In Reply Refer to:
AESO/SE
22410-2009-F-0191

July 30, 2010

Mr. Ron Fowler
Project Manager, Arizona Section
Department of the Army
Los Angeles District, Corps of Engineers
Arizona-Nevada Area Office
3636 North Central Avenue, Suite 760
Phoenix, Arizona 85012-1936

RE: San Francisco River Natural Gas Line Replacement and Bank Protection Project
(SPL-2008-109-RWF)

Dear Mr. Fowler:

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 March 23, 2009, and was received by us on March 27, 2009. At issue are impacts that may result from the proposed Department of the Army authorization for the El Paso Natural Gas Company (EPNG) to replace and lower the elevation of three natural gas lines and to construct approximately 300 linear feet of bank stabilization in the San Francisco River near Clifton, Greenlee County, Arizona. The proposed action will adversely affect the threatened loach minnow (Tiaroga cobitis) and its critical habitat.

This biological opinion is based on information provided in the: (1) the SWCA Environmental Consultants’ (SWCA) April 2010 Biological Assessment of Impacts to Loach Minnow from the proposed EPNG San Francisco River Crossing Project, Greenlee County, Arizona (Revised BA) transmitted with your April 29, 2010, letter; (2) the January 2009 Biological Assessment of Impacts to Loach Minnow from the Proposed EPNG Line No. 2083 Replacement Project, Greenlee County, Arizona (Initial BA) transmitted with your March 23, 2009, letter; (3) fish survey data submitted by SWCA Environmental Consultants (SWCA 2008); (4) proceedings of various meetings and electronic mail exchanges between our respective staffs and representatives of EPNG, SWCA, and the Federal Energy Regulatory Commission (FERC); and (5) various published and unpublished sources of information.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, and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Also 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 analyses with respect to critical habitat.

Consultation History

May and June 2005: Staff from the El Paso Natural Gas Company (EPNG) and their consulting biologists, SWCA, Inc. (SWCA), made the initial contact and began meeting with our respective staffs regarding emergency repositioning work to be performed on the 2083 line under the San Francisco River. These discussions eventually included proposed pipeline integrity work on the 2006 and 2007 lines.

June 2007 through January 2009: EPNG and our respective staffs continued discussions of the proposed action, with particular attention directed to avoiding and minimizing permanent impacts to the aquatic environment.

January 22, 2009: We received your January 20, 2009, letter requesting our concurrence with your determination that the proposed action (see Description of the Proposed Action section, below) was not likely to adversely affect the threatened loach minnow or the species' critical habitat.

March 16, 2009: My staff informed your staff via electronic mail that we could not concur with your effects determination. Your staff as well as EPNG indicated that formal interagency consultation would be initiated. We transmitted a letter reiterating our nonconcurrence on March 19, 2009 (File number 22410-2009-I-0191), and began discussions regarding completing the formal consultation. We were also made aware of FERC's eventual involvement in permitting the proposed action.

March 27, 2009: We received your March 23, 2009 letter transmitting a BA and requesting formal consultation on the proposed action's effect to the loach minnow and the species' critical habitat.

June 24, 2009: Our respective staffs as well as representatives of EPNG discussed the eventual transition of the lead Federal agency to FERC. My staff also requested that a survey and monitoring plan be prepared prior to completion of formal consultation.

November 25, 2009: We transmitted a draft biological opinion to you.

December 2, 2009: Our respective staffs as well as representatives of EPNG discussed modifications to the proposed action to accommodate the pre-excavation installation of piezometer-based observation and test wells and the potential for the resulting groundwater elevation data to alter the remainder of the proposed action. Your staff also provided initial verbal comments on the draft biological opinion.

April 30, 2010: We received your April 29, 2010, letter transmitting the Revised BA

July 15, 2010: Your staff transmitted an electronic mail message stating that there were no comments on our November 25, 2009, draft biological opinion.

