains the same as evaluated within the FWS's August 16, 2013 concurrence letter related to the original informal section 7 consultation (Consultation #02EAAZ00-2013-I-0238) and repeated in the June 2016 BLM BE and these documents are incorporated herein by reference.

Changes to the Proposed Action

The BLM, in coordination with the Altar Valley Conservation Alliance, proposes the implementation of the Keystone Peak prescribed fire treatment. The extent of the Keystone Peak prescribed burn has increased from 2,670 acres to 3,118 acres of mixed land ownership in the Sierrita Mountains, located approximately 25 miles south southwest of Tucson (see Figure 1 of the June 2016 BE). Of the total acres, 1,055, 1,212, and 851 acres are under BLM, private, and state ownership, respectively. This represents an increase of 448 acres from that proposed in the original 2013 section 7 consultation (see Figure 2 of the June 2016 BE).

The prescribed fire treatment will be implemented to reduce the fuel loading adjacent to the Keystone Peak Communication Site, reduce shrub canopy cover, reduce cover of shin dagger (*Agave schottii*), increase cover and composition of native perennial grasses, and reintroduce fire back into the ecosystem." One change to the proposed action is related to the target percentage for the control of shin dagger. Under the original section 7 consultation, control of shin dagger was restricted to less than 50 percent for this potential forage species of the lesser long-nosed bat (see BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management; BLM 2004). However, the BLM has determined that this restriction would likely reduce the effectiveness of this prescribed fire treatment on the hydrologic function and restoration of grasslands in the burned area. Shin dagger is not a major forage resource for lesser long-nosed bats and the vegetation treatment is projected to have a beneficial effect on the springs and stock tanks in ephemeral drainages that support Chiricahua leopard frogs.

In the original section 7 consultation for the Keystone Peak prescribed burn, BLM proposed a conservation measure for the Chiricahua leopard frog that included the use of sediment traps to protect Chiricahua leopard frog habitat (stock ponds) from post-burn sedimentation. BLM hydrology and fire staff determined that the conditions in the drainages within the burn perimeter would not be conducive for effectively collecting sediment to prevent the filling of stock ponds. In addition, the BLM learned that these stock ponds are periodically cleaned out with heavy equipment to provide open water for cattle. Take of Chiricahua leopard frogs is covered by a special 4(d) rule associated with the Federal listing of this species if the procedures outlined in the rule are implemented (see 67 FR 40790 and 77 FR 16388). Based on this new information, the BLM has reconsidered this conservation measure and the effects to the Chiricahua leopard frog from this project.

CONSERVATION MEASURES

The following excerpt is from the BLM Statewide LUP Amendment for Fire, Fuels, and Air Quality Management FONSI and EA, pages 2-3 through 2-6 (BLM 2004): For all fire management activities (wildfire suppression, wildland fire use, prescribed fire, and mechanical, chemical, and biological vegetation treatments), the following Conservation Measures will be implemented as part of the proposed action. These Conservation Measures are intended to provide Statewide consistency in reducing the effects of fire management actions on Federally threatened, endangered, proposed, and candidate (“Federally protected”) species.

Appendix A of the June 2016 BE contains excerpts from the BLM Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management (BLM 2004) of all applicable conservation measures for the actions and species covered under the proposed action. The Keystone Peak prescribed fire is being conducted under this program-level consultation and is consistent with the program. As in the original section 7 consultation, these conservation measures are mandatory for the Keystone Peak prescribed fire, and are incorporated by reference.

However, as described above, the BLM does not intend to use sediment traps above stock ponds for this project. The use of sediment traps was included in the original informal consultation for this project per the following conservation measure:

“Install sediment traps, as determined by a Resource Advisor or qualified biologist approved by the BLM, upstream of tanks and ponds occupied by Chiricahua leopard frogs in order to minimize the amount of ash and sediment entering the water. Consultation with a qualified biologist during the planning phase will aid in determining sediment trap installation requirements.”

