



United States Department of the Interior



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In Reply Refer to:
AESO/SE
22410-2011-F-0019

October 3, 2011

Karla S. Petty
Arizona Division Administrator
U.S. Department of Transportation
Federal Highway Administration
4000 North Central Avenue, Suite 1500
Phoenix, Arizona 85012-3500

RE: Replacement of the State Route 90 Bridge over the San Pedro River in Cochise County, Arizona

Dear Ms. Petty:

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). An initial request was dated October 26, 2010, and was received by us on October 28, 2010. A second request dated April 26, 2011, was received by us via electronic mail on May 2, 2011. At issue are the effects of the proposed replacement of the State Route (SR) 90 Bridge over the San Pedro River in Cochise County, Arizona.

Your October 26, 2010, letter concluded that the proposed action may adversely affect the endangered Huachuca water umbel (*Lilaeopsis schaffneriana* ssp. *recurva*) and the species' critical habitat. Your October 26, 2010, letter also requested concurrence that the proposed action is not likely to adversely affect the endangered southwestern willow flycatcher (*Empidonax traillii extimus*). We concur with your determination and have provided our rationale in the Appendix.

We also note that your initial request for consultation was transmitted two days prior to our October 28, 2010, Federal Register notice proposing the uplisting of the spikedace (*Meda fulgida*) and loach minnow (*Tiaroga cobitis*) from threatened to endangered as well as revisions to the respective species' critical habitat (75 FR 66482). The upper San Pedro River from the International Boundary to the Babocomari River confluence has been proposed as critical habitat for both species. Your April 26, 2011, letter requested conference on your determination that the proposed action is not likely to adversely affect this proposed critical habitat. We concur with your determination and again, we have provided our rationale in Appendix A. Should critical habitat be designated on the upper San Pedro River for one or both species, we will adopt the conference concurrence as a final concurrence; you must request adoption in writing.

This biological opinion is based on information provided in: (1) the October 2010 Biological Evaluation transmitted with your October 26, 2010, letter; (2) information gathered during a September 30, 2010, meeting between members of my staff, as well as representatives of the Arizona Department of Transportation (ADOT; your designated non-Federal representative) and the Bureau of Land Management's (BLM) San Pedro Riparian National Conservation Area (San Pedro RNCA); (3) your April 26, 2011, letter; and (4) other published and unpublished sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, the clearing of corridors within riparian vegetation and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Please note that this biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service* (No. 03-35279) to complete our analysis with respect to critical habitat.

Consultation History

March 12, 2010: We received an electronic mail message from the BLM regarding the action area for the proposed action and the potential effects to threatened and endangered species within the San Pedro RNCA. We provided our recommendations to the BLM via electronic mail on March 15, 2010.

July 22, 2010: U.S. Fish and Wildlife Service staff provided input to the BLM regarding the removal of cliff swallow (*Petrochelidon pyrrhonota*) nests from the existing structure prior to its demolition. The matter was referred to our Division of Migratory Birds.

September 30, 2010: We met with ADOT, BLM, and the U.S. Army Corps of Engineers (USACE) to discuss the project's effects and conservation measures.

October 28, 2010: We received your October 26, 2010 request for consultation.

February 2011: We transmitted a draft biological opinion for your review. Included in this draft biological opinion was a recommendation that, pursuant to section 7(a)(4) of the Act and sections 402.10(a) and (b) of its implementing regulations, you (1) conduct an analysis of the effects of the proposed action as they relate to the proposed spikedace and loach minnow critical habitat; and (2) if necessary, initiate conference consultation with us.

May 2, 2011: We received your April 26, 2011, request for conference on the proposed action's effects to proposed spikedace and loach minnow critical habitat. Your letter specifically sought our concurrence with your determination that the proposed action is not likely to adversely affect spikedace and loach minnow proposed critical habitat.

BIOLOGICAL OPINION

Description of the Proposed Action

A complete description of the proposed action is found in the BE transmitted with your October 26, 2010, letter as well as in your April 26, 2011, letter. The proposed action is summarized below.

The proposed action is located on SR 90 approximately 7 miles east of the town of Sierra Vista and extends from milepost (MP) 328.64 to MP 328.98 within an ADOT easement on BLM land. The existing SR 90 Bridge is 279.8 feet long, 26.0 feet wide, curb-to-curb, with 10-foot wide eastbound and westbound travel lanes and 3-foot wide shoulders. The overall width of the bridge is 28.3 feet including the existing curbs. The current bridge is supported by three, 20-foot wide concrete piers supported on driven piles.

The proposed action is the construction of a 321.5-foot long, 46.8-foot wide, three span girder bridge with two, 12-foot wide travel lanes and 10-foot wide shoulders in both directions. The three-span bridge superstructure will be supported by two pier caps containing two, 6-foot diameter columns on top of 8-foot diameter drilled shafts. In order to meet current hydrological modeling requirements, the bridge deck height will be raised by 6-feet from the current elevation and grade. These modifications will allow the San Pedro River channel to meander more freely within the floodplain than is presently possible as well as well being capable of passing a 100-year return interval flood event. Appendix A in the BE contains detailed construction plans.