BIOLOGICAL OPINION

Description of the Proposed Action

Complete descriptions of the proposed action are contained in the Initial and Revised BAs, and are incorporated herein via reference. The proposed action is the replacement of three natural gas pipeline segments (2083, 2006, and 2007) beneath the San Francisco River. Excavation will occur in a 640-foot long by 175-foot wide (2.57-acre) corridor within the floodplain and active channel of the river. The river would be temporarily diverted around the trenching activities with a temporary, water-filled dam. Temporary workspace and upland staging areas (4.46 acres) will be situated on both the east and west sides of the river. Temporary workspace will also occupy 10.15 acres of land within the 100-year return interval floodplain. Permanent disturbance will be limited to 0.30 acres of bank stabilization and piezometric monitoring devices.

Proposed conservation measures include: (1) scheduling the 58-day construction period during October and November, the low-flow season and outside of the loach minnow’s breeding season; (2) implementation of FERC’s Wetland and Waterbody Construction and Mitigation Procedures and Upland Erosion Control, Revegetation, and Maintenance Plan (see Pages 7-9 in the Revised BA for specific measures); (3) implementation of the September 10, 2009, Preconstruction Survey, Environmental Inspection and Post Construction Monitoring Plan (see Appendix C of the Revised BA); (4) development of site-specific Stormwater Pollution Prevention (SWPPP) and Waste Management (WMP) plans to contain construction materials and remediate inadvertent spills; (5) site restoration and recontouring; (6) implementation of post-construction monitoring to assess the geomorphic consequences of the bank protection; and (7) revegetation with native plant species.
Status of the Species

Loach minnow was listed as a threatened species on October 28, 1986 (FWS 1986). Critical habitat was designated on March 21, 2007 (FWS 2007a), but is currently being reconsidered as a result of litigation. Furthermore, a five-year review and recovery plan revision were also initiated in 2007 (FWS 2007b).

Loach minnow is a small fish from the minnow family Cyprinidae. Loach minnow are olivaceous in color, and highly blotched with darker spots. Whitish spots are present at the front and back edges of the dorsal fin, and on the dorsal and ventral edges of the caudal fin. A black spot is usually present at the base of the caudal fin. Breeding males have bright red-orange coloration at the bases of the paired fins and on the adjacent body, on the base of the caudal lobe, and often on the abdomen. Breeding females are usually yellowish on the fins and lower body (Minckley 1973, FWS 1991).

Loach minnow are endemic to the Gila River basin of Arizona and New Mexico within the United States, and Sonora, Mexico, where they were recorded only in the Rio San Pedro. Historically, loach minnow in Arizona were found in the Salt River mainstem near and above the Phoenix area, the White River, East Fork White River, Verde River, Gila River, San Pedro River, Aravaipa Creek, San Francisco River, Blue River, and Eagle Creek, as well as some tributaries of these streams. In New Mexico, loach minnow historically occupied the Gila River including its West, Middle, and east Forks, the San Francisco River, the Tularosa River, and Dry Blue Creek (Minckley 1973, Minckley 1985).

Loach minnow are bottom-dwelling inhabitants of shallow, swift water over gravel, cobble, and rubble substrates (Rinne 1989, Propst and Bestgen 1991). Loach minnow use the spaces between, and in the lee of, larger substrate for resting and spawning (Propst et al. 1988, Rinne 1989). The loach minnow is rare or absent from habitats where fine sediments fill the interstitial spaces (Propst and Bestgen 1991). Some studies have indicated that the presence of filamentous algae may be an important component of loach minnow habitat (Barber and Minckley 1966). Loach minnow feeds exclusively on aquatic insects (Schreiber 1978, Abarca 1987). Loach minnow live two to three years with reproduction occurring primarily in the second summer of life (Minckley 1973, Sublette et al. 1990). Spawning occurs March through May (Britt 1982, Propst et al. 1988); however, under certain circumstances loach minnow also spawn in the autumn (Vives and Minckley 1990). The eggs of loach minnow are attached to the underside of a rock that forms the roof of a small cavity in the substrate on the downstream side. Limited data indicate that the male loach minnow may guard the nest during incubation (Propst et al. 1988, Vives and Minckley 1990).