The rationale for not including sediment traps as a conservation measure is presented in the BLM’s June 8, 2016, request for reinitiation of section 7 consultation and is based on the following:

“The use of sediment control along slope and drainages was considered for prevention of excess sediment entering stock ponds. However, it was determined by BLM staff that the high background rate of erosion, given the plant community type and steepness of slopes, would not be effective in preventing sediment from filling stock tanks.”

Stock tanks that are perennial and dredged on a regular basis are located in ephemeral drainages with high sediment loads. Due to post-fire increase in sediment load for the first two growing season, additional sediment removal may be required. Stock tanks at risk of excess sedimentation following burning will be inventoried for maximum and existing surface area. Current maximum depth will be measured as part of the pond inventory and evaluation. Stock tanks that fill with excess sediment from large storm events that cause washes to move sediment to tanks will be inspected and if a stock tank has at least half the surface area filled with sediment, it will be excavated. After two years, the regular stock pond maintenance regime would commence on a similar schedule as before the prescribed fire. All stock pond excavation activities on non-

federal lands will conform with the special 4(d) rule associated with the listing of the Chiricahua leopard frog (see 77 FR 16388).

The upper portions of Ox Frame and other major canyons with down-gradient springs/seeps shall be burned with backing fire since the ignition operations will start on the uphill side of the burn unit. Blacklining operations will occur around ponds during early evening and into nighttime hours to take advantage of lower temperatures and higher humidity's. Fire behavior resulting from the treatment is anticipated to result in a mosaic burn pattern in the upper portions of the canyon. Patches of unburned vegetation should allow for decreased amounts of post-burn water and sediment runoff. This mosaic pattern is expected for all the canyons that feed stock ponds.

STATUS OF THE SPECIES

The status of the Chiricahua leopard frog and designated critical habitat has not changed since our August 16, 2013 concurrence letter and that information is incorporated herein by reference (Consultation Number 02EAAZ00-2013-I-0238). However, at that time, Ox Frame Canyon, including Ox Frame Tank, was excluded from the project in order to protect Chiricahua leopard frog critical habitat. Based on the BLM's subsequent evaluation of effects to Chiricahua leopard frog and critical habitat, Ox Frame Canyon including Ox Frame Tank is now included in the proposed prescribe burn boundary. Therefore, this area of designated Chiricahua leopard frog critical habitat is included in the revised proposed action. North and South Twin Tanks (on Arizona State Land Department (ASLD)-managed lands) are the only other tanks within designated critical habitat in the vicinity of the project. These Twin Tanks are fed by a well and are not in any of the watersheds to be treated under the proposed action.

Designated critical habitat in recovery unit 1 for the Chiricahua leopard frog exists within the Keystone Peak prescribed fire boundary, and is described below (see 77 FR 16348).

Recovery Unit 1 (Tumacacori-Atascosa-Pajarito Mountains, Arizona and Mexico) Twin Tanks and Ox Frame Tank Unit

This unit consists of 1.3 acres of lands owned by the ASLD and 0.4 acre of private lands in the Sierrita Mountains, Pima County, Arizona. Twin Tanks is on lands owned and managed by the ASLD and consists of two tanks in proximity to each other as well as a drainage running between them. Ox Frame Tank is on private lands. Occupancy of these livestock tanks at the time of listing was unknown, as they were not surveyed for frogs until 2007. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because these sites are important breeding sites for recovery. Twin Tanks held more than 1,000 frogs in 2008, and is a robust breeding population. Ox Frame and Twin tanks are too far apart (4.3 miles overland) across rugged terrain to expect frogs to move between these sites. Hence, these tanks are considered to be isolated populations.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, state, or private actions in the action area; the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation; and the impact of state and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform from which to assess the effects of the action now under consultation.

