# United States Department of the Interior

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**In reply refer to:**
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02EAAZ00-2015-F-0590

August 6, 2015

Memorandum

To: Area Manager, Bureau of Reclamation, Lower Colorado Region, Phoenix Area Office

From: Field Supervisor, Arizona Ecological Services Office, U.S. Fish and Wildlife Service

Subject: Biological Opinion for the Expansion/Modernization of the Aquatic Research and Conservation Center (ARCC)

Thank you for your March 18, 2015 memorandum, received March 27, 2015, requesting initiation of formal consultation under section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). This consultation concerns the possible effects of the expansion and modernization of the Aquatic Research and Conservation Center (ARCC), Yavapai County, Arizona on the threatened northern Mexican gartersnake (*Thamnophis eques megalops*).

Critical habitat is proposed in the Oak Creek Subunit, which includes the Arizona Game and Fish (AGFD) property on which ARCC is located. Although the proposed critical habitat rule stated that "this subunit contains sufficient physical or biological features, including primary constituent elements (PCEs) 1 (aquatic habitat characteristics) and 2 (terrestrial habitat characteristics)..." (USFWS 2013, p. 41564), the approximately 1.6 acre project area does not contain the aquatic habitat characteristics or the terrestrial habitat characteristics of proposed critical habitat. This is not to say that the AGFD property (149 acres total) does not contain these PCEs, but that the project footprint for this area does not. Because the project area does not include the proposed PCEs of critical habitat , the Bureau of Reclamation (BOR) has determined there will be no effect to proposed critical habitat. "No effect" determinations do not require review from the Fish and Wildlife Service (FWS) and will not be addressed further.

This biological opinion is based on information provided in the March 2015, biological assessment (BA), conversations and electronic correspondence with your staff, and other sources of information found in the administrative record supporting this BO. Literature cited in this BO is not a complete bibliography of all literature available on the species of concern or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

**Consultation History**

We received your March 18, 2015 request for formal consultation and the BA on March 27, 2015.

## BIOLOGICAL OPINION

## DESCRIPTION OF THE PROPOSED ACTION

Background

The proposed action is for the BOR, in cooperation with AGFD and FWS, under the Gila River Basin Native Fishes Conservation Program (Program), to fund and carry out the expansion and modernization of an existing native fish hatchery owned and operated by AGFD. This action will enhance the facility's utility in assisting the Program in meeting its goals to conserve and recover federally-listed native fishes in the Gila River Basin. The proposed project includes expanding the existing hatchery footprint, constructing new fish housing/rearing ponds and an office/research/feed storage building, installing new stream raceways, sumps, and an artesian well, upgrading electrical and aeration systems, and other relatively minor modifications.

Originally, AGFD's Bubbling Ponds State Hatchery, located near Cornville, Arizona, was selected as the general site to develop a native fish hatchery because of its centralized location within the Gila River basin, ownership by AGFD, and because its water source is artesian and therefore does not require unreliable electrical transmission to pump water. An artesian well was drilled to initially provide water to a propagation research building, and then to a series of circular raceways that housed and propagated native fishes. Over time, makeshift stream raceways and small concrete ponds were added to the hatchery to expand its holding, propagation, and rearing capabilities. This dedicated native fish hatchery originally was named the Bubbling Ponds Native Fish Conservation Facility, but recently was renamed the Aquatic Research and Conservation Center (ARCC) to distinguish it from the older, established Bubbling Ponds State Hatchery that serves other fish management objectives. From this point forward, we will refer to the hatchery as ARCC.

The increasing importance of ARCC to the Program has been steadily outgrowing its capabilities. Additional species are expected to be brought to the hatchery in the immediate future, which will require expansion of the facility's footprint to accommodate more ponds and raceways. In addition, there is a strong need to modernize the facility to upgrade its raceways, plumbing, and biosecurity capabilities, as well as add a water quality enhancement and monitoring system.

Proposed Action

As stated above, the proposed action is to expand and modernize ARCC. The facility is located in Section 23 of Township 16 North, Range 4 East of the Gila and Salt River Baseline and

Meridian. Construction is scheduled to begin in January 2016, and is expected to require three or four months to complete. The only firm deadline to avoid interference with spawning of hatchery fish stocks in spring 2016 is to have all of the new raceways installed and plumbed by March 1, 2016.

