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In Reply Refer To:
22410-2007-F-0360
02-21-03-F-0210

August 30, 2007

Memorandum

To: Field Office Manager, Safford Field Office, Bureau of Land Management, Safford, AZ

From: Field Supervisor

Subject: Programmatic Biological Opinion for the Four Proposed Wildland Fire Use Management Areas within the BLM Safford Field Office Management Area

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated June 19, 2007, and received by us on July 2, 2007. At issue are impacts that may result from the four proposed Wildland Fire Use (WFU) Management Areas within the Bureau of Land Management's (BLM) Safford Field Office in Graham, Greenlee, and Cochise counties, Arizona. The proposed action may affect the threatened Chiricahua leopard frog (*Rana chiricahuensis*), endangered lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*), endangered southwestern willow flycatcher (*Empidonax traillii extimus*) and associated critical habitat, endangered Gila chub (*Gila intermedia*) and associated critical habitat, endangered razorback sucker (*Xyrauchen texanus*) and associated critical habitat, threatened spikedace (*Meda fulgida*) and associated critical habitat, threatened loach minnow (*Tiaroga cobitis*) and associated critical habitat, endangered jaguar (*Panthera onca*), and the nonessential experimental population of the endangered northern aplomado falcon (*Falco femoralis septentrionalis*).

In your memorandum, you requested our concurrence that the proposed action is not likely to adversely affect the lesser long-nosed bat, southwestern willow flycatcher and associated critical habitat, Gila chub and associated critical habitat, razorback sucker and associated critical habitat, spikedace and associated critical habitat, loach minnow and associated critical habitat, jaguar, and the northern aplomado falcon. We concur with your determinations for these species. Rationales for our concurrence are detailed in Appendix A.

In addition, on July 26, 2006, populations within Arizona and New Mexico of northern aplomado falcon were designated under section 10(j) of the Act as an experimental nonessential population (50 CFR 17, 42298). Species designated as experimental nonessential populations are treated as proposed species unless they are located within units of the National Park System or National Wildlife Refuge System. Projects on BLM lands in Arizona require conferencing

only if a proposed action is likely to jeopardize the continued existence of the species. After reviewing the description of the proposed action, we believe that activities proposed in the four WFU management areas will not jeopardize the existence of the northern aplomado falcon; thus, this species is not addressed further in this biological opinion. Only the Chiricahua leopard frog is addressed formally in this consultation.

This biological opinion (BO) is based on information provided in your June 19, 2007, memorandum and biological assessment (BA); telephone conversations with Mark Pater of your staff; and other sources of information. Literature cited in this BO is not a complete bibliography of all literature available on the species of concern, fire and fuels reduction and their effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

General effects to the Chiricahua leopard frog, lesser long-nosed bat, southwestern willow flycatcher and associated critical habitat, Gila chub and associated critical habitat, razorback sucker and associated critical habitat, spikedace and associated critical habitat, loach minnow and associated critical habitat were considered in our September 3, 2004, BO for BLM's statewide fire, fuels, and air-quality management program (file number 02-21-03-F-0210). General effects to the jaguar were considered in our May 28, 2004, Memorandum of Concurrence. This BO is tiered to and references information from that 2004 programmatic BO and associated Memorandum of Concurrence.

CONSULTATION HISTORY

The September 3, 2004, BO contains the consultation history for all events prior to and including that BO. The following details the history of the consultation pertaining to this project:

- March 29, 2007: We reviewed a draft BA for the four proposed WFU management areas and provided comments regarding effects to listed species.
- July 2, 2007: We received BLM's request for initiation of formal consultation.
- August 28, 2007: We provided a draft biological opinion to the BLM.
- August 29, 2007 BLM responded to our draft biological opinion.

BIOLOGICAL OPINION

We refer the reader to our September 3, 2004, BO and associated documents for a description of proposed and ongoing fire, fuels-reduction, and air-quality management activities on BLM lands throughout Arizona (see CONSULTATION HISTORY).

Description of the Proposed Action

Our 2004 BO addressed WFU (and other topics) programmatically on BLM lands throughout Arizona, based on the general resource management objectives and constraints (standard operating procedures, guidelines, and conservation measures) set forth in the BLM's Land Use Plan (LUP) amendment for Arizona's fire, fuels, and air-quality management program. The term

of that plan and the BO was approximately 10 years from the date of the BO. The current BO is tiered to that 2004 BO in that Safford's WFU plan complies with the standard operating procedures, guidelines, and conservation measures set forth in the LUP amendment and the 2004 BO. This BO is programmatic because it addresses any WFU events in the project areas for at least the next five years (see discussion under "Plan Revision and Review" below). This BO covers WFU events to the project level (e.g. no further consultation is needed) so long as those projects fit the "Description of the Proposed Action" below and the effects of those events do not exceed those described in the "Effects of the Proposed Action" herein, even though the precise project location, timing, and effects are unknown at this time.

- (A) The short-term goal of this plan is to reintroduce fire to the landscape through WFU to achieve resource management objectives. The long-term goal is to allow fire to resume a more natural ecological role within each proposed management area. The implementation of WFU as a management tool is intended to reduce the overabundance of shrubby plants, promote diverse vegetation age classes and species diversity, and to restore historically degraded ecosystems.