The new bridge will be constructed in phases to minimize impacts to sensitive resources and to allow traffic use of the existing bridge structure during construction. Phase I will be performed outside the primary spring/summer bird breeding periods with construction occurring from October through March. This phase will include the demolition and construction of the bridge structures, bridge abutments, and portions of the roadway approaches. The general scope of work for Phase I (October 2011 to March 2012) will be reconstructing half of the bridge and Phase II (October 2012 – March 2013) will be reconstructing the remaining half of the bridge, and consists of the following project elements:

- Remove vegetation within the existing ADOT easement, new easement and temporary construction easements (TCEs)
- Saw-cut the bridge deck travel lane and demolish one side; the concrete deck will be broken into smaller manageable pieces and removed
- Remove a portion of the bridge superstructure, support, and sub-structure
- Remove concrete support substructure by use of a ram-hoe and saw cutting to approximately 2 feet below existing grade
- Drill shaft excavations to construct new support columns and piers
- Construct building crane and drilling rig pads in the floodplain, approximately 50 feet wide for the length of the bridge, except over the low flow channel
- Construct pier caps to support bridge spans
- Construct bridge deck superstructure
- Construct bridge abutments and approaches
- Construct roadway approaches and shoulders
- Contour roadway to project limits
- Pave roadway

The following construction activities will be performed after the construction of the main bridge structures. This work will occur on the roadway and roadway approach to the bridge only, with the exception of seeding disturbed soils, and includes the following:

- Apply striping and signage
- Contour and seed disturbed areas with species native to the project area when construction activities are complete

Construction is anticipated to commence in October 2011 and is anticipated to be completed by summer 2013. Construction would be completed during daylight hours; however, nighttime construction may be necessary. No blasting will be authorized. Concrete is expected to be delivered by truck and mobilized to the specific areas of construction. Construction shall remain within the existing 200-foot wide ADOT easement, 50-foot wide TCE on the north side of the bridge and 30-foot wide TCE on the south side of the bridge. Construction details are located in Appendix IV of the BA. Staging areas will be required at the west side of the bridge within the existing easement. Access beneath the bridge will be required on either side of the San Pedro River wetted channel and will be accessed by temporary construction roads located on each side of the bridge within the ADOT easement. The majority of vegetation within the easement will be removed for floodplain access, staging/stockpiling, and construction.

The project will result in ground surface disturbance of more than 1.0 acre; therefore, an Arizona Pollutant Discharge Elimination System (AZPDES) General Construction permit is required. This permit will include the development and implementation of a project-specific Storm Water Pollution Prevention Plan (SWPPP) containing measures to ensure the protection of the receiving water, the San Pedro River.

The project will require a Clean Water Act (CWA) Section 404 permit authorized by the USACE. For this project, a Nationwide Permit (NWP) No. 14 - Linear Transportation Projects, which authorizes the construction, expansion, modification, or improvement of linear transportation facilities, will be used. Because the project is located within the San Pedro RNCA, crosses a perennial stream, and may affect an endangered species or critical habitat, a preconstruction notification (PCN) to the Corps District Engineer will be required in accordance with Regional Condition No. 4 and NWP General Condition No. 17.

The project will be constructed within the existing ADOT easement; however, a 0.34 acre parcel of new easement will be acquired from the BLM as well as TCEs.

Description of the Proposed Conservation Measures

The proposed action includes the following conservation measures, organized by project timeline and responsible party, intended to avoid, minimize, and mitigate the effects of the action.

Design Responsibility

- All disturbed soils that will not be landscaped or otherwise permanently stabilized by construction will be seeded using species native to the project vicinity.

Roadside Development Responsibility

- The Contractor shall develop a Noxious and Invasive Plant Species Treatment and Control Plan in accordance with contract documents, Arizona State Law, Arizona Revised Statutes and Executive Orders. The Plan and associated treatments shall exclude areas that are not designated for earth disturbance as shown on the project plans. A list of species for control shall be obtained from the Department Roadside Development Section. The treatment and control plan shall be submitted by the Contractor to the Engineer at least 15 working days prior to ground disturbing activities. The Engineer will submit the Plan to the Department Roadside Development Section for a 10 day review.

ADOT Safford District Responsibilities

- The Engineer will review and approve the procedures outlined in the Spill Prevention and Pollution Prevention Plan developed by the Contractor. The District will monitor the implementation of the plan to ensure compliance.
- The Engineer will review and approve the containment plan developed by the Contractor that will prevent debris and construction materials from contaminating the San Pedro River. The District will monitor the implementation of the plan to ensure compliance.

ADOT Environmental Planning Group Responsibility

- At least ten working days prior to construction, the Arizona Department of Transportation Environmental Planning Group will hire a qualified biologist to stake and flag habitat avoidance areas and to be present as a monitor during all construction over and within twenty-five feet of the wetted channel.