Description of the Action Area

The prescribed burn treatment unit is located approximately 25 miles south southwest of Tucson and 10 miles west of Green Valley, in Pima County, Arizona (see Figure 1 of the June 2016 BE). The treatment unit is characterized by high mountains dissected by deep canyons within the drainages of Oak Frame, Tank, and White Iron Canyons in the Sierrita Mountains (see Figure 2 of the June 2016 BE). Topography is extremely rough, with the high point of Keystone Peak at 6,120 feet above mean sea level, and the lowest part of the treatment unit is 4,202 feet at the southeast boundary near South Tank. A complete description of the vegetation communities within the action area are included in our August 16, 2013 concurrence letter and are incorporated herein by reference. The action area for the proposed action is considered to be the area within the burn perimeter (see Figure 2 of the June 2016 BE) and the downstream portion of any drainages include within the burn perimeter that could be affected by increased flow of ash or sediments.

Status of the Chiricahua Leopard Frog in the Action Area

A survey conducted in June 2013 (Caldwell and Kahrs 2013) documented Chiricahua leopard frogs at Ox Frame Tank, the only area of Chiricahua leopard frog critical habitat within the burn boundary. Other perennial aquatic habitats within the fire boundary include Tank 1, Tank 19 (aka, Kiddoo), Tank 20 (aka, Black Hawk), Keystone Tank (aka, Powers), Black Hawk Tank (aka, Leadville), Homestead Tank 1 and 2, and Tank 8 fed by a seasonal spring (see Table 3 and Figures 3 and 4 of the June 2016 BE). Chiricahua leopard frogs are known to occur at some of these sites (Ox Frame and Black Hawk tanks; J.R. Simms site visit August 20, 2015, Caldwell and Kahrs 2013). Other perennial waters may well support populations as well.

Factors Affecting the Chiricahua Leopard Frog in the Action Area

There are several towers on Keystone Peak, most of which are critical to wireless services in this area. Arizona Department of Public Safety has a tower (which is where one BLM repeater and one BLM repeater control station is hosted). In addition to law enforcement radios, the DPS tower hosts Department of Corrections, AGFD, Emergency Medical Services, Interagency Radio System stations, military range support equipment, Arizona Department of Transportation equipment, and probably a few more state and local government radio services. It also houses a link in the southern loop of the statewide telecommunications microwave network. Border Patrol

also has a tower there. Pima County has a tower or equipment sited on someone else's Keystone tower. All of the wireless phone companies have equipment there, and all of those towers are critical to local wireless services. The Keystone Communications site is critical infrastructure for Federal, State, and local agencies and provides continuity of operations for health and safety to law enforcement, fire, and resources personnel. In the event of a significant loss at Keystone, critical communications capability would be lost that would affect southwest border operations for various federal, state and local agencies. Almost all of the sites on Keystone have backup generators and associated fuel storage tanks. Most backup generators there use propane, as well as diesel generators, and Border Patrol uses a hydrogen fuel cell for backup at that site.

In 2005, the Keystone Peak Communication Site Firebreak was completed to reduce hazardous fuels in and around the communication site. The hazardous fuels reduction project is two acres, of which 0.4 acres is on BLM and 1.6 acres is on private. The private land is owned by the Sierrita Mining and Ranching Company. The BLM and the Arizona State Forestry Division worked together with the land owner to complete this project. The firebreak is maintained annually.

A power line (wood poles) runs roughly along the road to the Keystone Communication Site on the north side of the fire. Fuel clearance around power poles will take place prior to burn implementation. The power company will be notified prior to burn implementation.

Past and ongoing use and maintenance of these facilities has the potential to affect the Chiricahua leopard frog and designated critical habitat, although such effects are anticipated to be minimal because these activities are limited to existing infrastructure and previously treated areas.

With regard to designated critical habitat, the Twin Tanks area is less than 0.5 mile upslope of active mining at Freeport McMoRan's Sierrita Copper Mine and could be affected from expansion of mining activities, creation of aerial pollutants that could affect water chemistry or quality, and possible effects to the frog's prey base. Both the Ox Frame Tank and Twin Tanks sites are also at risk of introduction of nonnative predators, such as bullfrogs and nonnative crayfish. Presence of chytridiomycosis at these tanks has not been investigated.