Under the proposed action, the Safford Field Office will establish four management areas for consideration for the application of WFU as a resource-management tool. These areas include:

1. Peloncillo Fire Use Management Area, including the Peloncillo Mountains Wilderness Area (261,971 acres)
2. Turtle Mountain Fire Use Management Area (31,215 acres)
3. Santa Teresa Mountains Fire Use Management Area, including the Santa Teresa Wilderness Area (15,064 acres)
4. Guadalupe Canyon Fire Use Management Area (3,417 acres)

See Section XIII Appendices of the BA for maps of each management area.

- (B) The Peloncillo, Turtle Mountain, Santa Teresa, and Guadalupe Canyon Fire Use Management Areas are all classified in the LUP amendment as Land Use Allocation 1. This Land Use Allocation 1 defines areas suitable for WFU for resource management benefit. These areas are where unplanned and planned wildfire may be used to achieve desired objectives such as to improve vegetation, wildlife habitat, or watershed conditions.

Prior to implementing WFU as a management decision, a cooperative, multi-stage decision-making process involving fire and resource-management personnel will be followed. Questions that will be asked in this decision process as part of the Decision Criteria Checklist include:

1. Is there a threat to life, property, or resources that cannot be mitigated?
2. Are potential effects on cultural and natural resources outside the range of acceptable effects?

3. Are relative risk indicators and/or risk assessment results unacceptable to the appropriate Agency Administrator?
4. Is there other proximate fire activity that limits or precludes successful management of this fire?
5. Are there other Agency Administrator issues that preclude wildland fire use?

The Decision Criteria Checklist states that a “yes” response to any of the five questions listed above indicates that the appropriate management response should be suppression-oriented. Suppression-oriented management responses are outside of the scope of this BO and will be handled according to the LUP consultation and our 2004 BO.

The full planning process used for WFU events differs from the processes applied for management of unwanted wildfires. A wildland fire implementation plan (WFIP) will be developed and followed for each WFU candidate event. The WFIP process consists of three stages that are prepared progressively. Each individual stage constitutes a stand-alone implementation plan and specific forms and formats are available for each stage. Progression from one stage to the next is dependent upon fire activity, potential duration, and relative risk as it relates to the incident. As each progressive stage is prepared, it is attached to the previous stage and becomes the guiding document until management of the fire accomplishes resource objectives or progression to a higher stage occurs.

Since each stage can be completed individually and used as a stand-alone plan, it is possible that an individual fire will be managed under only Stage I for its duration. Some fires may progress to Stage II and some may progress to Stage III. Thus, the overall objectives for managing individual fires can be accomplished through successful implementation of any or all of the stages.

WFU, based on Federal Fire Policy direction, is a direct component of wildland fire management. It is a management action equal to wildfire suppression and thus constitutes an emergency action. It receives consideration, management attention, and management policies equal to wildfire suppression, except for specific differences related to ignition source and management action success.

BLM policy allows for the management of wildland fires initiated by natural ignitions to meet specific land-management objectives. The term “Wildland Fire Use” refers to the management of natural-ignition fires to meet specific land-management objectives.

The “Wildland Fire Use, Implementation Procedures Reference Guide” (May 2005) provides standardized procedures specifically associated with the planning and implementation of WFU, and will be followed in the current proposed action. These procedures meet all BLM policy requirements described in the 2003 Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy.

Prior to implementing WFU under the standards in the 2005 Guide, local units must have ensured compliance with National Environmental Policy Act, National Historical Preservation Act, and Endangered Species Act. In addition, an approved fire-management plan must be in

place that identifies how the local unit plans to implement WFU. All actions implemented under this proposal must also be consistent with local unit land and resource management plans, as well as the LUP amendment for Arizona's fire, fuels, and air-quality-management program.

In addition to the guidelines presented in the May 2005 Reference Guide, the BLM Gila District Fire Management office is also required to follow procedures and guidelines as outlined in: *Safford District Resource Management Plan* (1991); *Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management* (March 2004); and *Gila District Fire Management Plan* (2004).

Wildland Fire Implementation Plan (WFIP).

The implementation plan for potential WFU incidents within the four Fire Use Management Areas consists of three distinct stages. It includes, at a minimum, the Stage I phase. Stage I is a stand-alone plan and includes short-term management actions. Stage I is followed by Stage II for the inclusion of additional and more specific short-term management actions that are needed for successful WFIP implementation. A long-lasting or complex incident will generally require the completion and implementation of Stage III. The methodology for initiating all stages of the WFIP is found in the May 2005 Reference Guide.

Stage I

The strategic fire size-up, initial actions, and the Decision Criteria Checklist at Stage I may be delegated to the Field Office Manager and/or the designated "Acting". The Decision Criteria Checklist consists of the five questions listed above in the **Description of the Proposed Action**. As previously stated, a "yes" response to any of the five questions indicates that the appropriate management response should be suppression-oriented. Suppression-oriented management responses are outside of the scope of this BO and will be handled according to the LUP consultation and our 2004 BO.

