

**United States Department of the Interior**

**U.S. Fish and Wildlife Service**

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In Reply Refer To:

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April 22, 2013

Memorandum

To: Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico  
(Attn: Melissa Castiano) (ARD-ES)

From: Field Supervisor

Re: Intra-Service Biological Opinion Regarding the Proposed Issuance of an Enhancement of Survival Permit (TE-75475A-0) and Approval of a Safe Harbor Agreement with the City of Phoenix for the Tres Rios Project, Maricopa County, Arizona

This memorandum represents the U.S. Fish and Wildlife Service's (Service) final Biological Opinion (BO), pursuant to section 7 of the Endangered Species Act of 1973 (Act) (16 U.S.C. 1531-1544), as amended, on the issuance of a Section 10(a)(1)(A) enhancement of survival permit (Permit) authorizing incidental take of the Yuma clapper rail (*Rallus longirostris yumanensis*) (YCR) and southwestern willow flycatcher (*Empidonax traillii extimus*) (flycatcher) to the City of Phoenix (the Permittee). Along with the permit application, the City of Phoenix submitted a draft Safe Harbor Agreement (Agreement) for measures benefiting the YCR and the flycatcher that was available for public review for 30 days (77 FR 40628; July 10, 2012). No comments were received.

The Agreement would cover lands owned by the Permittee and the proposed operation and maintenance of the Tres Rios Project. This BO analyzes the potential effects of the issuance of the Permit and implementation of the Agreement. The Federal action under consideration is the issuance of a permit covering environmental restoration activities on 927 acres (375 hectares) of land within and adjacent to the Salt River from approximately 91st Avenue to the confluence with the Gila River, and the Gila River Channel from approximately the confluence with the Salt River, to El Mirage Road, Phoenix, Arizona, plus the Hayfield Wetlands to the east.

Though the Gila topminnow (*Poeciliopsis occidentalis occidentalis*) and the desert pupfish (*Cyprinodon macularius*) may be reintroduced into the action area, as a separate action, under the Arizona Game and Fish Department's Programmatic Safe Harbor Agreement for Topminnows and Desert Pupfish. However, we consider those potential plans to be a separate action and they are not evaluated here.

This BO is based on information provided in the Agreement, interagency coordination, field investigations, and other sources of information. Literature cited in this BO is not a complete bibliography of all literature available on the species of concern, activities covered in the Agreement and their effects, or on other subjects considered in this BO. A complete administrative record of this consultation is on file at the Arizona Ecological Services Field Office.

### **CONSULTATION HISTORY**

September 19, 2011:

City of Phoenix submits application for a section 10(a)(1)(A) enhancement of survival permit and a draft Safe Harbor Agreement for the Tres Rios Project.

July 10, 2012:

The Service issues Notice of availability of Draft Safe Harbor Agreement and Application for an Enhancement of Survival Permit for the Tres Rios Project (77 FR 40628).

November 28, 2012: Draft BO provided sent to City of Phoenix for review.

December 18, 2012: Draft BO provided sent to Arizona Game and Fish Department (AGFD) for review.

January 9, 2013: Comments on draft BO received from City of Phoenix.

January 18, 2013: Comments on draft BO received from AGFD.

February 26, 2013: Revised draft BO sent to City of Phoenix for review. No comments provided by the City.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

#### Section 10(a)(1)(A) Permit

The proposed action is the issuance of a section 10(a)(1)(A) permit supportive of the Agreement. The purpose of the Agreement is to provide and maintain environmental restoration along the Salt River within the Tres Rios Project Area to the direct and indirect benefit of two endangered species and other biological resources. The 50-year Agreement follows the Service's Safe Harbor Agreement final policy (64 FR 32717) and final regulations (64 FR 32706), as revised (69 FR 24084), pursuant to (50 CFR 17.22 and 17.32), and implements the intent of the Permittee and Service to follow the procedural and substantive requirements of Section 10(a)(1)(A) of the Act.

The Agreement proposes voluntary management activities affecting lands owned or controlled by the Permittee, and covers the YCR and the flycatcher. The Gila topminnow (*Poeciliopsis occidentalis occidentalis*) and desert pupfish (*Cyprinodon macularius*) are addressed but not covered in the Agreement because habitat would be restored, but any actual reintroduction of these species would occur in coordination with the AGFD under their programmatic Safe Harbor Agreement for these species. Other non-listed species but are addressed, though not covered, in the Agreement because each has the potential to later be added through an amendment. Under the Agreement, the Permittee agrees to enhance and maintain 927 acres of Sonoran Desert and riparian biotic communities within the action area which includes the Salt River Channel from approximately 91st Avenue to the confluence with the Gila River, and the Gila River Channel from approximately the confluence with the Salt River, to El Mirage Road, Phoenix, Arizona, plus the Hayfield Wetlands to the east. Enhancements will include, but are not limited to, planting and maintaining native vegetation.

The enrolled lands consist of approximately 927 acres (City of Phoenix owned). At later date, the Permittee and AGFD will also seek to enroll approximately 217 acres (87.82 hectares) of State owned land through a Certificate of Inclusion (B. Burger, AGFD, pers. comm.). The upstream limit of the enrolled lands is approximately at 91st Avenue on the Salt River (plus the Tres Rios Hayfield Site to the east), while the downstream limit is near the confluence of the Gila and Salt rivers, west to El Mirage Road. The total distance is approximately four miles. Constructed wetland facilities within the enrolled lands consist of the Flow Regulating Wetlands (FRW) and Overbank Wetlands (OBW). Additional enrolled lands include the North Bank Levee system, in-channel riparian corridors, and open water marshes. Land use or cover type associated with the enrolled lands consists of riparian, agricultural, freshwater marsh, open water, and areas cleared for planting by the U.S. Army Corps of Engineers (Corps). The enrolled lands include the active river channel and agricultural lands on the north river bank.