Topography of the existing hatchery site has limited the footprint of ARCC due to its location on top of a small terrace approximately 900 feet west of Oak Creek. In order to accommodate the need for more pond and raceway capacity and a new building that will provide additional office, storage, and research lab space, as well as a refrigerated feed storage room, the area of level terrace would be expanded by emplacing retaining walls along the southern and western edges of the site (see Figure 1 below). The area behind these walls would be backfilled and leveled. Approximately 0.4 acre would be backfilled. Fill material would be acquired from a commercial source. The project area, including the construction contractor use area, encompasses approximately 1.6 acres. Standard construction vehicles such as excavators, bulldozers, compactors, etc., will be required for this work.

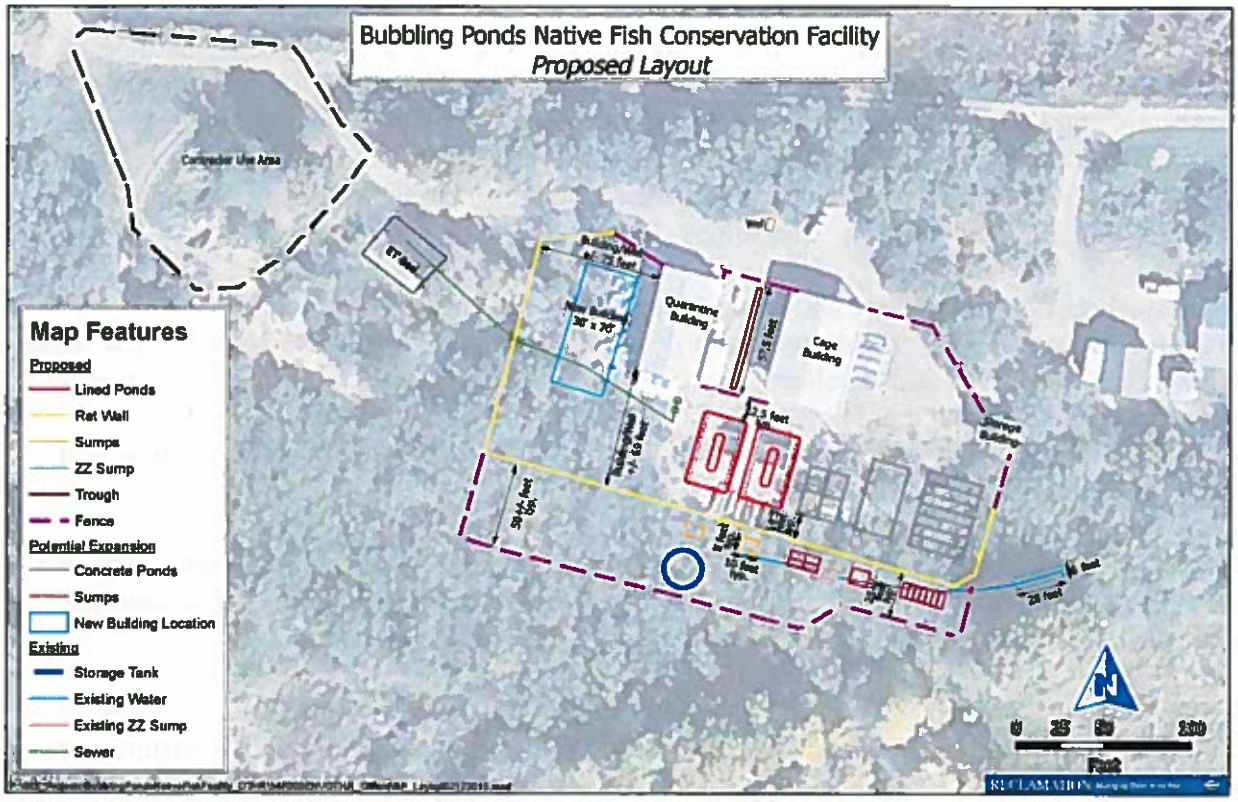


**Figure 1.** Aerial image/schematic of ARCC showing the proposed expansion/modernization features. The new linear raceways would be placed between the quarantine and cage buildings.

The first demolition activity would be the removal of two existing concrete-lined ponds from the terrace site that are in poor condition. A retaining wall at the south end of the site also would be demolished and removed from the terrace site prior to initiation of construction. This construction debris would be temporarily moved to the contractor use area until it is disposed at an approved landfill by the contractor.

Next, vegetation near the alignment of the new retaining walls would be cleared and grubbed. Most of the existing fiberglass raceways and sumps that lie to the south and west of the existing caged circular raceway compound would be disassembled and similarly removed from the construction site. Any unnecessary pipes and plumbing encountered during construction work would also be removed.