Past and ongoing livestock grazing and management are the most common activities occurring within the action area. Such activities have the potential to affect the Chiricahua leopard frog and designated critical habitat. Conversely, the practice of maintaining stock tanks to provide perennial water likely benefits the continued occupancy of this area by Chiricahua leopard frogs. The current practice by the livestock operation for maintaining stock tanks is to excavate them before they fill completely with sediment (about half full). This usually occurs in the dry seasons in spring or fall. The inlets from a source wash in the upper half of the tank receiving sediment is excavated without removing sediment from open water near the dam end of the tank. Time between sediment excavation varies by rainfall regime over a given time period, size of water source, surrounding terrain and ground cover in any given sub-watershed. This sediment removal allows for open water habitat essential to the Chiricahua leopard frog that supports isolated populations in the action area. Stock tanks and excavated tinajas used for livestock as tanks fill with sediment and are excavated by the rancher every 2-8 years due to a relatively high

sediment load (see Table 2 of the June 2016 BE). Ox Frame Tank is an exception as it treated on an 8 – 10 year basis. Other tanks in the area are seasonal and their sediment removal schedule is unknown, but they are likely dredged as needed. Maintenance of stock ponds on non-federal lands is covered by a special 4(d) rule under the Act and, if these stock tank maintenance actions are implemented in compliance with a 4(d) rule, take of Chiricahua leopard frogs is exempted (see 77 FR 16388).

The watershed that the action area falls within is steep and shrub dominated in large areas. The project area's current erosion rate as indicated by sediment levels in drainages and need for repeated dredging of stock ponds by the ranching operation is high. Due to the high background level of erosion, sediment may also reduce food sources in stock tanks like aquatic macro-invertebrates.

EFFECTS OF THE ACTION

For this reinitiation, we consider only the additional effects on the Chiricahua leopard frog and its designated critical habitat. These changes that may affect frogs include eliminating the use of sediment traps above stock ponds and increasing the acreage of the proposed prescribed burn from resulting from 2,670 acres to 3,118 acres. Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the proposed action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and, are later in time, but are still reasonably certain to occur.

Effects to the Chiricahua leopard frog and its designated critical habitat are more likely to occur as a result of the revised proposed action, including conservation measures. Direct effects may occur from burn operations in the form of loss of adult frogs on the landscape during the fire. While in ponds, no frogs are likely to encounter fire. Since the work will be done during dry conditions it very likely all frogs will be in close proximity to surface water which will protect them from fire effects, except smoke. Direct effects will also occur to all age classes as a result of increased dredging of Ox Frame Tank that is included in the proposed action. Other potential effects are likely to be indirect.

Post-fire precipitation storm events are likely to move sediment off the slopes into perennial ponds occupied by Chiricahua leopard frogs and designated critical habitat. This also occurs under pre-fire conditions as the watershed is steep and shrub dominated in large areas. Nonetheless, we anticipate an increase of sediment or ash transport from the burned uplands to ponds following prescribed fire that will require additional sediment removal as it becomes necessary to maintain open water. We do not expect increased sediment or ash transport to injure or kill adult CLFs unless a tank is quickly and completely filled by a large pulse of sediment or ash. There is a higher possibility that sediment or ash from a high intensity storm event soon after a burn could smother eggs or tadpoles, and possibly kill them. The likelihood of this happening is moderate because we anticipate that major storm events would occur over recently burned areas, although fires would generally be low intensity maintaining a mosaic of

vegetation cover. Despite these short-term effects, long-term benefits will also result from the application of prescribed fire. In the long term, implementing prescribed fire should result in reducing the sediment erosion potential from future wildfires and decrease the likelihood that a wildfire will burn within CLF habitat.