The Safe Harbor program encourages proactive conservation efforts by non-Federal landowners while providing them certainty that future property-use restrictions will not be imposed if those efforts attract listed species to the enrolled lands or result in increased numbers or distributions

of species already present. In return for voluntary conservation commitments, the Agreement will extend to the Permittee assurances allowing future alteration or modification of the enrolled property back to its original baseline conditions. The Agreement also authorizes public uses of the enrolled lands in a manner that is consistent with providing habitat for the covered species. Without this cooperative government/private effort, the enrolled lands would not otherwise be managed for the benefit of these species.

The Agreement serves as the basis for issuance an Enhancement of Survival permit under Section 10(a)(1)(A) of the Act for incidental take of covered species associated with maintenance of voluntary conservation efforts and public use of the enrolled lands. In the event of a decision by the Permittee to return any enrolled site or sites within the Tres Rios Project area to baseline conditions, and after a 60-day notification that would provide the Service a reasonable opportunity to capture and/or relocate any potentially affected covered species, the permit would authorize the Permittee to return the site or sites to baseline conditions. Neither the Agreement nor the associated permit would authorize deliberate direct take of covered species (e.g., capture, collection, or hunting). The Permittee and Service anticipate that the maximum level of take authorized under the Agreement and its associated permit may never be realized. Permit issuance will not preclude the need for the Permittee to abide by all other applicable Federal, State, and local laws and regulations that may apply.

As long as the Permittee implements the agreed-upon voluntary conservation measures and maintains baseline responsibilities on the enrolled lands, the Permittee may maintain landscape, control invasive species, provide for public recreational uses, maintain flood conveyance capacity, or make any other lawful use of the enrolled lands, even if such uses result in incidental take of individual covered species or affects occupied habitat. Whenever possible, prior to conducting such an action, the Permittee must give the Service a minimum 30-day advance notice and an opportunity to rescue and relocate individuals.

## **Stipulations**

### Permittee agrees to:

1. Establish native vegetation communities, including the following types: mesquite bosque, cottonwood/willow forest, freshwater marsh, floodplain terrace, open water, and aquatic strand, as funding allows. These communities will be managed as described in the Agreement under Section VI, Management Activities for Covered Species.
2. Provide reports to the Service on species covered in the Agreement regarding mortalities, injuries, or diseases observed on the enrolled lands. These reports will be submitted annually on March 1 for activities occurring during the previous calendar year throughout the term of the Agreement.
3. Avoid construction activities, when possible, during the breeding seasons of the covered bird species, especially when working in areas with suitable or occupied habitat.

4. Have a Service or other qualified biologist assess the suitability of existing riparian or wetland communities prior to removing the existing vegetation to establish new vegetation.
5. Notify the Service 30 days in advance of any planned land management activity (such as wetlands draining, storm drain outfall maintenance, trail maintenance, controlled burn, fencing, construction, or tilling) that the Permittee reasonably anticipates will result in take of the covered species on the enrolled lands; and provide Service a reasonable opportunity to capture and/or relocate any potentially affected covered species. The Permittee may proceed with the planned activity unless the Service requests an opportunity to exercise its rights under this paragraph, in writing, within 20 days of receiving the Permittee's notice. Land management activities may take place immediately if the Permittee determines them essential to protect public health and/or safety, in which case the Service will be notified as soon as possible.
6. Notify the Service at least 30 days in advance of any change to the enrolled property's management that the Permittee reasonably anticipates will result in the loss of individuals of a covered species or occupied habitat, including 60 days prior notification for returning the enrolled property to baseline conditions; and identify the actions that would result in changed management or return to baseline.
7. Monitor and report on compliance with this Agreement as described in the Monitoring Plan, attached to the Agreement.
8. Allow reasonable access to the enrolled lands by the Service, or another agreed-upon party, for purposes of carrying out monitoring and management activities.
9. Fund the project as outlined in the Agreement at Section XII, Funding.

The Service agrees to:

1. Provide technical assistance, to the maximum extent practicable, when requested by the Permittee; and provide information on Federal funding programs relating to the management of endangered species and their habitat.
2. Upon execution of the Agreement and satisfaction of all other applicable legal requirements, the Service will issue a permit to the Permittee in accordance with section 10(a)(1)(A) of the Act, authorizing incidental take of the covered species as a result of lawful activities within the enrolled lands that are described in this Agreement. The term of the permit will be 50 years. The permit shall not impose additional requirements or limitations beyond those expressly provided in this Agreement.
3. Ensure that the Permittee is implementing the terms of the Agreement.

4. Perform or assist with biological monitoring, unless conducted solely by the Permittee. The Service shall provide written notice of the desired access at least 30 days in advance. In the event of an emergency, the Service may enter the premises to care for and protect covered species at any time after contacting the landowner.