When the Initial Attack Incident Commander (IC) and the Unit Duty Officer (UDO) determine the suitable appropriate management response action to be applied to a given incident, they must document their recommendation on the initial attack size-up card or similar document. If the IC and the UDO recommend that the incident is a suitable WFU candidate, the UDO will contact the Agency Administrator or delegated acting for initiation of the Stage I WFIP and the completion of the Decision Criteria Checklist. Once the decision is made to move forward with the WFU management option, a qualified IC or Fire Use Manager must be assigned to the incident. The required time frame is eight hours for completion of Stage I.

Stage II

The May 2005 Reference Guide requires that the Stage II Short Term Implementation Actions assessment will be completed within 24 hours of the determination to proceed to Stage II. Management actions in this stage can vary significantly, depending upon specific circumstances of the particular WFU event. In cases where the fire may be fuel-limited (surrounded by sparse fuels or natural barriers with limited spread potential in relation to values at risk) monitoring may be specified as the predominant implementation action. Monitoring is necessary to track fire movement, activity, and effects; and to provide information vital to completing the WFU Management Assessment. In other cases, monitoring plus some form of mitigation actions may be necessary. In still other cases, fuel types in which the fire is burning may require immediate actions to delay, direct, or check the spread of fire on one or more flanks. Methods to accomplish these types of actions are hand crews and/or Single Engine Air Tankers (SEATs) or helicopters with water buckets. Note that bulldozers, heavy air tankers, and Burned Area Emergency Rehabilitation teams are not used during WFU events. Handcrews and SEATs will be used in accordance with the Conservation Measures as defined in Appendix B in our 2004 BO for the Statewide LUP and the procedures within the 2007 Interagency Standards for Fire and Fire Aviation Operations. Hand crew actions will include monitoring fire behavior, placing minimal hand-lines to control fire direction, and/or igniting smaller fires to protect sensitive areas, discourage fire from entering undesirable areas, or control fire behavior as described above. SEATs (which have 300-600 gallon capacity) are typically used in WFU events to place water or retardant lines along a fire's flanks to direct or prevent the fire's spread in certain areas. Fire crew camps, fire staging areas, and aircraft landing or refueling sites may also be needed to support handcrews, SEAT, and helicopter activities. These support functions are typically located outside, but near, the burn perimeter. WFIP Stage II management actions should be designed to safely achieve the WFU objectives as detailed in the fire management plan and be based on the fire situation and forecasted weather and fire behavior. These actions represent operational activities and resources needed to accomplish those activities until monitoring information or the Periodic Fire Assessment indicates a change in management planning and actions is required.

In fuel types where the primary carrier of the fire is grass and/or brush, the Stage II action plan should be completed prior to the next burning period. Although the designation of a Maximum Project Area (MPA) is not required at Stage II, because of fuel situations within BLM-administered lands and the potential for rapid growth under certain circumstances, it may be advisable to develop an MPA during Stage II. At a minimum, a defined set of management action points (i.e. decision points) should be identified to aid in the decision process for moving to Stage III in the WFIP process. The development of the MPA or any predetermined management action points may be based upon actual growth calculations, by pre-planned methods or by using the boundaries that provide the best feature to enable successful management, where the identified fire use event is located. In any case, the "official" declaration of the MPA is not required until Stage III of the WFIP unless it is otherwise documented in writing by the Agency Administrator responsible for the overall management of the fire use event.

Stage III

The Stage III actions supplement the FMP by providing the full, long-term implementation actions necessary to manage the fire to accomplish the identified objectives. During Stage III it is desirable for the Fire Use Management Team or individuals managing the fire to develop firefighter pocket cards for that particular incident. Stage III primarily differs from Stage II in terms of complexity and risk. As a WFU event progresses, it may become more complex in terms of fire activity, potential fire duration, and relative risk. During Stage III, the WFU event and relative risk is evaluated on a daily basis and includes:

- **Values** are those ecological, social, and economic resources that could be lost or damaged because of a fire. Ecological values consist of vegetation, wildlife species and their habitat, air and water quality, soil productivity, and other ecological functions. Social effects can include life, cultural and historical resources, natural resources, artifacts, and sacred sites. Economic values make up things like property and infrastructure, economically valuable natural and cultural resources, recreation, and tourism opportunities.
- **Hazards** include the conditions under which the fire occurred and exists, its ability to spread and circulate, the intensity and severity it may present, and its spatial extent (*i.e.* fire regime and condition class, current and expected fire behavior, and potential fire size).
- **Probability** is in regard to the likelihood of a fire becoming an active event with potential to adversely affect values (*i.e.* how long before a season-ending event may occur, barriers to fire spread, and seasonal severity).

Periodic Fire Assessment

The May 2005 Reference Guide requires that for each WFU fire, the Agency Administrator (or delegated individual) will periodically affirm the capability to continue management of the fire. The frequency for the periodic assessment is determined by the Agency Administrator in concert with the person assigned to manage the fire use incident. Within the BLM-administered lands in the Gila District, active fires in grass and/or shrub fuel types that exhibit potential for rapid movement (spread), will generally be reassessed on a daily basis. If the Periodic Assessment determines that the fire can no longer be managed as a WFU fire, the BLM will consider the fire a wildfire and immediately manage the fire under full suppression actions. All wildfires and associated suppression actions will be managed according to our 2004 BO.