After demolition of the ponds is completed, the preparation of the western and southern edges of the terrace for construction of new retaining walls to expand the hatchery footprint would be initiated. In addition to the clearing and grubbing demolition, preparation of the ground for assembly of retaining walls would be the major ground-disturbing activity of the project. The reinforced earth-block retaining walls would accommodate supply and drainage pipe passages as necessary to integrate the hatchery plumbing, and will take approximately two months to assemble. Assembly should not result in any further ground disturbance. After the walls are constructed, the ground behind (to the north and east of the south and west walls, respectively) would be backfilled with structurally-appropriate fill material obtained from a commercial source (estimated at 3,400 tons), compacted, and leveled.

Two new geotextile-lined ponds, each measuring 25 feet x 42 feet x 5 feet deep, would be constructed near the southern end of the site that would be used primarily for housing and propagating rare populations of native chubs (*Gila* spp.). The ponds would be supplied with artesian water from either the existing well at the north end of the site, or from the new well to be drilled near the eastern edge of the site. Drainage would discharge through the southern retaining wall into newly-constructed sumps (Figure 1).

Three steel-reinforced concrete collection sumps would be constructed south of the southern retaining wall to collect flow-through water from the raceways and ponds (Figure 1). The sumps would also serve as larval fish collection sites that may be transported out of their propagation raceways or ponds in the drainage water. Construction of these sumps would involve additional new-ground disturbance, which should require only a day or two of digging that likely would occur after the retaining walls are assembled.

A main drain line for the expanded raceway system would be constructed in the space between the existing circular raceway cage and the quarantine building (Figure 1). This line would be connected to one or more of the sumps south of the southern retention wall.

A new building pad and exterior shell would be constructed that is intended to also enclose offices, feed storage, and research lab space. This will occur on either previously-disturbed or newly-backfilled ground. The building would be approximately 30 x 70 feet, and would be situated near the northwestern corner of the site (Figure 1). Funds to complete the internal layout of the building and fully equip it have not yet been identified, and are not a part of the proposed action.

A new artesian well would be drilled near the eastern edge of the site and plumbed appropriately to expand the water supply available for the refurbished facility. The entire ARCC would be

enclosed within a chain-link fence to prevent access by unauthorized personnel and animals, as shown in Figure 1.

Placement of the new geotextile-lined ponds would necessitate the relocation of an existing power pole at the site. Electrical and phone lines would be moved to the north of the road on the northern edge of the site. A portion of this new electrical route may be buried underground.

Twenty-six new linear fiberglass raceways would be purchased, installed, and plumbed into the supply/drain system in the space between the existing cage and quarantine buildings (Figure 1). Each would be approximately 3-feet wide by 15-feet long by 3-feet deep. Companion fiberglass sumps would be installed immediately "downstream" of each raceway to collect larvae and house recirculating pumps, and prevent discharge of fishes into the drain system.

A total of 28, single speed, ¼-horsepower (hp), low-amperage recirculating pumps would be purchased for the primary purpose of enhancing flow rates in the linear raceways to better mimic stream conditions where the native fishes live and reproduce. Three, 1-hp regenerative blowers also would be purchased and fitted to the raceways and ponds to ensure they would receive adequate oxygen. These would be fitted with valves and diffusers for fine adjustments to air flow. Some funds would be provided to AGFD for their oversight of the construction process and assistance with some of the post-construction plumbing and electrical hookups. To complete the project, the facility would be plumbed and wired.

The refurbished facility would be operated and maintained by AGFD, with funding provided by the Program, and other sources.

Conservation Measures

In an attempt to avoid, minimize, or mitigate potential negative effects of the project to northern Mexican gartersnake, the following measures will be implemented:

- A permitted BOR biologist or designee would survey the project area for the presence of gartersnakes immediately prior to initiation of construction, and move any gartersnakes encountered away from the project area.
- Prior to initiation of construction, contractor personnel would be provided with an environmental awareness program that will cover northern Mexican gartersnake life history, status, identification, and mitigation measures to avoid encounters and impacts.
- During the first few weeks of construction when ground-disturbing activities are expected to be the greatest, a permitted BOR biologist or its designee would monitor for presence of northern Mexican gartersnake in the path of construction vehicles. If any gartersnakes were detected, work at the site would cease until the individual(s) was captured and transported away from the area. Contractor vehicles would be limited to 15 miles per hour, and would be required to stop for snakes on or near a road.