The limited taxonomic and genetic data available for loach minnow indicate there are substantial differences in morphology and genetic makeup between remnant loach minnow populations. Tibbets (1993) concluded that results from mitochondrial DNA (mtDNA) and allozyme surveys
indicate variation for loach minnow follows drainage patterns, suggesting little gene flow among rivers. The levels of divergence present in the data set indicated that populations within rivers are unique, and represent evolutionarily independent lineages. The main difference between the mtDNA and allozyme data was that mtDNA suggest that the San Francisco/Blue and Gila groups of loach minnow are separate, while the allozyme data places the Gila group within the San Francisco/Blue group. Tibbets (1993) concluded that the level of divergence in both allozyme and mtDNA data indicated that all three main populations (Aravaipa Creek, Blue/San Francisco Rivers, and Gila River) were historically isolated and represent evolutionarily distinct lineages.

**Critical Habitat**

Critical habitat for loach minnow includes approximately 522 river miles in Arizona and New Mexico, organized into four complexes. The four complexes are: the Black River complex in Apache and Greenlee counties, Arizona; the Middle Gila/Lower San Pedro/Aravaipa Creek River complex in Pinal and Graham counties, Arizona; the San Francisco and Blue Rivers complex in Greenlee County, Arizona, and Catron County, New Mexico; and the Upper Gila River Complex in Catron, Grant, and Hidalgo counties, New Mexico.

The critical habitat designation listed primary constituent elements (PCE) that are essential for the conservation of loach minnow. The PCEs are summarized below:

1. Permanent, flowing, water with no or minimal pollutant levels.

2. Sand, gravel, and cobble substrates with low or moderate amounts of fine sediment and substrate embeddedness. Suitable levels of embeddedness are generally maintained by a natural, unregulated hydrograph that allows for periodic flooding or, if flows are modified or regulated, a hydrograph that allows for adequate river functions, such as flows capable of transporting sediments.

3. Streams that have low gradients, water temperatures (between 35-85o Fahrenheit), pool, riffle, run, and backwater components, and an abundant aquatic insect food base.

4. Habitat devoid of nonnative fish species detrimental to loach minnow or habitat in which detrimental nonnative fish species are at levels which allow persistence of loach minnow.

5. Areas within perennial, interrupted stream courses which 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 constituent elements must include consideration of the season of concern and the characteristics of the specific location. The PCEs are not independent of each other and must be
assessed holistically, as a functioning system, rather than individually. In addition, the constituent elements need to be assessed in relation to larger habitat factors, such as watershed, floodplain, and streambank conditions, stream channel geomorphology, riparian vegetation, hydrologic patterns, and overall aquatic faunal community structure.

Abundance, Distribution, and Taxonomy

The status of loach minnow is declining rangewide. Loach minnow currently exist in approximately 419 miles of streams, which represents only 15 to 20 percent of their historical range. In occupied areas, loach minnow may be common to very rare. Loach minnow are common only in Aravaipa Creek, the Blue River, and limited portions of the San Francisco, upper Gila, and Tularosa rivers in New Mexico (FWS 2000).

Although it is currently listed as threatened, the FWS determined in 1994 that a petition to uplist the species to endangered status is warranted (FWS 1994). The FWS confirmed this decision in 2000 (FWS 2000). A reclassification proposal is pending.

Past Consultations

Actions that may adversely affect the species can include road crossing construction and maintenance, livestock grazing, water withdrawals, contaminants, recreational activities, and nonnative aquatic species. Our information indicates that, approximately 275 consultations have been completed or are underway for actions affecting loach minnow, often in conjunction with the threatened spikedace (Meda fulgida). The majority of these opinions concerned the effects of grazing, roads and bridges, or agency planning. Additional consultations dealt with timber harvest, fire, flooding, recreation, realty, animal stocking, water development, recovery (including loach minnow reintroduction efforts), and water quality issues.