Plan Review and Revision

This WFU Plan will be evaluated every five years. Monitoring data will be analyzed to determine if there is progress toward meeting long-term management objectives as defined in the Gila District Fire Management Plan and Safford BLM Resource Management Plan. These documents provide direction to identify more specific management objectives which are developed by the Gila District and Field Office resource management specialists (*i.e.* Rangeland Management Specialist, Wildlife Biologist). The plan will be revised as necessary. If such revisions are likely to result in effects to listed species or critical habitat not anticipated herein, or other reinitiation criteria at 50 CFR 402.16a-d are triggered, then reinitiation of this BO will be requested. In order to minimize the effects of WFU and associated management actions on

threatened and endangered species, the Conservation Measures as outlined in Appendix B in our 2004 BO will be adhered to.

Conservation Measures

For all WFU fire-management activities, conservation measures, as described in Appendix B of our 2004 BO 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. Conservation measures noted as “Recommended” are discretionary for implementation, but are recommended to help minimize effects to federally-protected species. Procedures within the Interagency Standards for Fire and Fire Aviation Operations 2007, including future updates, relevant to fire operations that may affect federally-protected species or their habitat are incorporated here by reference.

Firefighter and public safety is the first priority in every fire-management activity. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources must be based on the values to be protected, human health and safety, and costs of protection (2001 Federal Wildland Fire Management Policy). However, implementing to the extent possible the conservation measures in Appendix B of our BO during a WFU event will minimize or eliminate the effects to federally-protected species and habitats.

During WFU events, Resource Advisors will be designated to coordinate concerns regarding federally protected species, and to serve as a liaison between the Field Office Manager and the Fire Use Management Team. They will also serve as a field contact representative responsible for coordination with the FWS. The Resource Advisors will have the necessary information on federally-protected species and habitats in the area and the available conservation measures for the species. They will be briefed on the intended actions for the WFU event, and will provide input on which conservation measures are appropriate, within the standard constraints of safety and operational procedures. The Fire Use Manager (FUMA) has the final decision-making authority on implementation of Conservation Measures during WFU operations.

Mandatory conservation measures are to be applied when implementing WFU, prescribed fires, or proposed vegetation treatments (mechanical, chemical, biological). These conservation measures relating to fuels treatments, such as WFU, have been given an alphanumeric designation for organizational purposes (*e.g.*, FT-1). Species-specific conservation measures will also be applied to reduce adverse affects to the species identified in this document and their habitats. Necessary modifications of the conservation measures or during fire suppression operations will be documented by the Resource Advisor, and coordinated with the FWS.

Resource Advisors (in coordination with the FWS), Fire Management Officers, FUMAs, and/or other resource specialists will coordinate to determine which conservation measures would be implemented during a particular WFU event. If conservation measures for a species cannot be implemented, BLM would be required to initiate emergency Section 7 consultation with us for that particular WFU event.

Chiricahua Leopard Frog

STATUS OF THE SPECIES

Changes in the status of the species have occurred since our September 3, 2004, Programmatic BO (the status from that BO is included herein by reference). A recovery plan was completed for the Chiricahua leopard frog, the goal of which is to improve the status of the species to the point that it no longer needs the protection of the Endangered Species Act. The recovery strategy calls for reducing threats to existing populations; maintaining, restoring, and creating habitat that will be managed in the long term; translocating frogs to establish, reestablish, or augment populations; building support for the recovery effort through outreach and education; monitoring; research needed to provide effective conservation and recovery; and application of research and monitoring through adaptive management. Recovery actions are recommended in each of eight recovery units throughout the range of the species. Management areas are also identified within recovery units where the potential for successful recovery actions is greatest. Since 2004, the status of the Chiricahua leopard frog has been stable or declining slightly in Arizona. There have been successful reestablishments in the Dragoon Mountains and the Gentry Creek area of Tonto National Forest, and additional new populations were found at Buenos Aires National Wildlife Refuge and the Sierrita Mountains. However, the species has apparently disappeared from the Buckskin Hills of the Coconino National Forest (some individuals from that population are at the Phoenix Zoo), the Galiuro Mountains, and Ellison Creek on the Tonto National Forest. American bullfrogs are continuing their invasion of Chiricahua leopard frog habitats in the Pajarito/Atascosa mountain range complex west of Nogales.

Since 2005, we have completed or have in draft form a total of four formal consultations for specific projects, including this one, under the September 3, 2004, programmatic consultation on BLM's statewide fire, fuels, and air quality program (file number 02-21-03-F-0210 and subsequent reinitiations).

ENVIRONMENTAL BASELINE

The environmental baseline is similar to that described in the September 3, 2004, Programmatic BO and is included herein by reference. Of the four WFU management areas, Chiricahua leopard frogs are only known from and likely to occur in the Guadalupe Canyon Fire Use Management Area. No Chiricahua leopard frogs have been documented in that Management Area since 1994, although surveys are inadequate to conclude they are currently absent. The species occurs nearby in the Cloverdale Creek area of New Mexico and, over the life of the project, could potentially colonize suitable habitats in the action area from that locale.