### **Management Activities**

The Permittee will establish natural aquatic and riparian community to provide habitat that will serve to provide a net conservation benefit to the covered species listed in Section II, within a portion of the Salt and Gila River floodplains. Incidental to this objective is the creation of passive recreational opportunities associated with the restored habitat areas, including the use of maintenance roads as recreational trails for walking, bicycling, horseback riding, and creating areas for observing wildlife and learning about the natural history of the river. Recreational features will include interpretive signage that educates visitors about the sensitive habitat and encourages respect for wildlife and plant communities. The conservation measures would include the establishment of several types of wetland and riparian communities, including mesquite bosque, cottonwood/willow forest, freshwater marsh, floodplain terrace, open water, and aquatic strand. Each of these communities is associated with Sonoran Desert riparian corridors and each historically existed in the Salt and Gila River floodplains.

The Permittee has developed a monitoring plan for the covered species which is included as an attachment to the Agreement. Monitoring will occur annually. The intent is to manage and maintain this project as a natural habitat area for the net conservation benefit to the covered species.

The Permittee will maintain the road system to the extent necessary to ensure adequate access for maintenance purposes, as described above.

The Permittee may alter the constructed habitat either mechanically or allow natural changes, in order to allow the sustainable balance of plant communities to occur.

The Permittee will remove non-native species to promote successful establishment and survival of native plant communities. This may require the use of herbicides and/or pesticides. If these products are used at all, they must be applied in full compliance with label guidelines for dilution and application. If the Permittee determines that an insecticide or herbicide treatment must be used, he/she must avoid contamination of riparian areas by limiting use of chemicals near them and by disposing of rinse water and empty containers in strict accordance with label directions.

The Permittee will manage the habitat to control vectors (i.e. mosquitos) and other potential public health hazards. While the habitat features are being designed to minimize potential vector breeding, some use of pesticides may be required. If these products are used at all, they must be applied in full compliance with label guidelines for dilution and application. If the Permittee determines that an insecticide or herbicide treatment must be used, he/she must avoid contamination of riparian areas by limiting use of chemicals near them and by disposing of rinse water and empty containers in strict accordance with label directions.

The Permittee will remove trash, litter, and debris from the project area. Dead or dying vegetation will be removed if it impacts public health or safety.

The Permittee will perform water quality monitoring as required by any State or Federal permits. A portion of the wetlands being constructed as part of the project will be considered part of the 91st Avenue Wastewater Treatment Plant facility, and will need to be maintained as a treatment process.

The Permittee will allow recreation activities to occur within the enrolled lands. Recreational activities will be restricted to established trails and public areas or off-trail as appropriate while under supervision. Informational signage will be installed in order to encourage proper use and care for the habitat areas.

The Permittee will undertake or allow maintenance activities to ensure that the flood control capacity of the river channel is acceptable, and the structural integrity of the flood control levee is maintained.

The Permittee is also authorized to continue to allow storm water from the separate municipal storm water and sewer systems to be discharged on and to the enrolled lands.

The Permittee is authorized to implement management activities not described in the Agreement, as long as such actions do not cause a deterioration of habitat below the baseline conditions and do not detract from the beneficial actions set forth by the Agreement. The Permittee will notify Service 30 days in advance of any activities that the Permittee reasonably anticipates will result in the loss of individuals of a covered species or occupied habitat. The notification will allow Service an opportunity to capture and relocate the affected individuals, thereby minimizing the impact of the authorized take. Unless absolutely necessary, the Permittee will not undertake potentially disturbing actions during the breeding season of any covered species, to minimize the impact of authorized take by avoiding any possible disruption of reproductive efforts.

Exceptional situations such as natural disasters (e.g., excessive rainfall, flooding, fire, extreme drought, insect infestations, or epidemic disease) may require initiation of certain management actions, such as salvage or sanitation harvesting within less than 30 days prior to notification. The Permittee will notify Service within 10 days of discovering such a situation, and will make reasonable accommodations to Service for survey and/or relocation of covered species individuals prior to the action. The Parties acknowledge that survey and translocation may be precluded by certain urgent situations.

This Agreement will grant to Service, after reasonable prior notice, the right to enter the enrolled lands for the purpose of ascertaining compliance with the Agreement and for censusing, banding, and in certain circumstances, for relocating covered species, as well as, to take other measures that may be necessary. In addition, the Permittee will complete and submit an annual report of activities related to species management to Service, as well as other reports as required by the Agreement.

## **Specific Management Activities for the Flow Regulating and Overbank Wetlands**

### Water Levels

The Permittee will regulate water levels in the marsh sections of the FRW and OBW facilities, located near 91st Avenue, on a seasonal basis and for maintenance activities. Water levels will also be lowered to accommodate vegetation management and to facilitate mosquito management efforts.

### Marsh Vegetation Management

The Permittee may conduct controlled burns to maintain marsh vegetation. After roughly 2 to 3 growing seasons, it is likely that some of the senesced biomass may need to be removed from the emergent marsh areas. During the 13-year Tres Rios Demonstration Project, controlled burning was shown to have the most efficacy.

Over the life of the project, emergent marsh areas within the FRW cells and the OBW facilities may be burned during the November to February time-frame which is outside of the March through September breeding season for Yuma clapper rail. Approximately one-third of each cell's emergent marsh zone(s) or in the case of the OBW, marsh areas, may be burned annually. This may be repeated each year such that over the course of three years each cell's entire emergent marsh zones may have received the treatment.

### Cottonwood/Willow Recruitment

The Permittee may facilitate the recruitment of cottonwood/willow gallery forests within the FRW and OBW facilities. Over the life of the project, select areas may be prepared to accept wind-blown seed from Fremont's cottonwood and Goodding's willow. This may be done in an attempt to provide a sustainable riparian system with variable size and age classes of these dominant canopy species.