Construction Contractor Responsibilities

- To prevent the introduction of invasive seeds, all earth-moving and hauling equipment shall be washed at the Contractor's storage facility prior to entering the construction site.
- To prevent invasive species seeds from leaving the site, the Contractor shall inspect all construction equipment and remove all attached plant/vegetation and soil/mud debris prior to leaving the construction site.
- All disturbed soils that will not be landscaped or otherwise permanently stabilized by construction shall be seeded using species native to the project vicinity.
- The Contractor shall provide the BLM the construction start date at least ten working days prior to the start of construction.
- Construction equipment and vehicles shall not enter or cross the San Pedro River wetted channel.
- The Contractor shall not pump water from the San Pedro River wetted channel for any reason.
- The Contractor shall not use construction methods that require blasting.
- The Contractor shall develop a Spill Prevention and Pollution Prevention Plan to prevent impacts to sensitive species and critical habitat. The Spill Prevention and Pollution Prevention Plan shall state that the Bureau of Land Management shall be notified of any spills. The plan shall be submitted to the ADOT Safford District for review and approval. The approved plan shall be implemented by the Contractor during construction.

- The Contractor shall develop a containment plan for debris and construction materials to avoid contamination of the San Pedro River. The containment plan shall be submitted to the ADOT Safford District for review and approval. The approved plan shall be implemented by the Contractor during construction.
- The Contractor shall restrict all bridge construction activities, including ground disturbing and vegetation clearing activities, to the periods between October 1 through April 1 of any given year.
- All construction and demolition activity occurring in the floodplain of the San Pedro River shall cease if work areas become inundated or saturated with water due to rainfall or flooding.
- The Contractor shall not stockpile rock, soil, base, sand or other materials, millings, waste piles of asphalt or concrete rubble, or slash material immediately adjacent to the San Pedro River wetted channel.
- The Contractor shall avoid all flagged and/or otherwise designated sensitive resource areas within or adjacent to the project area.
- The Contractor shall contact the ADOT Environmental Planning Group at least 10 working days prior to the start of construction to arrange for a qualified biological monitor to stake and flag habitat avoidance areas and to be present as a monitor during all construction over and within twenty-five feet of the wetted channel.
- The biological monitor shall report to the BLM on a weekly basis about construction activities, incidents, and progress. The monitor shall ensure all construction activities are contained within the easements, that the Contractor complies with all mitigation measures, and any non-compliance is reported to the BLM within twenty-four hours.
- The biological monitor shall survey for Huachuca water umbel immediately before ground disturbing activities are initiated, and the BLM shall be notified if any Huachuca water umbel are located within the areas to be disturbed so the BLM may move the plants to other sites.

Status of the Species – Huachuca Water Umbel

The rangewide status of the Huachuca water umbel was described in our April 2, 2009, biological opinion on the Huachuca FireScape Project (File number 22410-2008-F-0451), and is incorporated herein via reference. Additional information may be found in the Final Rule listing the species as endangered (62 FR 665; FWS 1997) and in the Final Rule designating critical habitat for the species (64 FR 37441: FWS 1999).

The primary constituent elements (PCEs) identified in the critical habitat final rule (FWS 1999) as necessary for the survival and recovery of the Huachuca water umbel include, but are not limited to, the habitat components which provide: (1) sufficient perennial baseflows for growth and reproduction; (2) a stable stream channel subject to periodic floods that rejuvenate the riparian plant community; (3) a riparian plant community that is stable over time and in which non-native species either do not exist or have little or no adverse effect on umbel growth and reproduction; and (4) refugial sites that allow each population to survive catastrophic events and recolonize larger areas.

Environmental Baseline – Huachuca Water Umbel

The environmental baseline includes 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 to assess the effects of the action now under consultation.

The action area for the SR 90 Bridge replacement includes all areas anticipated to be directly and indirectly affected by the proposed action. The riverine portion of the action area consists of the wetted river channel, approximately 30 feet wide, with a defined bank 2 to 5 feet high and a surrounding floodplain terrace paralleling both sides of the river corridor. The floodplain on the west side of the river is approximately 100 feet wide and 130 feet wide on the east side. The river reach in which construction will occur is relatively straight and therefore, we anticipate that adverse, post-project geomorphic effects either up or downstream from the construction area will be minimal in linear extent.

Upland areas include an existing 200-foot wide ADOT easement, a 50-foot wide temporary construction easement (TCE) on the north side of the bridge, and a 30-foot wide TCE on the south side of the bridge. Construction details are located in Appendix IV of the BA. Staging areas will be placed at the west side of the bridge within the existing easement. Access beneath the bridge will be required on either side of the San Pedro River wetted channel and will be accessed by temporary construction roads located on each side of the bridge within the ADOT easement. The majority of vegetation within the easement will be removed for floodplain access, staging/stockpiling, and construction.

Effects of the Proposed Action – Huachuca Water Umbel

Huachuca water umbel metapopulations have been documented at or in close proximity to the bridge within the past decade (Engineering and Environmental Consultants, Inc. 2001, 2004). Surveys in 2007 and 2010 did not detect the species at the locale (Engineering and Environmental Consultants, Inc. 2008, Vernadero Group, Inc. 2011). We anticipate that the species' minute seeds and propagules may be present but exceedingly difficult to detect. The action area is within critical habitat for the Huachuca water umbel and contains the PCEs necessary for the survival and recovery of the species (HDR, Inc. 2010).

Direct effects are anticipated to occur within the wetted channel of the San Pedro River and will include degradation of suitable habitat by siltation or by the involuntary introduction of contaminants used for construction (i.e. petroleum products). The proximity of ground disturbance to the wetted channel has the potential for introducing sediments into the San Pedro River which could smother individuals or suitable habitat. If a contaminant spill occurred, it could migrate into the wetted channel and directly impact umbel populations through mortality and degradation of suitable habitat.