Adverse effects to loach minnow have occurred due to these projects and many of these consultations have required reasonable and prudent measures to minimize effects to species. Only one of these projects (USDA Forest Service Application of Fire Retardants on National Forest System Lands) resulted in a biological opinion that the proposed action would likely jeopardize the continued existence of the loach minnow. Overall, the species is still declining. Additional reintroduction alternatives are being investigated.

Environmental Baseline

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 consists of the site where the No. 2083, 2006, and 2007 lines will be replaced, which includes approximately 10.15 acres of temporary disturbance to floodplains and a permanent loss of 0.30 acre of habitat to riprap, as well as downstream reaches of habitat (in this case, one meander length) that may be affected by increased sedimentation and altered fluvial function.

Loach minnow could occur in the middle to lower reaches of the San Francisco River. Recent surveys in the Clifton area have failed to collect loach minnow, but survey efforts have been irregular and limited in scope. Loach minnow were collected from the San Francisco River and the Blue River between 1980 and 1999 (Paroz and Propst 2007), and the AGFD shows several occurrence records upstream of the project area on the San Francisco River and the Blue River, the closest being approximately 7 river miles upstream (Arizona Game and Fish Department 2002). Montgomery (1985) detected loach minnow as close as approximately 4 river miles upstream of the project limits, while more recently, in 1995, loach minnow were detected along the San Francisco River at the Apache-Sitgreaves National Forests boundary (Knowles 1995), approximately 9 river miles upstream of the project area. Both surveys also detected non-native fish, including common carp (*Cyprinus carpio*), channel catfish (*Ictalurus punctatus*), and flathead catfish (*Pylodictus olivaris*) (Knowles 1995, Montgomery 1985).

Fish surveys were conducted within and adjacent to the gas line action area during October of 2007 (SWCA 2008); loach minnow was not among the species detected. These surveys did, however, detect numerous competitive and predatory nonnative fishes, both of which would be expected to limit the potential for loach minnow to persist in the action area. The nearest record of loach minnow to the EPNG gas line project site is approximately 10 river miles upstream, and was recorded in 1984. Loach minnow are benthic and may not be readily detected when low in abundance but given the presence of large numbers of predatory nonnative fishes detected during the October 2007 survey, the species is likely to be immeasurably rare in the project area.

Fish surveys were conducted by SWCA Environmental Consultants (SWCA 2008) at four sites near the U.S. Highway 191 Bridge over the San Francisco River, situated approximately one river mile upstream from the EPNG gas line action area. Using dip nets and a backpack electrofishing unit, bridge-area surveyors caught a total of 208 fish: two native desert suckers (*Pantosteus clarki*) and 206 non-natives. The non-native fishes were dominated by 166 red shiners (*Notropis lutrensis*), but also included 18 channel catfish, three common carp, 13 flathead catfish, and six fathead minnows (*Pimephales promelas*). Another fish survey of the Highway 191 bridge area was conducted on April 10, 2009, by a qualified and permitted biologist (Thomas C. Ashbeck, EcoPlan) to determine fish species composition within the area of potential effects. Ashbeck’s surveys, including 14 seine pulls and several dip nets, were conducted in all stream habitat types present in the bridge area, including riffles, pools, runs, and beneath cutbanks. Surveys failed to detect native fish, but detected over 250 red shiners.

Although loach minnow were not detected in recent surveys, finding fish when they occur at low densities is very difficult, and there are examples of native fish going undetected for years only
to have them appear again in some subsequent survey (Marsh et al. 2003). Based on these surveys and their proximity to the gas line project area, loach minnow are likely extirpated or occur in very low densities in the action area. Occurrence in the action area is likely to change over time because the species is found with regularity upstream of the project site.