1. Areas downwind of mature trees may be scarified and moistened so that wind-blown seeds are stranded there. Moisture levels are maintained in those areas so that the stranded seeds can germinate and grow. Watering is continued and removal of undesirable vegetation is conducted to encourage growth of the seedlings.

## **Monitoring Plan**

### General Monitoring Strategy

As described in the Agreement, to the extent practicable and feasible, and based on available resources and funding, the Permittee will strive to conduct surveys for covered threatened and endangered species within habitat areas on an annual basis. At a minimum, the Permittee will have a qualified biologist conduct an annual habitat assessment field visit. The purpose of the field visit will be to evaluate the project area and compare the existing and developing habitats, with currently accepted definitions of suitable habitat for covered species. Habitat quality will



be determined based on information contained in existing survey protocols and recovery plans. The Service and the AGFD will participate when possible.

As suitable habitat develops for covered species, or prior to ground-disturbing activities within existing suitable or occupied habitat, the Permittee will contract a qualified biologist to perform annual surveys for the covered species. The surveys will be performed in accordance with existing standardized protocols accepted by the Service, and by an individual or individuals holding the required permit issued by the Service and the State of Arizona to perform the survey.

#### Southwestern Willow Flycatcher

Southwestern willow flycatcher habitat is generally found within dense riparian vegetation patches near surface water or saturated soils of a watercourse or wetland. Potentially suitable habitat for flycatchers is found throughout the Tres Rios project area mainly along the active flood channel and along drainage outfalls from surrounding areas. The Permittee will strive to assess and survey the existing flycatcher suitable habitat along the main channel on an annual basis. At a minimum, surveys will be conducted prior to any ground-disturbing activities scheduled to occur in suitable habitat, especially those that occur during the flycatcher breeding season (April 15 – September 30).

Habitat potentially suitable for flycatchers will be created within the OBW facilities. An annual assessment will be made of the developing habitat, with suitable habitat surveyed each year using established call stations along a permanent transect. We estimate that approximately 80 call stations will be needed to adequately cover the OBW area. At this time, the design specifics of the main channel habitat restoration effort is not known; however as that habitat develops it will be included in the annual habitat assessment effort with call stations identified to adequately survey the suitable habitat.

#### Yuma Clapper Rail

YCR habitat is generally found in freshwater marshes dominated by cattail or bulrush. Cattail stands are found throughout the project area along the main river channel. The Permittee will strive to survey the existing YCR suitable habitat along the main channel on an annual basis. At a minimum, surveys will be conducted prior to any ground-disturbing activities scheduled to occur in suitable habitat, during and outside the YCR breeding season (March 1 – September 30). The U.S. Bureau of Reclamation (USBR) and AGFD have established survey locations throughout the main river channel portion of the project area. The Permittee will coordinate with AGFD and USBR, prior to conducting YCR surveys.

New habitat for YCRs will be created within the FRW facilities. An estimated 10 call-point locations will be needed to survey this area for YCR when the habitat becomes suitable. At this time, the design specifics of the main channel habitat restoration effort are not known; however as that habitat develops it will be included in the annual habitat assessment effort with call stations identified to adequately survey the suitable habitat.

## Annual Reports

Annual reports from the Permittee will be due March 1 of each year and copies will be provided to all Parties. Annual reports will include a detailed description of the existing habitat conditions within the enrolled lands, an estimate of the population size or acreage of occupied habitat for each covered species, a description of each covered species' distribution and productivity on the enrolled lands, and any conservation measures implemented during the year. The results of the species surveys and information on the sightings of individuals of covered species will also be included. The annual report will denote whether the data provided are from the Permittee, professional scientist, or other specific individual or entity. Photographs at data points and affected areas will be provided.

## **STATUS OF THE SPECIES**

### **Southwestern willow flycatcher**

The southwestern willow flycatcher was listed as endangered, without critical habitat on February 27, 1995 (60 FR 10694). Critical habitat was designated on July 22, 1997 (62 FR 39129), a correction notice published on August 20, 1997 (62 FR 44228.); a redesignation was published on October 19, 2005 (70 FR 630885). A revision to the critical habitat designation published January 3, 2013 (78 FR 344).

The flycatcher is a small passerine bird. The subspecies is a neotropical migrant that breeds in the southwestern United States and winters in Mexico, Central America, and northern South America (Paxton et al. 2007). The flycatcher is a riparian obligate breeder that only breeds near surface water or saturated soil along rivers and streams, reservoirs, cienegas and other wetlands. Breeding flycatchers are found in dense riparian environments consisting of contiguous vegetation or a mosaic of dense vegetation interspersed with multiple small openings (Ellis et al. 2008, Paradzick and Woodward 2003, Service 2002, Service 2005). Flycatcher occupied vegetation is dominated by willow (*Salix* spp.), tamarisk (*Tamarix*), box elder (*Acer negundo*), or live oak (*Quercus agrifolia*) (Durst et al. 2008, 70 FR 60885).