Direct effects in the project limits as a result of bridge construction will occur outside the wetted channel, but within critical habitat. Impacts would consist of substrate disturbance during the removal of the bridge sub-structure and placement of new bridge piers. Geotechnical operations revealed that artesian conditions exist in the area around the bridge piers and construction will need to address this to prevent water from rising to the ground surface and flowing into the San Pedro River. Bridge piers constructed at this location would need to be placed below the artesian water aquifer in order for the river to meander normally. Substrate disturbance would directly impact approximately 0.64 acre of designated critical habitat. Of this, approximately 0.10 acre would be permanent (bridge abutments and support columns). The removal of the bridge piers would provide approximately 0.03 acre of potentially suitable habitat by

creating new area for vegetation to grow, bringing the permanent impact to umbel habitat to 0.07 acre. This permanent impact represents a minor amount of total designated critical habitat. All temporarily disturbed areas would be returned to pre-construction grade and seeded with species native to the project area.

The substrate disturbance within designated critical habitat could result in modifications to PCEs 2 and 3 as a result of: the removal of existing vegetation, demolition and removal of the existing superstructure, support, and sub-structure, and new construction of support columns, piers, rig pads, pier caps, deck superstructure, and abutments.

While small in magnitude and temporary in duration, any excavation or ground disturbance could affect Huachuca water umbel habitat in the project limits by temporarily creating new flow paths or temporarily increasing velocity of water through the altered areas during flooding. This could impact PCE 2 by rendering the stream channel unstable for a short duration.

Removing vegetation from 75 feet to either side of the SR 90 centerline would result in the falling of at least 16 mature Fremont cottonwood (*Populus fremontii*), 20 Goodding willow (*Salix gooddingii*), 10 Arizona walnut (*Juglans major*), and three Arizona ash (*Fraxinus velutina*). This would affect PCE 3 by disrupting the native riparian plant community. The tree removal would reduce the overall vegetation density, reduce light competition, and allow for the potential of invasive species to become established. Tamarisk (*Tamarix* spp.) could successfully out-compete native species for sunlight, nutrients, and water. If this were to occur then there could be an adverse effect on resources available for Huachuca water umbel growth and reproduction.

Construction activities and resulting protection measures would not modify perennial base flows, PCE 1, or impact the availability of refugial sites, PCE 4, as these sites are lacking in or near the project's limits. The proposed action will not alter the hydrograph or large-scale fluvial function of the San Pedro River. Over time natural substrate will occupy the small area displaced by the project actions, and the river will be able to meander at the site. Habitat will remain suitable for colonization of the Huachuca water umbel and may support the species in the future.

As previously discussed, the project would affect designated critical habitat. The substrate disturbance within designated critical habitat could result in modifications to PCEs 2 and 3 as a result of: the removal of existing vegetation, demolition and removal of the existing superstructure, support, and sub-structure, and new construction of support columns, piers, rig pads, pier caps, deck superstructure, and abutments. This in turn could temporarily render the stream channel unstable (PCE 2) and disrupt the riparian plant community by allowing tamarisk to out-compete native species. A small amount (0.07 acre) of permanent loss of potential substrate would occur, and the temporary disturbance area (0.64 acre) would be restored.

Potential indirect effects may include degradation of suitable habitat by increased sediment loads or by the introduction of contaminants used for construction (i.e. petroleum products). Because of the proximity of ground disturbance to the wetted channel, the potential for erosion, causing sediment loading within and downstream of the project limits could impact the wetted channel through siltation and impact aquatic species later in time. In addition, if a spill of a contaminant would occur, it could eventually migrate into the wetted channel and potentially impact aquatic species downstream of the project area later in time. Implementation of containment, spill, and pollution prevention plans are anticipated to reduce the frequency and level of impact from such events.

The substrate disturbance within designated critical habitat could result in modifications to PCE 2 as a result of the removal of existing vegetation, demolition and removal of the existing superstructure, support, and sub-structure, and new construction of support columns, piers, rig pads, pier caps, deck superstructure, and abutments. While small in magnitude and temporary in duration, until the disturbed soils stabilize and revegetation occurs, these activities could indirectly affect Huachuca water umbel habitat downstream through temporary increased velocity of water through the altered area. This could indirectly impact PCE 2, as well as individuals, by increasing the rate of flooding, rendering the stream channel downstream temporarily unstable. We anticipate that such channel avulsions will occur during relatively frequent return-interval flood events and that the changes will not be drastic. Conversely, the design of the new bridge will allow the river channel to naturally meander freely within the floodplain and provide adequate clearance up to a 100-year storm, thus minimizing catastrophic erosion during high flows. Lastly, the increased potential for small-scale channel meandering may favor the establishment and maintenance of Huachuca water umbel, which can be outcompeted by other aquatic and near-bank plants under more stable conditions.