Increases in stream flow discharges following a fire can result in small to substantial effects on the physical, chemical, and biological quality of the water in streams, rivers, and lakes (Neary et al. 2005). The magnitude of these effects is dependent on factors such as the size, intensity, fuel types, fire severity, and condition of the watershed at the time of burning. Adverse effects to Chiricahua leopard frog could occur at occupied sites primarily through loss of habitat from sedimentation. The magnitude of habitat loss is hard to predict as storm events on sub-watersheds in the area vary from year to year and seasonally. Sediment and ash will be carried to ponds in the watershed; however, there is very little ash produced in grassland compared to forested environments. Often ash under these conditions blows away and first rain showers mix ash into the soil. The BLM concluded that the ash load from summer rains is likely to be minimal (personal communication, Mark Pater District Fire Ecologist) with little effect on aquatic conditions that support leopard frogs.

The post burn sediment regime will likely require some additional dredging of stock tanks beyond the routine frequency of sediment removal. Some level of take is anticipated from increased rate of removal of sediment from occupied stock tanks. Additional dredging of ponds with Chiricahua leopard frogs, tadpoles and eggs as a result of the proposed action may result in take. Because the inlets from a source wash in the upper half of the tank receiving sediment is excavated without removing sediment from open water near the dam end of the tank, eggs and tadpoles in the remaining surface water are not impacted directly by excavation equipment. However, they are affected by increased turbidity and fines that settle out of suspension. Sediment stirred up by excavation activities can cause adverse effects such as clogging gills of tadpoles, coating food used by tadpoles, coating of eggs and short-term reduction in primary productivity (algae) that supports the aquatic food web. .

Some adverse effects to the Chiricahua leopard frog from increased sediment production from prescribed fire may result in loss of eggs and tadpoles, and displacement of juvenile and adult frogs due to a decrease in or loss of surface water similar to what occurs with large summer storms after several years under pre-fire conditions. However, the sedimentation rate may be magnified post-fire unless revegetation from lighter rains occurs before large storm events hit the various sub-watersheds. Regardless, we anticipate that the proposed action will result in additional sedimentation within this watershed.

In the long-term, the impact is anticipated to result in less sediment production from the watershed, which may result in an extended period between treatments of tanks to remove sediment. Removal of woody invasive species to facilitate grassland restoration may improve watershed conditions by increasing water infiltration, resulting in more available surface water for use by frogs in the watershed. The replacement of shrubs and trees that tap shallow aquifers that supply springs may help improve discharge as well. Grasses are shallow rooted and will not use ground water to the extent that trees and shrubs do.

As described above, interrelated effects of this project to Chiricahua leopard frog and designated critical habitat (Ox Frame Tank) are likely to occur. In the short-term (over approximately two years post-burn), dredging by private individuals at private stock tanks may occur sooner than the normal maintenance schedule due to a potential increase in sediment loads post-burn. Effects to the frog and designated critical habitat are the subject of this BO. Normal maintenance of stock ponds on non-federal lands following the stabilization of the watershed post-burn is covered by a special 4(d) rule under the Act and, if these stock tank maintenance actions are implemented in compliance with the 4(d) rule, take of Chiricahua leopard frogs is exempted. Over the long-term, watershed function is anticipated to improve leading to a reduced frequency of sediment removal and increased availability of surface water.

Critical Habitat

Effects to critical habitat PCEs are similar to effects to suitable Chiricahua leopard frog habitat as described above. We do not anticipate any long-term changes to any PCE from implementing the proposed action. There may be effects to PCEs related to water quality if a large storm occurs soon after a burn, but these effects will be temporary and characteristics will return to pre-burn conditions within a few years. In conclusion, we anticipate that the proposed action will not significantly alter any of the characteristics of critical habitat PCEs for the Chiricahua leopard frog.

CUMULATIVE EFFECTS

The Chiricahua leopard frog's southern range has a checker-boarded land ownership pattern involving Federal, state, and private landholders. Both forms of the frog have been affected by activities on other State and private lands that have cumulatively contributed to its decline. Many of these activities, such as grazing, mining, human population expansion and associated infrastructure development, and recreation (including off-highway vehicle use), are expected to continue on State and private lands within the range of the species. Some of these activities could continue to introduce alien species, such as bullfrogs, crayfish, and fish that would prey on or compete with the Chiricahua leopard frog, and may spread a virulent form of chytrid fungus that could harm populations. These activities could also continue fragmentation, major manipulations, and pollution of the frog's wetland habitats.