The species nests in willow and other plants such as salt cedar. Open water, marshes, or saturated soil are typical of flycatcher habitat. The flycatcher arrives on breeding grounds in late April and May (Sogge and Tibbitts 1992, Sogge and Tibbitts 1994, Muiznieks et al. 1994, Maynard 1995, Sferra et al. 1995, 1997) and nesting begins in late May and early June. Young fledge from late June through mid-August (Willard 1912, Ligon 1961, Brown B.T. 1988a,b, Whitfield 1990, 1994). A high rate of brown-headed cowbird (*Molothrus ater*) parasitism is a major factor in flycatcher population declines or, at a minimum, has resulted in reduced or complete nesting failure (Muiznieks et al. 1994, Whitfield 1994, Maynard 1995, Sferra et al. 1995, Sogge 1995a,b,c, Whitfield and Strong 1995, Brown B.T. 1988a,b, Whitfield 1990, Hull and Parker 1995). The flycatcher is an insectivore, foraging primarily on true flies; ants, bees, and wasps (Hymenoptera); and true bugs (Hemiptera) (Drost et al. 1998), although other insect prey are also probably taken.

While numbers have significantly increased in Arizona (145 to 459 territories from 1996 to 2007) (English et al. 2006, Durst et al. 2008), overall distribution of flycatchers throughout the state has not changed much. Currently, population stability in Arizona is believed to be largely dependent on the presence of two large populations (Roosevelt Lake and San Pedro/Gila River confluence). Therefore, the result of catastrophic events or losses of significant populations either in size or location could greatly change the status and survival of the bird. Conversely, expansion into new habitats or discovery of other populations would improve the known stability and status of the flycatcher.

### **Yuma clapper rail**

The YCR was listed as endangered without critical habitat on March 11, 1967 (32 FR 4001) under Federal endangered species legislation enacted in 1966 (Public Law 89-669) because of low numbers of birds and loss of breeding habitat along the lower Colorado River.

The YCR is a medium sized marsh bird with a long, down-curved beak. The YCR has two major population centers in the United States; the Salton Sea and surrounding wetlands in California, and the lower Colorado River marshes from the border with Mexico to Havasu National Wildlife Refuge. Smaller numbers of YCR are found along the lower Gila River in Yuma County, the Phoenix metropolitan area (including portions of the Gila, Salt and Verde rivers) in Maricopa County, Roosevelt Lake in Gila County, Picacho Reservoir in Pinal County, and the Bill Williams River in La Paz County, Arizona. YCR have also been documented from southern Nevada in Clark County (McKernan and Braden 2000) and the Virgin River in Washington County, Utah and Mohave County, Arizona (McKernan and Braden 2000).

Habitat requirements of the YCR include freshwater or brackish stream sides and marshlands associated with heavy riparian and wetland vegetation, especially cattail and bulrush (Grinnell and Miller 1944). Openings within the wetland, especially channels with flowing water, are also important. Habitat edges between marshes and terrestrial vegetation are important, but the main factors determining habitat use are the annual range of water depth and the existence of residual mats of marsh vegetation (Eddleman 1989). The most productive YCR areas consist of a mosaic of uneven-aged marsh vegetation interspersed with open water of variable depth (Conway et al. 1993).

Nesting behavior begins in February with nesting commencing in mid-March and running through early July. Nests are primarily built in mature cattail/bulrush stands, which provide nest building material and cover. It is thought that young YCR fledge within 63-70 days and most hatching occurs during the first week of June. Non-native (introduced) crayfish (*Procambrus clarki*) form the primary prey base for YCR today (Todd 1986). Prior to the introduction of crayfish, isopods, aquatic and terrestrial insects, clams, plant seeds, and small fish dominated the diet.

Annual survey data compiled by the Service for the period 1990 through 2010 documented between 464 and 1076 YCR observed (via calls or visual observation) at the survey sites. Surveys in 2009 documented 665 birds, with 564 documented in 2010. These figures are of actual birds, not extrapolated to provide a population estimate. The unlisted YCR population in

Mexico was estimated to contain 6300 birds (Hinojosa-Huerta et al. 2000). The amount of movement between the two populations is unknown.

## **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.

### **Status of the species within the action area**

#### Southwestern willow flycatcher

Potentially suitable habitat for the flycatcher exists in the Tres Rios area, but no resident or breeding pairs have been identified. Using survey data over an eight year period (1995-2003), individual migrant flycatchers were detected three times and two territorial males were detected one time (in 2002). The flycatcher baseline was determined based on actual survey results, using the two territorial males. In order to account for all the flycatchers detected in the surveys, a total of two territories, each with a size of 11.1 acres (4.49 hectares) was used (taken from the Roosevelt Habitat Conservation Plan – Appendix II of the Final Environmental Impact Statement, submitted by the Salt River Project to the U.S. Fish and Wildlife Service, December 2002). The 11.1 acre territory size is used by the AGFD model as the “best available estimate of the amount of habitat needed by adult and juvenile flycatchers for refuge, dispersal, and foraging in the vicinity of nests and territories.” The total number was rounded to the next highest half acre to give 22.5 acres (9.11 hectares) (City of Phoenix owned) as the baseline for the flycatcher. This acreage estimate was meant to be a long-term estimate of habitat to be maintained over the entire project area for flycatchers, and was not meant to be tied to the original location where flycatcher territories were detected. Therefore, for this Agreement, the City of Phoenix will maintain 22.5 acres as suitable habitat for flycatchers over the entire enrolled lands in the Tres Rios project area.