The effects to undetected Huachuca water umbel seeds or propagules will be immeasurably small relative to the number of sites known to be occupied in the San Pedro River and rangewide; survival and recovery will not be affected based on effects to individuals of the species. The temporary effect to PCEs within 0.64 acre of critical habitat and the permanent loss of PCEs within 0.07 acre of critical habitat are small when compared to the 33.7 river miles of critical habitat within the San Pedro RNCA and the 51.7 river miles of critical habitat throughout Cochise and Santa Cruz counties. The disturbance at the SR 90 Bridge site will not appreciably alter the water quality or hydrologic functions of the San Pedro River, nor will it reduce the ability for Huachuca water umbel situated in upstream reaches to colonize the site or downstream reaches. As such, the proposed action will not affect the ability for Huachuca water umbel critical habitat to contribute to the survival and recovery of the species.

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. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The primary cumulative effect to Huachuca water umbel in the action area is depletion in stream discharge resulting from water use by non-Federal entities (i.e. City of Sierra Vista and Cochise County). Many other activities that may impact the Huachuca water umbel in the area would also be considered Federal actions, and thus are not considered cumulative effects. Exceptions may include activities on private lands in Scotia and Bear canyons on the west slope of the Huachuca Mountains, and at other sites in the San Rafael Valley. The most likely impacts in these areas would be livestock grazing. The Huachuca water umbel is apparently able to coexist with well-managed livestock grazing; however, historic and long-term effects of grazing on riparian systems supporting the water umbel have been detrimental. Effects of livestock grazing on the water umbel on lands managed by the Coronado National Forest were recently addressed in a formal section 7 consultation.

The effects of undocumented aliens (UDA) have not been analyzed in depth but there is the potential that foot traffic within the San Pedro RNCA and through Garden and McClure canyons could result in trampling of Huachuca water umbel and increased exposure to wildfire risk.

Conclusion

After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the action, as proposed, is neither likely to jeopardize the continued existence of the Huachuca water umbel, nor likely to destroy or adversely modify critical habitat for the species. We present these conclusions for the following reasons:

- The status of Huachuca umbel appears to be relatively stable within its known range in the U.S. and Mexico, including areas within the San Pedro RNCA.
- Huachuca water umbel has not been detected at the SR 90 Bridge site in recent years. The species has been detected in the area in the past, continues to occur in areas upstream from SR 90, and a suitable substrate for reestablishment will remain at the conclusion of the proposed action.
- The bridge site contains the four PCEs of Huachuca water umbel critical habitat; PCEs 2 and 3 will be temporarily affected. The temporary effects to PCEs 2 and 3 within 0.64 acres of habitat and the net, 0.07-acre permanent loss of those PCEs represent immeasurably small impacts relative to the 33.7 miles of critical habitat on the San Pedro River and 51.7 miles rangewide.
- These effects are not anticipated to destroy or adversely modify the critical habitat or reduce its ability to contribute to the survival and recovery of Huachuca water umbel.

INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the Act do not apply to listed plant species. However, protection of listed plants is provided to the extent that the Act requires a Federal permit for removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

We recommend that the Federal Highway Administration and its non-Federal representative, ADOT, continue to monitor the status of umbel and its critical habitat at the SR 90 Bridge site within the San Pedro RNCA.

In order that we are kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal and conference consultation for the proposed replacement of the SR 90 Bridge over the San Pedro River within the San Pedro RNCA in Cochise County, Arizona. You may ask the FWS to confirm the conference concurrence as a written concurrence if the proposed critical habitat for spikedace and loach minnow is designated within the action area. The request must be in writing. If the FWS reviews the proposed action and finds there have been no significant changes in the action as planned or in the information used during the conference, the FWS will confirm the conference concurrence as a written concurrence and no further section 7 consultation will be necessary. 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 (not applicable to this consultation); (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.

Thank you for your continued coordination. No further section 7 consultation is required for this project at this time. Should project plans change, or if information on the distribution or abundance of listed species or critical habitat becomes available, those determinations may need to be reconsidered. In all future correspondence on this project, please refer to consultation number 22410-2011-F-0019.

Should you require further assistance or if you have any questions, please contact Jason Douglas at (520) 670-6150 (x226) or Jean Calhoun at (x223).

Sincerely,


for Steven L. Spangle
Field Supervisor

cc (hard copy):

Field Supervisor, Fish and Wildlife Service, Phoenix, Arizona (2)
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, Arizona

cc (electronic copy):

Marcia Radke, Bureau of Land Management, Sierra Vista, Arizona
Kathleen Tucker, U.S. Army Corps of Engineers, Phoenix, Arizona

William Knight, Arizona Department of Transportation, Flagstaff, Arizona
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, Arizona
Regional Supervisor, Arizona Game and Fish Department, Tucson, Arizona

Appendix

Concurrence - Southwestern Willow Flycatcher

Background

The SR 90 Bridge area is a flycatcher migration corridor, and exhibits nominal flycatcher breeding habitat. A southwestern willow flycatcher exhibiting a brood patch – a condition associated with breeding – was captured at a Monitoring Avian Productivity and Survivorship (MAPS) survey site near Kingfisher Pond (also known as Young-Block Pond) (H. Swanson, pers. comm. 2008). An unsubstantiated report of a southwestern willow flycatcher at Kingfisher Pond was received in June 2010 (S. Sferra pers. comm.). This pond is located within approximately one mile of the SR 90 Bridge crossing, and habitat connectivity between the sites is good. It appears likely that the San Pedro RNCA supports occasional breeding activities, though the reproductive output of such birds has not yet been confirmed.