The San Francisco River within the action area is habitat for the loach minnow, including perennial flows with a moderate to swift current velocity over turbulent, rocky riffles with gravel or cobble substrates. The designation of this area of the San Francisco River as critical habitat, including the presence of one or more of the PCEs essential to the conservation of loach minnow (e.g., sufficient flow velocities and appropriate gradients, substrates, depths, and habitat types), indicates general habitat suitability. However, the presence of a high-density population of non-native fish, as indicated by previous surveys, dramatically reduces the ability of the area to support loach minnow for extended periods. The distribution of the loach minnow in the San Francisco River likely fluctuates over time depending upon water levels, flooding, and other factors that affect populations of non-native fishes or may move loach minnow downstream onto BLM, State, and private lands for short periods of time.

The action area is also entirely situated within critical habitat for loach minnow. There are 126.5 miles of critical habitat designated along the San Francisco River, 235 miles within Complex 4, and 522.2 miles throughout the range. The critical habitat in the action area exhibits the aforementioned PCEs (see Status of the Species section, above) except that it is possesses nonnative fish species detrimental to loach minnow.

We have completed one section 7 consultation (BLM grazing program; File No. 02-21-96-F-0160) that includes the action area for this consultation. The aquatic environment in the action area is subject to the indirect effects from within the watershed, including livestock grazing, mining, and runoff from urban areas, roads, and trails. The action area is also occupied by non-native fishes that prey upon and/or compete with loach minnow.

**Effects of the Proposed Action**

Loach minnow are not known to occur in the action area at present, but it is situated within critical habitat for the species. The proposed action will thus have no impacts to individuals of the species.

Implementation of the proposed action, however, will result in measurable effects to loach minnow critical habitat via the placement of approximately 0.30 acre of riprap and temporary disturbance of 10.15 acres of streambed and floodplain. These effects to critical habitat will not measurably reduce the ability for the critical habitat to contribute to the recovery of the loach minnow at either the critical habitat unit (126.5 miles of the San Francisco River) or rangewide (522.2 miles in Arizona and New Mexico) scales.
PCE 1 pertains to the presence of permanent, flowing, water with no or minimal pollutant levels. PCE 2 pertains to maintenance of appropriate substrates and particle size distributions, and maintenance of a hydrograph that allows for adequate river functions. PCE 3 pertains to streams gradient; water temperature; pool, riffle, run, and backwater components; and an abundant aquatic insect food base. The proposed action will not alter the flood or base flow hydrographs of the San Francisco River, and the implementation of the proposed FERC procedures, SWPPP, and WMP will minimize the entry of sediment, construction materials, and waste into the aquatic environment. There will be residual and permanent effects to substrates and fluvial function from the placement of 0.30 acre of riprap but, as stated above, the small scale of these impacts is unlikely to preclude or reverse the role of the San Francisco River’s reach of critical habitat in recovering the species.

PCE 4 includes maintaining habitat devoid of nonnative fish species detrimental to loach minnow or habitat in which detrimental nonnative fish species are at levels which allow persistence of loach minnow. The proposed action will have no effect on nonnative fish abundance or distribution. PCE 5 addresses the need to maintain connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted. The proposed action includes a short term (58-day maximum) diversion of the San Francisco River, but this effect will be temporary. The proposed action’s lack of appreciable effects to these PCEs is also unlikely to preclude or reverse the role of the San Francisco River’s reach of critical habitat in recovering 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 action area is surrounded by private lands and thus, many of the effects of activities conducted on those lands are cumulative. The primary cumulative effects occurring within the action area are runoff from the impervious areas of the adjacent wastewater treatment plant (escape of untreated effluent is not anticipated), Highway 191, and buildings and associated structures and parking areas.

Conclusion

After reviewing the current status of the loach minnow, 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 loach minnow, nor likely to destroy or adversely modify designated critical habitat for the species. We present these conclusions for the following reasons:
• Loach minnow were not detected during fish surveys conducted in October of 2007 (SWCA 2008). Loach minnow are benthic and may not be readily detected when low in abundance; but, given the presence of large numbers of predatory nonnative fishes, the species is likely to be immeasurably rare in the project area.