#### Yuma clapper rail

Surveys for the YCR have been conducted annually since 1996, primarily by AGFD staff. These surveys have documented YCR within the enrolled lands area, generally found in cattail, or sometimes bulrush, stands 10 meters by 10 meters (32.8 feet by 32.8 feet) and larger. However, neither the Cobble or Hayfield wetland sites seemed to be occupied. Based on the survey results, all cattail and bulrush stands within the enrolled-lands area (excluding the Cobble and Hayfield wetlands habitat) were assumed to be occupied for establishing a baseline. To quantify the total acreage of cattail and bulrush habitat in the project area; aerial photographs, ground examination, and visual inspection by air (from a helicopter) were used. Total acreage of likely YCR habitat on City of Phoenix owned land was estimated at 5 acres (2.02 hectares). An additional one acre of cattail habitat, that must be maintained for the YCR, was identified on State-owned land that

AGFD will seek to enroll through a Certificate of Inclusion. However, the acreage on State-owned land will need to be re-evaluated at the time of enrollment under the Certificate of Inclusion because the amount of land expected to be enrolled has recently increased. This baseline establishment is intended to reflect the “natural” steady-state cattail acreage in the enrolled lands. The Permittee and any future enrollees into the Agreement will be responsible for maintaining the cattail acreage that was originally located on their enrolled lands.

Surveys conducted in 2011 documented that suitable habitats were occupied (Lowery et al. 2011). However, surveys in 2012 did not document YCR in the project area and it was noted that suitable habitat had largely been removed by construction related to the Tres Rios Project (AGFD 2012).

### **Factors affecting species environment within the action area**

Under section 6 of the Flood Control Act of 1938, section 321 of the Water Resources Development Act (WRDA) of 1992, and section 321(b)(2) of the WRDA of 1996, the Secretary of the Army is authorized to participate water resource development projects for the purposes of providing flood control, improving water quality, and providing ecosystem restoration. The U.S. Army Corps of Engineers and the City of Phoenix, in coordination with other Federal, State, and local partners, have committed to construction of a wetland complex for treatment of effluent wastewater, and to restoration of native riparian vegetation communities. Previously existing facilities include the demonstration scale facilities known as the Hayfield and Cobble sites. Additionally, the Corps and cities of Tempe and Phoenix have cooperatively restored native riparian and wetland vegetation upstream of the action area as part of the Rio Salado Restoration Project.

The project area is being restored for the purposes of habitat recovery, flood protection and passive recreation. Improvements include installing several types of wetland and riparian biotic communities, including mesquite bosque, cottonwood/willow forest, freshwater marsh, floodplain terrace, open water, and aquatic strand. The development of these environmental improvements is currently in progress. Prior to these conservation efforts, the enrolled lands were owned and operated by private landowners for a variety of uses. Predominant uses included sand and gravel mining, agricultural uses, and residences. These activities, in addition to the interruption of the river’s natural flood regime caused by upstream dams, have likely resulted in significant reduction in native riparian communities.

Due to upstream river management of dams and reservoirs, this portion of the Salt River in the project area receives little water from the Salt River watershed. Drought conditions have further reduced stream flow. Available water in the project area is currently limited to runoff from storm water and effluent discharge. Effluent from the 91<sup>st</sup> Avenue Wastewater Treatment Plant supports wetland and riparian vegetation within the project area. The City of Phoenix is the 6th largest city in the nation, and outdoor recreation along the Salt River is popular as evidenced by the success of the nearby Rio Salado Project. The Salt River is used by bikers, equestrians, and hikers, and the cities of Tempe and Phoenix sponsor educational programs for school children to learn about riparian ecosystems and nature.

## EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

The proposed action will authorize the issuance of a 10(a)(1)(A) permit for two listed species. The Permittee agrees to voluntarily manage the enrolled lands in a manner designed to produce a net conservation benefit to the covered species, by implementing the conservation measures described in the Agreement to increase species populations and enhance, restore, and/or maintain suitable habitat. It is anticipated that the net conservation benefit will be sufficient to contribute, directly or indirectly, to recovery of the covered species, after taking into account the length of the Agreement and any off-setting adverse effects of authorized take for a period up to 50 years.

The Permittee and Service anticipate that the Agreement will result in an increased number and/or distribution of the covered species, and/or an increase in the total area of occupied suitable habitat, within the enrolled lands, consistent with recovery goals. Without this cooperative effort, we anticipate a reduction in water and habitat in the project area. Accordingly, these lands may not otherwise be utilized, to any significant degree, by the covered species in the foreseeable future. The Agreement will also provide an example of a mutually beneficial relationship between government agencies for the benefit of endangered and threatened species, and may provide evidence that such species can coexist with current land-use practices. This cooperative effort will create an urban wildlife area, provide hiking and birding opportunities where the Gila, Salt, and Agua Fria rivers join.

Conservation actions, through the Stipulations, would include the establishment of several types of wetland and riparian communities, including mesquite bosque, cottonwood/willow forest, freshwater marsh, floodplain terrace, open water, and aquatic strand. Each of these communities is associated with Sonoran Desert riparian corridors and each historically existed in the Salt and Gila River floodplains. The estimated community acreages for the FRW facilities is 64 acres (24.9 hectares) wetland, 102 acres (41.27 hectares) aquatic, 6 acres (2.43 hectares) cottonwood/willow forest, 17 acres (6.88 hectares) mesquite bosque, and 32 acres (12.95 hectares) floodplain terrace, for a total of 221 acres. The estimated community acreages the OBW facilities is 11 acres (4.45 hectares) wetland, 9 acres (3.64 hectares) aquatic, 12 acres (4.86 hectares) cottonwood/willow forest, and 29 acres (11.74 hectares) mesquite bosque, for a total of 61 acres. The estimated acreage for proposed in-channel restoration areas (based on adjusted estimates and current expectations, from the Tres Rios, Arizona Feasibility Study, Feasibility Report dated April 2000 for Alternative 3.5, 30-years post-construction) is 93 acres (37.64 hectares) open water/wetland marsh and 82 acres (33.18 hectares) cottonwood/willow forest, for a total of 175 acres.