Effects Determination

We concur with your determination that the proposed action may affect, but is not likely to adversely affect, the southwestern willow flycatcher. We present this conclusion for the following reasons:

- The in-channel components of the proposed action will be conducted during the non-breeding, non-migration season from October 1 through April 1 of any given year. This will avoid directly affecting any southwestern willow flycatchers during breeding season.
- At least 16 mature Fremont cottonwood, 20 Goodding willow, 10 Arizona walnut, and three Arizona ashes will be removed (see BE Figure 3). The loss of these broadleaf riparian trees will render the cleared area unsuitable for future breeding activities, but the acreage is small relative to the amount of riparian vegetation present within the San Pedro RNCA. The site will continue to serve as a migration corridor.
- Environmentally sensitive areas beyond the clearing limits will be flagged during construction, and a biological monitor will be assigned to monitor and report on all activities.
- The project site will be revegetated following construction.
- Critical habitat has been designated (and a revision proposed) for the southwestern willow flycatcher, but none is present (or proposed for designation) at the project site.

Conference Concurrence – Spikedace and Loach Minnow

Background - Spikedace

The rangewide status of the spikedace was described in detail in our February 9, 2009, biological opinion on the Fossil Creek Range Allotment Management Plan (File number 22410-2007-F-0197), and is incorporated herein via reference. Additional information on the spikedace and its critical habitat can be found in the critical habitat Final Rule (72 FR 13356: FWS 2007).

The primary constituent elements (PCE) of spikedace critical habitat include: (1) permanent and flowing water with low levels of pollutants; (2) sand, gravel, and cobble substrates with low or moderate amounts

of fine sediment and substrate embeddedness; (3) streams that have low gradients appropriate for each species; appropriate water temperatures for each species; pool, riffle, run, and backwater components; and abundant aquatic insect food; (4) habitat with no or low levels of detrimental, non-native fish species that allows persistence of spinedace and the species' habitat; and (5) areas within perennial, interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted. The appropriate and desirable level of these factors may vary seasonally and is highly influenced by site-specific circumstances. Therefore, assessment of the presence/absence, level, or value of the key components must include consideration of the season of concern and the characteristics of the specific location. The key components are not independent of each other and must be assessed holistically, as a functioning system, rather than individually. In addition, the key components need to be assessed in relation to larger habitat factors, such as watershed, floodplain, and streambank conditions; stream channel geomorphology; riparian vegetation; hydrological patterns; and overall aquatic faunal community structure.

On October 28, 2010, we published a proposed rule to uplist both the spinedace and loach minnow from threatened to endangered species and to redesignate the species' respective critical habitat (75 FR 66482). Notwithstanding the proposal to uplist the spinedace, the species' status was accurately described in the Fossil Creek BO. Substantive changes to critical habitat have been proposed.

The proposed rule includes the designation of 37.2 miles of the upper San Pedro River from the international boundary downstream to the Babocomari River as critical habitat for both species. This upper San Pedro River portion of the proposed critical habitat is largely within the San Pedro RNCA, which is within the action area considered in this BO.

The proposed rule for spinedace and loach minnow critical habitat lists a series of physical and biological factors (PBF) essential to the conservation of the species. Should the final critical habitat rule include the upper San Pedro River, the prior PCEs of spinedace critical habitat will be superseded by the following PBFs:

1. Habitat to support all egg, larval, juvenile, and adult spinedace. This habitat includes perennial flows with a stream depth generally less than 1 m (3.3 ft), and with slow to swift flow velocities between 5 and 80 cm per second (1.9 and 31.5 in. per second). Appropriate stream microhabitat types include glides, runs, riffles, the margins of pools and eddies, and backwater components over sand, gravel, and cobble substrates with low or moderate amounts of fine sediment and substrate embeddedness. Appropriate habitat will have a low gradient of less than approximately 1.0 percent, at elevations below 2,100 m (6,890 ft). Water temperatures should be in the general range of 8.0 to 28.0 °C (46.4 to 82.4 °F);
2. An abundant aquatic insect food base consisting of mayflies, true flies, black flies, caddisflies, stoneflies, and dragonflies.
3. Streams with no or no more than low levels of pollutants.

4. Perennial flows, or interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.
5. No nonnative aquatic species or levels of nonnative aquatic species that are sufficiently low to allow persistence of loach minnow.
6. Streams with a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of transporting sediments.

Spikedace were last detected in the lower reaches of the San Pedro River in 1991(USBR 1992). Spikedace were present in the San Pedro River up through 1969 within the area affected by a spill of contaminated water from the Cananea Mine in Sonora, Mexico, which extended 60 miles north of the international boundary (Eberhardt 1981). All aquatic life within this reach stretch was killed between 1977 and 1979, and no spikedace records are known after that time.

The physical habitat present in the upper San Pedro remains suitable for the species, though competitive and/or predatory nonnative fishes are also present. Because of the species' small size and low numbers, it is difficult to detect. While we believe that spikedace may remain present in the lower San Pedro River, particularly following floods that may displace individuals from Aravaipa Creek or Hot Springs and Redfield canyons, we feel their abundance is immeasurably low and individuals are unlikely to disperse upstream into the action area.