In contrast, there are also some beneficial effects of activities on state and private lands. Private land owners have created stock tanks and ponds that harbor self-sustaining populations of leopard frogs as is the case in the project area. The Arizona Game and Fish Department (AGFD) and nongovernmental entities are working with private land owners in some areas to eliminate bullfrogs and crayfish source populations that contaminate present a threat to occupied leopard frog habitat. The AGFD is working with various entities in southern Arizona and elsewhere to proactively manage Chiricahua leopard frogs and habitats to improve the status of this species on a range wide scale.

CONCLUSION

After reviewing the current status of the Chiricahua leopard frog and its designated critical habitat; the environmental baseline for the action area, the effects of the proposed activities, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Chiricahua leopard frog, nor is the proposed action likely to adversely modify critical habitat that has been designated for this species. Our conclusion is based on the discussion of effects found in the “Effects of the Action” section above, and the following:

- 1) The number of tanks occupied by Chiricahua leopard frogs within the proposed burn perimeter is limited. There are only two tanks currently known to be occupied by Chiricahua leopard frogs. Only one tank, Ox Frame Tank, is within designated critical habitat.
- 2) Tanks within the burn perimeter that support perennial waters are currently subject to natural sedimentation due to the steep nature of the canyons within which they are located and the soil types of the area. Regular maintenance for these tanks is needed and is currently implemented within the area to be burned. The maintenance of these aquatic habitats is a benefit to Chiricahua leopard frogs and designated critical habitat. This benefit is acknowledged by the inclusion of a special 4(d) rule in the listing regulations for this species. Conservation measures as described above will implement additional stock tank maintenance if additional or more rapid sedimentation occurs as a result of the proposed burn. In this way, aquatic habitat, including critical habitat, will be maintained for the Chiricahua leopard frog. Although the current proposed action does not include the use of sediment traps to address post-burn sedimentation, the proposed conservation measure of additional stock tank management will address the issue of increased sedimentation and will maintain the essential aquatic habitat supporting Chiricahua leopard frogs in the project area.
- 3) Additional conservation measures will be implemented that will reduce the anticipated effects of the proposed action on the Chiricahua leopard frog (see Appendix A of the June 2016 BE).
- 4) In the long-term, the impact is anticipated to result in less sediment production from the watershed, which may result in an extended period between treatments of tanks to remove sediment. Removal of woody invasive species to facilitate grassland restoration may improve watershed conditions by increasing water infiltration, resulting in more available surface water for use by frogs in the watershed. The replacement of shrubs and trees that tap shallow aquifers that supply springs may help improve discharge as well.
- 5) We do not expect any long-term changes to any PCE from implementing the proposed action. There may be temporary effects to PCEs related to water quality if a large storm occurs soon after a burn, but these effects will be temporary and characteristics will return to pre-burn conditions within a few years.
- 6) The long-term effects of the proposed action are consistent with the objectives of the Altar Valley Fire Management Plan to maintain the native vegetation associations of the Altar Valley, including the desert grasslands and woodland communities within the action area.

The conclusions of this biological opinion are based on full implementation of the project as described in the “Description of the Proposed Action” section of this document and other documents incorporated by reference, including the appropriate conservation measures found in the original section 7 consultation.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. “Take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). “Harass” is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR 17.3). “Incidental take” is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

We anticipate incidental take of Chiricahua leopard frog in the form of harm, harass, or indirect mortality resulting from increased flow of sediment and ash into Ox Frame Tank and any other occupied tanks in the action area. Individuals will be harmed through changes in the water chemistry; heavy sediment and ash deposits covering eggs, tadpoles, and clogging gills; and the temporary habitat loss through increased sedimentation following a prescribed burn. Adult frogs will likely avoid any effects of the proposed burn by sheltering in aquatic environments and would be protected by any direct effects from the burn. There is also the potential for take of adult, tadpoles, or eggs of Chiricahua leopard frogs to occur during increased maintenance activities of tanks.