Management actions associated with the project could affect species or their habitats. Vegetation could be affected by maintenance of roads and trails that may require removal of vegetation through mechanical means or the use of herbicides. Vector control (i.e. mosquitos) may require use of pesticides in habitat areas. Protection of public health or safety may require removal of dead or dying vegetation. Recreational use may result in unauthorized traveling of restricted habitat areas, although the City will have trails for authorized travel. Maintenance of flood control capacity could affect habitats through modification of water supply or vegetation. Maintenance of effluent polishing function may require burning of marsh habitat. Although these activities could adversely affect YCR or southwestern willow flycatcher, through alteration of habitats such as cattail marsh, we do not anticipate significant disruption of basic life cycle functions because the City will implement conservation measures, through the Stipulations, to minimize effects. These include: avoidance of construction during breeding seasons, notification to Service prior to habitat modifications, application of pesticides in accordance with label restrictions, and implementation of monitoring. Nevertheless, there is potential for the suitability of these areas for YCR to be negatively affected.

Management and monitoring of the action area will create passive recreational opportunities, while ensuring the conservation of the riparian zone and protection of listed species. Given the location within city limits, recreation is likely to continue and to expand as the City of Phoenix continues to grow. The proposed action also provides for the Permittee to return the enrolled lands to baseline condition. If this were to occur, the Service would have the opportunity to remove listed species. We anticipate that the effect of the Agreement and the activities it covers, which authorize take of listed species, will provide a net conservation benefit to the covered species.

The Permittee agrees to voluntarily manage the enrolled lands in a manner designed to provide a net conservation benefit to the covered species, by implementing the conservation measures described in this Agreement aimed at increasing species populations while enhancing, restoring, and maintaining suitable habitat. It is anticipated that the net conservation benefit will be sufficient to contribute, directly or indirectly, to recovery of the covered species, after taking into account the length of the Agreement and any off-setting adverse effects of authorized take. Although the activities stipulated in this Agreement may not permanently conserve or recover covered species populations or their habitats, it does provide important benefits to the covered species including, but not limited to the following: maintenance, restoration, and enhancement of suitable habitat; maintenance and increase of population numbers or distributions; increase in habitat connectivity; reduction of habitat fragmentation; insurance against catastrophic events; establishment of buffers for other protected areas; creation of areas for testing and implementing new conservation strategies; and public education concerning threatened and endangered species and ways to preserve them.

As described above, the habitat restoration efforts of this project involve creating approximately 221 acres (89.44 hectares) and 61 acres (24.69 hectares) of wetlands and associated habitats within the FRW and OBW facilities, respectively, and approximately 175 acres (70.82 hectares) of in-channel desert river vegetation. The restoration efforts will include many different types of native plant species. The following associations have been made based upon the identified species within this Agreement and the habitat that will be created within the project area. The

YCR requires habitat along stream sides or marshlands associated with heavy riparian and wetland vegetation, especially cattail and bulrush. Within the project area, approximately 75 acres (30.35 hectares) of wetland marsh communities within the FRW and OBW facilities, and approximately 93 acres of in-channel open water marsh communities, will be created. The flycatcher prefers dense riparian environments, open water, and marshes. Community types currently exist or may develop include monotypic willow, monotypic exotic, native broadleaf-dominated, and mixed native/exotic (Sogge et al. 1997), though restoration efforts will focus on native plant species. Habitat may be located within the approximately 82 acres of in-channel cottonwood/willow association that will be created. These acreage estimates are based on the Tres Rios, Arizona Feasibility Study, Feasibility Report dated April 2000 for Alternative 3.5 (30-years post-construction) or on preliminary design; and may continue to be refined during design, construction, and implementation.

Therefore, it is anticipated that the implementation of this Agreement and the activities it covers, which are facilitated by the authorized take, will provide a net conservation benefit to the covered species. Nevertheless, the failure of the anticipated benefits to accrue as expected shall not be deemed a breach of this Agreement.

## **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.

Human activity has dramatically influenced the current condition of the action area. The Salt and Gila rivers have experienced a multitude of anthropogenic impacts resulting in substantial changes in hydrologic regime and biological resources. Historical mining and ranching have resulted in flow diversions and vegetation removal. The introductions of various non-native plants and animals, such as salt cedar, have changed fire regimes and species composition. Large-scale dams and diversions constructed for irrigation, water storage, and flood control have caused dramatic modifications to the aquatic and riparian environments resulting in significant shifts in biotic communities, and these effects are likely to continue to be realized long into the future. Ongoing farming and residential development continues to affect the project area through water diversions, agricultural return water, construction and maintenance of levees, and recreational use.

Additionally, much of the Southwestern United States, including the greater Phoenix area, is expected to be affected by drought and other climate conditions in the foreseeable future. Although the Southwest is expected to become drier and hotter, we are unable to assess the full magnitude and extent of these changes.