As stated above, there is currently no spikedace critical habitat with the action area. The action, however, does lie within Unit 3 of the proposed critical habitat (FWS 2010), which consists of 99.3 miles of habitat on the upper San Pedro River, Aravaipa Creek and its tributaries Deer and Turkey creeks, Redfield and Hot Springs canyons, as well as Bass Canyon, tributary to Hot Springs Canyon, in Cochise, Pima, Pinal, and Graham Counties, Arizona. The upper San Pedro River portion of Unit 3 includes 37.2 miles of river from the international border with Mexico downstream to the confluence with the Babocomari River. Overall, this portion of the San Pedro River contains suitable habitat for all life stages of spikedace (PBF 1); has an appropriate food base (PBF 2); consists of perennial streams with no or low levels of pollutants (PBFs 3 and 4); and exhibits a natural, unregulated flow regime that allows for periodic flooding (PBF 6).

Effects Determination - Spikedace

The proposed action will have no effect on individual spikedace, as the species is not presently known to occur in the action area; the effects analyzed herein under conference are to the proposed critical habitat.

We analyzed the effects of the proposed action to the general physical and biological characteristics of the San Pedro River in the Effects of the Proposed Action – Huachuca Water Umbel section, above. We incorporate these prior analyses herein and provide further analysis on those factors unique to spikedace.

The action area lacks the full suite of physical habitat components associated with PBF 1 and is occupied by nonnative species (PBF 5 refers to native species assemblages). The action area does exhibit PBF 2 (macroinvertebrate prey) and PBF 3 (low pollutants), but the proposed conservation measures (a project-

specific SWPPP as well as a Spill-Prevention Plan) will avoid or minimize the effects to an insignificant and discountable level. We anticipate the proposed action will have no effect to PBFs 4 (sufficient flows), and 6 (flow regime).

The net level of disturbance at the SR 90 Bridge site will not appreciably alter the water quality or hydrologic functions of the San Pedro River, nor will it reduce the ability for spikedace to eventually occur in the site or downstream reaches. As such, the proposed action will not affect the ability for the proposed critical habitat to contribute to the survival and recovery of the species.

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. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The primary cumulative effect to spikedace in the action area is depletion in stream discharge resulting from water use by non-Federal entities (i.e. City of Sierra Vista and Cochise County).

The effects of undocumented aliens (UDA) have not been analyzed in depth but there is the potential that foot traffic within the San Pedro RNCA could result in bank destabilization and increased exposure of riparian vegetation to wildfire risk. There is a potential for operations to resume at the copper mine in Cananea, Sonora, with the attendant risk of both chronic and acute contamination of the upper San Pedro River.

Conference Conclusion - Spikedace

After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, we concur that the action, as proposed, will have no effect to spikedace and discountable and insignificant effects to the proposed critical habitat for the species. We present these conference conclusions for the following reasons:

- The rangewide status of spikedace is precarious, but the species is not present in the action area. Individuals of the species will not be affected or incidentally taken during or after construction and thus, the effects to the species will not affect recovery.
- The bridge site does not fully exhibit PBFs 1 or 5 of the proposed spikedace critical habitat. Conservation measures are anticipated to result in the avoidance or minimization of PBFs 2 and 3, and PBFs 4 and 6 will not be affected.
- The effects of the proposed action represent immeasurably small impacts relative to the 37.2 miles of proposed spikedace critical habitat on the upper San Pedro River, 99.3 miles in the San Pedro River Basin, and 726 miles rangewide.
- These effects are small and not anticipated to destroy or adversely modify the proposed critical habitat or reduce its ability to contribute to the survival and recovery of spikedace.

Background - Loach Minnow

The rangewide status of the loach minnow was described in detail in our February 9, 2009, biological opinion on the Fossil Creek Range Allotment Management Plan (File number 22410-2007-F-0197), and

is incorporated herein via reference. Additional information on the loach minnow and its critical habitat can be found in the critical habitat Final Rule (72 FR 13356: FWS 2007).

The primary constituent elements (PCE) of loach minnow critical habitat include: (1) permanent and flowing water with low levels of pollutants; (2) sand, gravel, and cobble substrates with low or moderate amounts of fine sediment and substrate embeddedness; (3) streams that have low gradients appropriate for each species; appropriate water temperatures for each species; pool, riffle, run, and backwater components; and abundant aquatic insect food; (4) habitat with no or low levels of detrimental, non-native fish species that allows persistence of loach minnow and the species' habitat; and (5) areas within perennial, interrupted stream courses that are periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted.

The appropriate and desirable level of these factors may vary seasonally and is highly influenced by site-specific circumstances. Therefore, assessment of the presence/absence, level, or value of the key components must include consideration of the season of concern and the characteristics of the specific location. The key components are not independent of each other and must be assessed holistically, as a functioning system, rather than individually. In addition, the key components need to be assessed in relation to larger habitat factors, such as watershed, floodplain, and streambank conditions; stream channel geomorphology; riparian vegetation; hydrological patterns; and overall aquatic faunal community structure.

On October 28, 2010, we published a proposed rule to uplist both the spikedace and loach minnow from threatened to endangered species and to redesignate the species' respective critical habitat (75 FR 66482). Notwithstanding the proposal to uplist the spikedace, the species' status was accurately described in the Fossil Creek BO. Substantive changes to critical habitat have been proposed.