The action area comprises all areas within the boundaries of each of the four WFU Management Areas as well as one-half mile downstream of each of area. The action area for each WFU Management Area also encompasses areas outside of the fire perimeter affected by WFU management actions (helispots, base camps, water-dip sites, etc.).

EFFECTS OF THE PROPOSED ACTION

Effects of the proposed action to Chiricahua leopard frogs remain similar to those described in the September 3, 2004, Programmatic BO. Of the four proposed WFU Management Areas, only activities in the Guadalupe Canyon Fire Use Management Area have the potential to affect Chiricahua leopard frogs. Thus, our analysis of effects from WFU will only pertain to the Guadalupe Canyon Fire Use Management Area.

As described in the September 3, 2004 BO, BLM will not implement WFU within, or immediately adjacent to, riparian habitats occupied by the Chiricahua leopard frog during the life of the LUP Amendment (Appendix C of our 2004 BO), although these treatments could be chosen for use in habitats upstream or upslope from known, occupied sites. WFU management activities and methods (including fire suppression) will be used in, or immediately adjacent to, riparian habitats occupied by the Chiricahua leopard frog. Although frogs have not been documented in Guadalupe Canyon since 1994, it is possible that they still exist in stock tanks and streams in the area or may colonize suitable habitats over the life of the project.

Fire (including WFU) can result in significant impacts to Chiricahua leopard frogs and their habitats. Fire and subsequent degradation of watershed condition immediately after fires can result in dramatically increased runoff, sedimentation, and debris flows through canyon bottom aquatic habitats, as well as ash flow that can create toxic conditions. After the Rattlesnake wildfire in the Chiricahua Mountains, Arizona, a large debris flow filled in Rucker Lake, a historical Chiricahua leopard frog locality. Leopard frogs (either Chiricahua or Ramsey Canyon leopard frogs) apparently disappeared from Miller Canyon in the Huachuca Mountains, Arizona, after a 1977 crown fire in the upper canyon and subsequent erosion and scouring of the canyon during storm events (T. Beatty, pers. comm. 2000). Leopard frogs were historically known from many localities in the Huachuca Mountains; however, natural pool and pond habitats are largely absent now, and the only breeding leopard frog populations occur in artificial tanks and ponds. Crown fires followed by scouring floods are a likely cause of this absence of natural leopard frog habitats. In Romero Canyon, Catalina Mountains, Pima County, Arizona, lowland leopard frogs (*Rana yavapaiensis*) and their habitat were severely reduced or eliminated due to runoff and sedimentation following the Aspen Fire in 2003. Loss of occupied habitat also occurred in Buehman Canyon and probably other localities in the Catalina Mountains due to recent catastrophic fires (Wallace 2003). At Saguaro National Park East, similar loss of lowland leopard frog habitat has also occurred due to post-fire sedimentation and ash flow (D. Swann, pers. comm. 2002). Smoke diffusion into water and ash flow can result in high levels of phosphorus and nitrogen (Spencer and Hauer 1991) with potentially toxic effects to frogs.

While sedimentation is expected to occur as a result of WFU events in the Guadalupe Canyon Fire Use Management Area, the fuels (vegetation component) in this proposed WFU area are classified as National Forest Fire Laboratory (NFFL) Fuel Model 1, which consist of fine herbaceous fuels (light, short grasses) that have cured or are nearly cured. Fires are anticipated to be surface fires with short flame lengths that move rapidly through cured grass and associated material. Very little shrub or timber is present, generally less than one-third of the area. A WFU event in this fuel model should not produce severe fire behavior that will result in dramatic post-fire effects causing significant sediment and ash flows into potential Chiricahua leopard frog habitat. Fires in this fuel model rarely consume 100 percent of the fuels, leaving a mosaic of unburned patches of grass. Even burned grasses should retain their root crown, stabilizing soils

and further decreasing the potential for erosion. Although it is possible that a major rain event following a WFU event can cause increased erosion, the mosaic burn pattern typical of fires in this fuel model and the retention of root crowns should decrease the likelihood of significant erosion events affecting Chiricahua leopard frogs.

Management of wildfires, as needed, may reduce the watershed damage and associated indirect effects described above. However, such activities can also affect any frogs in the area, including impacts of placing crew camps and equipment staging areas in or near frogs. In addition, fire managers make decisions during WFU that affect the direction or intensity of fire, and these decisions can affect whether areas on, or upstream of, frog habitats burn and if these areas burn intensely. Frogs would primarily be affected at breeding sites, but they have been known to move overland or along intermittent drainages and may be found at temporary pools that are sometimes miles from breeding habitats. Frogs could be affected in these areas as well. Chiricahua leopard frogs could also be affected by use of water from occupied sites for water sources to suppress fire, water drops over Chiricahua leopard frog habitat, or potential chemical contamination of frogs and their occupied habitats from retardant drops.