## **CONCLUSION**

After reviewing the current status of the southwestern willow flycatcher and Yuma clapper rail the environmental baseline for the action area, the effects of the proposed issuance of an



enhancement of survival permit, and the cumulative effects, it is the Service's biological opinion that the issuance of the permit, as proposed, is not likely to jeopardize the continued existence of the southwestern willow flycatcher or Yuma clapper rail. Critical habitat for neither species has been designated in the action area, therefore none will be affected. We base these conclusions on the following:

1. The length of the Permit and conservation goals will increase the availability of habitat for listed species and provide for their expansion into new areas.
2. Habitat restoration and/or improvements will provide for species' reproduction and/or dispersal by developing and maintaining habitats that can support these functions.
3. The City of Phoenix has committed to significant habitat protection measures. The return to baseline conditions is not expected to impact existing populations of southwestern willow flycatcher or Yuma clapper rail.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including the Conservation Measures that were incorporated into the project design.

### **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined (50 CFR 17.3) 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. Harass is defined (50 CFR 17.3) 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. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The Agreement with Phoenix clearly identifies the actions and activities that will be implemented to provide a net conservation benefit to the southwestern willow flycatcher and Yuma clapper rail covered by the Section 10(a)(1)(A) permit. Anticipated effects likely to result from the proposed actions and the return to the baseline conditions by participants under the Agreement have been identified in the Agreement. All management activities described in the Agreement and the Section 10(a)(1)(A) permit are hereby incorporated by reference as reasonable and prudent measures and terms and conditions within the incidental take statement pursuant to 50 CFR 402.14(i). Such terms and conditions are non-discretionary and must be undertaken for the exemptions under section 10(a)(1)(A) and section 7(o)(2) of the Act to apply. If Phoenix fails to adhere to these terms and conditions, the protective coverage of the Section

10(a)(1)(A) permit and Section 7(o)(2) may lapse. However, the Service and Phoenix may agree that modifications to the management activities are needed. The process for modifications in management activities to be incorporated is described within the Agreement. These new modifications will be incorporated as reasonable and prudent measures, superseding the former management activities.

### **AMOUNT OR EXTENT OF TAKE**

Safe Harbor Agreements are written in anticipation of “take” of the covered species at some point in the future. Take cannot occur below the established baseline for a covered site. Take is expected to occur as a result of conservation activities, otherwise legal activities, and the potential return to baseline at the termination of the Agreement and its associated section 10(a)(1)(A) permit. Measures will be implemented to prevent or reduce levels of direct incidental take of individuals; however, incidental take of both southwestern willow flycatcher and Yuma clapper rail could result under a variety of circumstances as described in the Proposed Action. The ultimate level of incidental take anticipated is all southwestern willow flycatcher and Yuma clapper rail occurring in habitats created above the baseline condition. This take may be in the form of harm or harassment that occurs from the degradation and/or loss of habitat, or perhaps during attempted capture to relocated individuals. Predicting how many individuals will utilize the action area is difficult because of the dynamic and stochastic influence of riverine processes on riparian and wetland ecosystems, and the 50-year life of the project.

### **EFFECT OF THE TAKE**

In the accompanying biological opinion, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

### **REASONABLE AND PRUDENT MEASURES AND TERMS AND CONDITIONS**

The Service believes the following reasonable and prudent measures, and terms and conditions, are necessary and appropriate to minimize or avoid impacts of incidental take to southwestern willow flycatcher and Yuma clapper rail. In order to be exempt from the prohibitions of section 9 of the Act, the Permittee must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary.

1. The Service shall include the Agreement’s conservation measures in the section 10(a)(1)(A) enhancement of survival permit and require the Permittee to comply with the permit and the Agreement, including reporting requirements.
  - 1.1. Implement conservation measures in accordance with the permit and Agreement.  
Submit reports annually and include information regarding monitoring, incidental take, and all other actions undertaken to implement the Agreement.

2. The Service shall require the Permittee to monitor the effects of controlled burning on cattails. If burning is found to restrict cattail growth, the Permittee shall contact the Service to discuss the need to modify the burning schedule to allow for proper regeneration.
  - 2.1. If monitoring of cattails reveals that burning one-third of each cell annually restricts growth, to the detriment of YCR habitat, the prescription should shift to one-fourth of each cell annually.
3. The Service shall require the Permittee to apprise the Service of the results of surveys for threatened and endangered species at the earliest possible time.
  - 3.1. Submit survey forms compiled during surveys conducted for the covered species by the end of the applicable survey season.

Review requirement: The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action.

### **Disposition of Dead or Injured Listed Species**

Upon locating a dead, injured, or sick listed species initial notification must be made to the U.S. Fish and Wildlife Service, Office of Law Enforcement, (Resident Agent in Charge), 4901 Paseo del Norte NE, Suite D, Albuquerque, New Mexico, 87113, telephone: 505/248-7889 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 sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state.

### **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.

1. Encourage the City of Phoenix to continue to coordinate with the Service, AGFD, Corps, and other affected stakeholders, to provide for cooperative relationships that encourage the most productive enhancement of habitat along the Salt River.

## REINITIATION NOTICE

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

We appreciate your commitment to threatened and endangered species. If you have questions regarding this BO or the Agreement, please contact Mike Martinez (x 224) or Debra Bills (x 239). Please refer to the consultation number 22410-2012-F-0412 in future correspondence concerning this project.

/s/ Steven L. Spangle

cc: (hard copy)

Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ  
Director, Parks and Recreation Department, City of Phoenix, Phoenix, AZ  
District Engineer, Army Corps of Engineers, Arizona Nevada Area Office, Phoenix, AZ

cc: (electronic)

Wildlife Biologists, Fish and Wildlife Service, Phoenix, AZ (Beatty, Fitzpatrick)

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