We anticipate incidental take of Chiricahua leopard frogs will be difficult to detect for the following reasons: early life stages of this species have a small body size, losses may be masked by seasonal fluctuations in numbers or other causes (e.g., oxygen depletions for aquatic species, disease), and dead tadpoles and frogs are easily scavenged; therefore finding a dead or impaired specimen is unlikely. Therefore, incidental take will be quantified based primarily upon habitat disturbance. The level of incidental take of this species can be anticipated to be no more than 50 percent of the bottom of Ox Frame Tank or any other occupied tank being covered by fresh silt or ash deposits following a post-fire, precipitation event within two years of the prescribed burn. Such deposits are directly related to habitat modifications and, if exceeded, will constitute an unacceptable impact to occupied habitat and individual Chiricahua leopard frogs. Incidental take will also be exceeded if more than 10 dead or dying Chiricahua leopard frogs or 20 tadpoles, or other aquatic vertebrates of any species, are observed near or within Ox Frame Tank or any other occupied tank during or within three days of a post-fire, runoff event. The observation of this

level of mortality in aquatic vertebrates represents a much larger potential die off of Chiricahua leopard frogs due to a significant change in water and habitat quality.

EFFECT OF THE TAKE

In this biological opinion, the FWS determines that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat for the reasons stated in the Conclusions section.

REASONABLE AND PRUDENT MEASURES and TERMS AND CONDITIONS

All appropriate reasonable and prudent measures have been incorporated into the proposed action and as conservation measures for this consultation. These conservation measures generally and specifically require the BLM to reduce effects to the CLF and its habitat. No additional reasonable and prudent measures are necessary to minimize incidental take.


CONSERVATION RECOMMENDATIONS

1. We recommend that the BLM implement applicable actions within the Chiricahua leopard frog Recovery Plan.
2. We recommend that the BLM work with us and the AGFD to control nonnative aquatic organisms in this Recovery/Critical Habitat Unit, particularly bullfrogs.
3. We recommend that the BLM continue to identify factors that limit the recovery potential of Chiricahua leopard frogs on lands under your jurisdiction and work to correct them.

REINITIATION NOTICE

This concludes formal consultation on the action(s) outlined in your reinitiation request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your continued coordination concerning listed species. No further section 7 consultation is required for the proposed Keystone Peak prescribed fire at this time. Should project plans change, or if information on the distribution or abundance of listed species or critical habitat becomes available, this determination may need to be reconsidered. In all future correspondence on this project, please refer to the consultation number 02EAAZ00-2013-I-0238 (R1). If you have any questions, please contact Scott Richardson at (520) 670-6150, (x242).



Martin A Tugel For
Steven L. Spangle

cc (hard copy):

Field Supervisor, Fish and Wildlife Service, Phoenix, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

cc (electronic copy):

pep@azgfd.gov, Arizona Game and Fish Department, Phoenix, Arizona
Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ
(Attn: John Windes)
Altar Valley Conservation Alliance, Three Points, AZ (Attn: Mary Miller)

filename: BLM Keystone Peak Prescribed Burn.Reinitiation.final BO.sr

Literature Cited

- Bureau of Land Management (BLM). 2004. Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management, FONSI and EA. BLM Arizona State Office, Phoenix, AZ.
- Caldwell, D. and D. Kahrs. 2013. Sierrita Mountains Chiricahua leopard frog Report, June 7, 2013. 7 pp.
- Neary, D.G., Ryan, K.C., and DeBano, L.F., eds. (2005) Wildland fire in ecosystems: effects of fire on soils and water: USDA General Technical Report RMRS-GTR-42-vol.4. Ogden, Utah, USDA Forest Service Rocky Mountain Research Station. 250 p.