The proposed rule includes the designation of 37.2 miles of the upper San Pedro River from the international boundary downstream to the Babocomari River as critical habitat for spikedace as well as loach minnow. This upper San Pedro River portion of the proposed critical habitat is largely within the San Pedro RNCA, which is within the action area considered in this BO.

The proposed rule for spikedace and loach minnow critical habitat lists a series of physical and biological factors (PBF) essential to the conservation of the species. Should the final critical habitat rule include the upper San Pedro River, the prior PCEs of loach minnow critical habitat will be superseded by new PBFs. Please note that loach minnow PBFs 2 through 6 are identical to PBFs 2 through 6 for spikedace; only PBF 1 differs, and it is as follows:

Habitat to support all egg, larval, juvenile, and adult loach minnow. This habitat includes perennial flows with a stream depth generally less than 1 m (3.3 ft), and with slow to swift flow velocities between 0.0 and 80 cm per second (0 and 31.5 in. per second). Appropriate stream microhabitat types include pools, runs, riffles, and rapids over sand, gravel, cobble, and rubble substrates with low or moderate amounts of fine sediment and substrate embeddedness. Appropriate habitat will have a low gradient of less than 2.5 percent, located at elevations below 2,500 meters (8,202, feet). Water temperatures should be in the general range of 8.0 to 25.0 °C (46.4 to 77°F);

The status of loach minnow in the action area is generally comparable to that of spikedace, described above; the latter is incorporated herein via reference. Loach minnow were last detected in the San Pedro River in 1966.

The physical habitat present in the upper San Pedro remains suitable for the species, although competitive and/or predatory nonnative fishes are also present. Because of the species' small size and low numbers, it is difficult to detect. Nevertheless, loach minnow have not been detected in twenty years of fish surveys. While loach minnow may, at times, be displaced to the San Pedro River from Aravaipa Creek or Hot Springs and Redfield canyons, we feel that individuals are unlikely to disperse upstream into the action area.

As stated above, there is currently no loach minnow critical habitat with the action area. The action, however, does lie within Unit 3 of the proposed critical habitat (FWS 2010), which consists of 99.3 miles of habitat on the upper San Pedro River, Aravaipa Creek and its tributaries Deer and Turkey creeks, Redfield and Hot Springs canyons, as well as Bass Canyon, tributary to Hot Springs Canyon, in Cochise, Pima, Pinal, and Graham Counties, Arizona. The upper San Pedro River portion of Unit 3 includes 37.2 miles of river from the international border with Mexico downstream to the confluence with the Babocomari River. Overall, this portion of the San Pedro River contains suitable habitat for all life stages of loach minnow (PBF 1); has an appropriate food base (PBF 2); consists of perennial streams with no or low levels of pollutants (PBFs 3 and 4); and exhibits a natural, unregulated flow regime that allows for periodic flooding (PBF 6).

Effects Determination - Loach Minnow

The proposed action will have no effect on individual loach minnow, as the species is not presently known to occur in the action area; the effects analyzed herein under conference are to the proposed critical habitat.

We analyzed the effects of the proposed action to the general physical and biological characteristics of the San Pedro River in the Effects of the Proposed Action – Huachuca Water Umbel section, above.

We incorporate these prior analyses herein and provide further analysis on those factors unique to loach minnow.

The action area lacks the full suite of physical habitat components associated with PBF 1 and is occupied by nonnative species (PBF 5 refers to native species assemblages). The action area does exhibit PBF 2 (macroinvertebrate prey) and PBF 3 (low pollutants), but the proposed conservation measures (a project-specific SWPPP as well as a Spill-Prevention Plan) will avoid or minimize the effects to an insignificant and discountable level. We anticipate the proposed action will have no effect to PBFs 4 (sufficient flows), and 6 (flow regime).

The net level of disturbance at the SR 90 Bridge site will not appreciably alter the water quality or hydrologic functions of the San Pedro River, nor will it reduce the ability for loach minnow to eventually occur in the site or downstream reaches. As such, the proposed action will not affect the ability for the proposed critical habitat to contribute to the survival and recovery of the species.

Cumulative effects to loach minnow are the same as those described above for spikedace, and are incorporated herein via reference..

Conference Conclusion - Loach Minnow

After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, we concur that the action, as proposed, will have no effect to loach minnow and discountable and insignificant effects to the proposed critical habitat for the species. We present these conference conclusions for the following reasons:

- The rangewide status of loach minnow is precarious, but the species is not present in the action area. Individuals of the species will not be affected or incidentally taken during or after construction and thus, the effects to the species will not affect recovery.
- The bridge site does not fully exhibit PBFs 1 or 5 of the proposed loach minnow critical habitat. Conservation measures are anticipated to result in the avoidance or minimization of PBFs 2 and 3, and PBFs 4 and 6 will not be affected.
- The effects of the proposed action represent immeasurably small impacts relative to the 37.2 miles of proposed loach minnow critical habitat on the upper San Pedro River, 99.3 miles in the San Pedro River Basin, and 726 miles rangewide.
- These effects are small and not anticipated to destroy or adversely modify the proposed critical habitat or reduce its ability to contribute to the survival and recovery of loach minnow.

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