• The implementation of the proposed FERC procedures, SWPPP, and WMP will minimize the entry of sediment, construction materials, and waste into the aquatic environment.

• Placement of the line segments to deeper than the anticipated scour depth will minimize the potential for exposure and future emergency excavation for replacement.

• The brevity (58 days) and scheduling of construction during the non-breeding season (October-November) will minimize the effects of sedimentation to loach minnow habitat in downstream reaches, and will allow sediments to be washed from the site prior to the next breeding season.

• The permanent placement of approximately 0.30 acre of riprap and temporary disturbance of 10.15 acres of floodplains within and adjacent to loach minnow critical habitat will affect PCEs 1, 2, and 3. PCEs 4 and 5 will not be appreciably affected. The proposed action’s total suite of effects are unlikely to affect recovery of the species, as the areal extent, though measurable, is small relative to the amount of critical habitat at the San Francisco River Unit scale (126.5 miles) and rangewide (522.2 miles).

INCIDENTAL TAKE STATEMENT

As demonstrated in the preceding narrative, loach minnow are likely present, but in numbers that render detection difficult. The species is thus unlikely to be directly or indirectly affected by implementation of the replacement of the 2083, 2006, and 2007 gas lines or the subsequent placement of riprap at the site. We therefore do not anticipate that implementation of the proposed action will result in the incidental take of any loach minnow.

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.

• The U.S. Army Corps of engineers or its likely Federal action agency successor, the Federal Energy Regulatory Commission, should assist in the implementation of the Loach Minnow Recovery Plan.

For us to be kept informed of actions minimizing or avoiding adverse effects benefiting listed species or their habitat, we request notification of the implementation of any conservation recommendations.
Reporting Requirements/Disposition of Dead or Injured Listed Animals

Upon finding a dead or injured threatened or endangered animal, initial notification must be made to the FWS's Division of Law Enforcement, 2450 West Broadway, Mesa, Arizona (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, and any other pertinent information. 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 listed animal species shall be submitted as soon as possible to the nearest FWS or Arizona Game and Fish Department office, educational, or research institutions (e.g., University of Arizona in Tucson) holding appropriate state and Federal permits.

Arrangements regarding proper disposition of potential museum specimens shall be made with the institution before implementation of the action. A qualified biologist should transport injured animals to a qualified veterinarian. Should any treated listed animal survive, the FWS should be contacted regarding the final disposition of the animal.

REINITIATION AND CLOSING STATEMENT

This concludes formal consultation on the proposed San Francisco River natural gas line replacement and bank protection project. 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 maintained (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 adversely 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 that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by this action.

We appreciate the U.S. Army Corps of Engineers’ and Federal Energy Regulatory Commission’s efforts to identify and minimize effects to listed species from this project. For further information please contact Jason Douglas (520) 670-6150, (x226) or Sherry Barrett (520) 670-6150, (x223). Please refer to the consultation number, 22410-F-2009-0:91 in future correspondence concerning this project.

Sincerely,

[Signature]
Steven L. Spangle
Field Supervisor
cc (hard copy):
Field Supervisor, Fish and Wildlife Service, Phoenix, Arizona (2)
Assistant Field Supervisor, U.S. Fish and Wildlife Service, Tucson, Arizona
Fish and Wildlife Service, Tucson, Arizona (Attn: Jason Douglas)

cc (electronic copy):
Federal Energy Regulatory Commission (Attn: Joanne Wacholder), Washington, DC
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, Arizona
Regional Supervisor, Arizona Game and Fish Department, Tucson, Arizona
El Paso Natural Gas (Attn: Amy Moore), El Paso, Texas
Literature Cited


______. 2007a. Endangered and threatened wildlife and plants; final designation of critical habitat for the spikedace (Meda fulgida) and loach minnow (Tiaroga cobitis). Federal Register 72(54):13356-13422.