Conservation measures are considered mandatory for all WFU events. Conservation measure AM-5 will minimize the use of water from occupied sites, except as necessary to abate immediate fire threat or loss of life or property, thus minimizing effects to the species from this activity. RA-8 and 9 would minimize potential introduction of nonnative predators and disease from such activities. If deemed necessary by the IC, using water sources occupied by Chiricahua leopard frogs during WFU may result in mortality from driving through habitats; release of toxic substances into the water from pumps, vehicles, or other sources; direct loss of individual frogs or larvae taken into pumps or helicopter water buckets; loss of habitat (water quantity) from dewatering during low flow periods; or the spread of disease or exotic (nonnative) predatory species (*e.g.*, bullfrogs, nonnative fishes, crayfish) among different water sources. Conversely, water drops can, in some circumstances, be used instead of hand lines (“wet-lining”) to control fire movement. This tactic should result in less impact to soil, litter, and vegetation than hand-line construction both in riparian and adjacent upland habitats, which would minimize increases in soil or ash erosion and silt moving into adjacent aquatic habitats occupied by the frog.

Fire retardant drops will be restricted in or near riparian and aquatic habitats, especially sites occupied by federally protected species such as the Chiricahua leopard frog, in accordance with conservation measure RA-6. Fire retardant is an ammonium-based chemical containing nitrogen, phosphorous, and a corrosion inhibitor composed of sodium ferrocyanide. Retardant is known to be toxic to aquatic life in relatively high concentrations, including leopard frogs (Calfee and Little 2003). When rivers or streams have high or adequate flows during suppression efforts, the chemical effects of the retardant would have minimal effects on water quality, due to dilution from the water flows during and after fire suppression actions. Stagnant aquatic sites with little or no water flow to dilute the retardant would have a greater adverse effect on the frogs. Implementing conservation measure RA-6 will greatly reduce or prevent retardants from entering aquatic sites occupied by the Chiricahua leopard frog, and will help to eliminate negative effects to the frog from this activity.

Conservation measure RA-7 states that “priority for placement of fire camps, fire staging areas, and aircraft landing or refueling sites will be outside riparian areas or river/stream corridors. Base camps, staging areas (dip sites, vehicle parking, etc.), and aircraft refueling areas will likely

be located outside of, but in close proximity to, the WFU Management Area. Conservation measure RA-7 should reduce, if not eliminate, the impact of these activities on Chiricahua leopard frogs outside of the Management Areas. If it is not possible to avoid riparian areas or river/stream corridors, the BLM resource advisor should notify us immediately to document this deviation from the conservation measures and attempt to minimize impacts to frogs.

Since larval and adult Chiricahua leopard frogs may occur in stock tanks, ponds, and streams in the Guadalupe Canyon Fire Use Management Area, and because BLM will minimize use of these treatments in habitats immediately adjacent to occupied sites, WFU would rarely directly affect leopard frog eggs, larvae, or adults. Fire activities on upland terrestrial habitats used during WFU to control these fires to their management boundaries could affect frogs as described above, but the use of these fire management tools will only occur under conditions that meet predetermined prescriptions.

Other negative effects to the Chiricahua leopard frog from WFU are anticipated to be indirect and result from soil or ash inflow into occupied waters from suppression or project activities that occur upslope or upstream from occupied sites, as previously discussed. An inflow of ash and sediment into a water body is capable of smothering eggs and tadpoles, resulting in mortality. A reduction in the amount of prey can ultimately affect leopard frog numbers and reproduction. Sediment and ash flow can also inhibit respiration in macroinvertebrates, resulting in reduced density and composition of macroinvertebrates (a primary food source for the frogs). These indirect effects have the capability of affecting the numbers and reproduction of the species and may result in a change in its distribution, if isolated populations are locally extirpated and recolonization from adjacent sites is not feasible. In order to minimize these indirect effects on Chiricahua leopard frogs, several conservation measures (Appendix B of the 2004 BO) will be implemented for the proposed WFU activities. These conservation measures are expected to reduce the scope and intensity of effects to the species numbers, reproduction, and distribution.

Conversely, Chiricahua leopard frogs may experience positive indirect effects from aggressive fire suppression actions within riparian or upland habitats. Fire suppression activities may minimize the amount of vegetation lost from catastrophic wildfires, which would contribute to the soil and ash flow into occupied sites. Long-term positive effects are also expected as a result of WFU events helping to restore natural vegetation communities and natural fire regimes. Post-fire rehabilitation and restoration activities are not apart of this proposed action and, furthermore, not typically associated with WFU management actions. Post-fire restoration and rehabilitation actions are more typically associated with wildfires, especially wildfires that produce severe fire behavior and result in dramatic post-fire effects. Similar to wildfire events, any post-fire rehabilitation and restoration actions will be considered under a separate consultation associated with each wildfire.

In summary, there may be a variety of adverse effects to Chiricahua leopard frogs, and conservation measures are unlikely to eliminate the adverse effects of WFU at or near the occupied sites. Over time, implementing fire and fuels management activities (including WFU) would reduce the risk of catastrophic fires in riparian or upland habitats that would result in large-scale losses of vegetation. Because small, disjunct populations, such as with the Chiricahua leopard frog, are at higher risk of local extirpation from catastrophic events, this long-term improvement would assist in protecting their aquatic habitats and potentially stabilizing frog populations, thereby providing an overall positive effect to the species.

Although adverse effects cannot be completely avoided, the proposed conservation measures are designed to minimize the effects of proposed WFU in Guadalupe Canyon WFU Management Area. The conservation measures will help reduce adverse effects by minimizing the amount of vegetation impacted, the amount of sedimentation, and direct effects to the Chiricahua leopard frog and its habitat. Additionally, the proposed Guadalupe Canyon WFU Management Area is likely to reduce the risk of catastrophic wildfires impacting the remaining riparian habitat along Guadalupe Canyon in the Peloncillo Mountains.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Analysis of cumulative effects remains similar to that described in our 2004 BO.

CONCLUSION

After reviewing the anticipated effects of the proposed action, including conservation measures incorporated into the Proposed WFU Management Areas, the environmental baseline for the action area, the current status of the Chiricahua leopard frog, and the cumulative effects, we affirm our previous conclusion that the proposed action is not likely to jeopardize the continued existence of the Chiricahua leopard frog. We base this determination on our rationale from our 2004 BO and the following:

- 1) The Guadalupe Canyon Fire Use Management Area is classified as NFFL Fuel Model 1 (light grasses with minimal shrub or timber) and is anticipated to burn in a mosaic pattern that should reduce the amounts of sediment and ash runoff as a result of WFU events.
- 2) Three of the four proposed WFU Management Areas do not support and are not likely to support populations of Chiricahua leopard frogs during the term of the proposed action, nor do they have populations downstream of them.
- 3) The anticipated effects from proposed WFU projects in Guadalupe Canyon Fire Use Management Area are consistent with the effects analysis in our 2004 non-jeopardy BO.
- 4) Proposed conservation measures are sufficient to minimize the effects to Chiricahua leopard frogs in the vicinity of the proposed Guadalupe Canyon Fire Use Management Area.
- 5) Proposed WFU activities in the Guadalupe Canyon Fire Use Management Area are anticipated to reduce the risk of catastrophic wildfires impacting the remaining riparian habitat along the Guadalupe Canyon and at other sites potentially occupied by Chiricahua leopard frogs.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, 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 ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

AMOUNT OR EXTENT OF TAKE ANTICIPATED

Because Chiricahua leopard frogs have not been documented in the Guadalupe Canyon Fire Use Management Area since 1994, we do not anticipate incidental take of Chiricahua leopard frogs as a result of the proposed action.

CONSERVATION RECOMMENDATIONS

No additional conservation recommendations are recommended beyond those described in the September 3, 2004, Programmatic BO.

DISPOSITION OF DEAD OR INJURED LISTED ANIMALS

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 2450 West Broadway Road #113, Mesa, Arizona [telephone: (480) 967-7900] within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. If feasible, the remains of intact specimens of Chiricahua leopard frogs shall be submitted to the FWS Ecological Services Office in Tucson. Injured animals should be transported to a qualified veterinarian by a qualified biologist. Should any treated listed animal survive, the FWS should be contacted regarding the final disposition of the animal.

REINITIATION NOTICE

This concludes reinitiation of formal consultation and conferencing on BLM's four proposed WFU Management Areas within the Arizona BLM Safford Field Office management area. 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 a 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. If conservation measures or other aspects of the proposed action are not implemented as anticipated herein, including schedules for implementation, reinitiation may be warranted pursuant to 50 CFR 402.16(b).

Thank you and your staff for helping us complete this reinitiation of consultation and conferencing. Any questions or comments should be directed to Brian Wooldridge (520) 670-6150 (x235) or Jim Rorabaugh (520) 670-6150 (x230) of my staff.

/s/ Steven L. Spangle

cc: Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
State Director, Bureau of Land Management, Phoenix, AZ
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

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- Calfee, R.D., and E.E. Little. 2003. Effects of ultraviolet-B radiation on the toxicity of fire-fighting chemicals. *Environmental Toxicology and Chemistry* 22(6).
- Spencer, C.N., and F.R. Hauer. 1991. Phosphorus and nitrogen dynamics in streams during a wildfire. *Journal of the North American Benthological Society* 10(1):24-30.
- Wallace, J.E. 2003. Status assessment of lowland leopard frogs in mountain canyons of Coronado National Forest-Santa Catalina Ranger District. Report to the Coronado National Forest, Purchase Order #43-8197-3-0058.

Appendix A

CONCURRENCE

Lesser Long-Nosed Bat

Refer to our 2004 BO for a review of the status of the species and environmental baseline for the lesser long-nosed bat, which has not changed significantly since that time. After reviewing the effects of the proposed action, we concur with the BLM's determination that the proposed action may affect, but is not likely to adversely affect, the lesser long-nosed bat. Our concurrence is based on the following:

- 1) Previous post-fire monitoring indicates that agave mortality is low and that fire does not appreciably decrease the survivorship of agave plants.
- 2) All WFU events are anticipated to be more than one-half mile from the nearest known roosts.

Southwestern Willow Flycatcher and Critical Habitat

Refer to our 2004 BO for a review of the status of the species and environmental baseline for the southwestern willow flycatcher. Since the 2004 BO, flycatcher numbers have increased in Arizona; however, overall distribution of flycatchers throughout the state has not. No critical habitat has been designated in any of the proposed WFU areas. After reviewing the effects of the proposed action, we concur with the BLM's determination that the proposed action may affect, but is not likely to adversely affect, the southwestern willow flycatcher and critical habitat. Our concurrence is based on the following:

- 1) No flycatcher breeding habitat occurs within any of the four proposed WFU Management Areas.
- 2) The nearest critical habitat for the flycatcher is over three miles from the closest WFU Management Area (Turtle Mountain Fire Use Management Area).
- 3) Current conservation measures are sufficient to minimize the effects to the flycatcher and critical habitat in the vicinity of the proposed WFU Management Areas.

Gila Chub and Critical Habitat

Refer to our 2004 BO for a review of the status of the species and environmental baseline for the then-proposed Gila chub. Since the 2004 BO, the Gila chub was listed as endangered with critical habitat on November 2, 2005. No critical habitat has been designated in any of the proposed WFU areas. After reviewing the effects of the proposed action, we concur with the BLM's determination that the proposed action may affect, but is not likely to adversely affect, the Gila chub or its critical habitat. Our concurrence is based on the following:

- 1) Neither Gila chub nor its critical habitat occur in the action area.
- 2) The nearest population of Gila Chub to a WFU Management Area (Turtle Mountain Fire Use Management Area) is over one-half mile away and will be buffered by the Gila Box Riparian National Conservation Area (RNCA).
- 3) Fire frequencies and severities are expected to be low in the Turtle Mountain Fire Use Management Area, thus resulting in minimal sedimentation and ash runoff.
- 4) The edges of the Turtle Mountain Fire Use Management Area have sparse fuel loading and the boundary with the Gila Box RNCA is expected to act as a natural buffer, thus further minimizing the effects of ash and sediment run-off.
- 5) Current conservation measures are sufficient to minimize the effects to the Gila chub and critical habitat in the vicinity of the proposed WFU Management Areas.

Razorback Sucker and Critical Habitat

Refer to our 2004 BO for a review of the status of the species and environmental baseline for the razorback sucker and critical habitat, which has changed minimally in the Gila River Basin since that time. Critical habitat has been designated within one-half mile of the action area in the Gila Box RNCA. After reviewing the effects of the proposed action, we concur with the BLM's determination that the proposed action may affect, but is not likely to adversely affect, the razorback sucker or its critical habitat. Our concurrence is based on the following:

- 1) The closest WFU Management Area (Turtle Mountain Fire Use Management Area) is at least one-half mile away from razorback sucker habitat and critical habitat in the Gila Box RNCA.
- 2) Fire frequencies and severities are expected to be low in the Turtle Mountain Fire Use Management Area, thus resulting in minimal sedimentation and ash runoff.
- 3) The edges of the Turtle Mountain Fire Use Management Area have sparse fuel loading and the Gila Box RNCA is expected to act as a natural buffer, thus further minimizing the effects of ash and sediment run-off.
- 4) Current conservation measures are sufficient to minimize the effects to the razorback sucker and its critical habitat in the vicinity of the proposed WFU Management Areas.

Spikedace and Critical Habitat

Refer to our 2004 BO for a review of the status of the species and environmental baseline for the spikedace at that time. Since the 2004 BO, critical habitat has been designated in various streams and rivers; however, no critical habitat has been designated in the action area. After reviewing the effects of the proposed action, we concur with the BLM's determination that the proposed action may affect, but is not likely to adversely affect, the spikedace or its critical

habitat. Our concurrence is based on the following:

- 1) No spikedace or critical habitat occurs in the action area. The nearest population of spikedace and critical habitat is over nine miles from the closest WFU Management Area (Santa Teresa Mountains Fire Use Management Area).
- 2) Current conservation measures are sufficient to minimize the effects to the spikedace and critical habitat in the vicinity of the proposed WFU Management Areas.

Loach Minnow and Critical Habitat

Refer to our 2004 BO for a review of the status of the species and environmental baseline for the loach minnow at that time. Since the 2004 BO, critical habitat has been designated in various streams and rivers; however, no critical habitat has been designated in the action area. After reviewing the effects of the proposed action, we concur with the BLM's determination that the proposed action may affect, but is not likely to adversely affect, the loach minnow or its critical habitat. Our concurrence is based on the following:

- 1) No loach minnow or critical habitat occurs in the action area. The nearest population of loach minnow and critical habitat is over nine miles from the closest WFU Management Area (Santa Teresa Mountains Fire Use Management Area).
- 2) Current conservation measures are sufficient to minimize the effects to the loach minnow and its critical habitat in the vicinity of the proposed WFU Management Areas.

Jaguar

Refer to our May 28, 2004, Memorandum of Concurrence for a review of the status of the species and environmental baseline for the jaguar, which has changed minimally since that time. No critical habitat has been designated for this species. After reviewing the effects of the proposed action, we concur with the BLM's determination that the proposed action may affect, but is not likely to adversely affect, the jaguar. Our concurrence is based on the following:

- 1) The jaguar is a wide-ranging species and is found only sporadically within the project area. The vast majority of its range and all key recovery or conservation areas lie outside of the United States.
- 2) Current conservation measures are sufficient to minimize the effects to jaguar in the vicinity of the proposed WFU Management Areas.
- 3) Effects of activities proposed in the four WFU Management Areas are consistent with the effects discussed in our 2004 concurrence for the jaguar for the LUP amendment.