- All erosion control products used by the contractor would be required to have openings less than ¼ inch to avoid ensnaring gartersnakes.

- Any northern Mexican gartersnake mortalities would be thoroughly documented and reported to FWS Supervisory Fish and Wildlife Biologist Shaula Hedwall (928-556-2118). If injured snakes are found, they will be captured and transported to a location determined in advance by FWS and AGFD for potential rehabilitation.

- BOR shall submit a summary report of the project to the FWS Flagstaff Office within 12 weeks of project completion that documents the implementation of mitigation measures and any gartersnake encounters.

## STATUS OF THE SPECIES

The Federal Register notice listing the northern Mexican gartersnake as threatened under the Act was published on July 8, 2014 (USFWS 2014). Critical habitat was proposed on July 10, 2013 (USFWS 2013) and has not yet been designated. Please refer to these rules for more in-depth information on the ecology and threats to the species and critical habitat, including references. The final listing and proposed critical habitat rules are incorporated herein by reference.

The northern Mexican gartersnake ranges in color from olive to olive-brown or olive-gray with three lighter-colored stripes that run the length of the body, the middle of which darkens towards the tail. It may occur with other native gartersnake species and can be difficult for people without specific expertise to identify because of its similar appearance to sympatric gartersnake species. The snake may reach a maximum length of 44 inches (in) (112 cm).

Throughout its rangewide distribution, the northern Mexican gartersnake occurs at elevations from 130 to 8,497 ft (Rossman et al. 1996) and is considered a "terrestrial-aquatic generalist" by Drummond and Marcías-García (1983). The northern Mexican gartersnake is a riparian obligate (restricted to riparian areas when not dispersing) and occurs chiefly in the following habitat types: 1) source-area wetlands (e.g., cienegas or stock tanks); 2) large-river riparian woodlands and forests; and 3) streamside gallery forests (Hendrickson and Minckley 1984, Rosen and Schwalbe 1988). Emmons and Nowak (2013), when surveying in the upper Verde River region, found this subspecies most commonly in protected backwaters, braided side channels and beaver ponds, isolated pools near the river mainstem, and edges of dense emergent vegetation that offered cover and foraging opportunities. In the northern-most part of its range, the northern Mexican gartersnake appears to be most active during July and August, followed by June and September.

The northern Mexican gartersnake is an active predator and is thought to heavily depend upon a native prey base (Rosen and Schwalbe 1988). Northern Mexican gartersnakes forage along vegetated streambanks, searching for prey in water and on land, using different strategies (Alfaro 2002). Generally, its diet consists of amphibians and fishes, such as adult and larval (tadpoles) native leopard frogs, as well as juvenile and adult native fish (Rosen and Schwalbe 1988). In

situations where native prey species are rare or absent, this snake's diet may include nonnative species, including larval and juvenile bullfrogs, western mosquitofish (Holycross et al. 2006, Emmons and Nowak 2013), or other soft-rayed fishes.

Native predators of the northern Mexican gartersnake include birds of prey, other snakes, wading birds, mergansers, belted kingfishers, raccoons, skunks, and coyotes (Rosen and Schwalbe 1988, Brennan et al. 2009). Historically, large, highly predatory native fish species such as Colorado pikeminnow may have preyed upon northern Mexican gartersnake where they co-occurred. Native chubs may also prey on neonatal gartersnakes.

Sexual maturity in northern Mexican gartersnakes occurs at two years of age in males and at two to three years of age in females (Rosen and Schwalbe 1988). Northern Mexican gartersnakes are viviparous (bringing forth living young rather than eggs). Mating has been documented in April and May followed by the live birth of between 7 and 38 newborns in July and August (Rosen and Schwalbe 1988, Nowak and Boyarski 2012).

The northern Mexican gartersnake historically occurred in every county and nearly every subbasin within Arizona, from several perennial or intermittent creeks, streams, and rivers as well as lentic wetlands such as cienegas, ponds, or stock tanks (Brennan and Holycross 2006, Cotton et al. 2013). In New Mexico, the gartersnake had a limited distribution that consisted of scattered locations throughout the Upper Gila River watershed in Grant and western Hidalgo Counties (Price 1980, Fitzgerald 1986, Degenhardt et al. 1996, Holycross et al. 2006). Within Mexico, northern Mexican gartersnakes historically occurred within the Sierra Madre Occidental and the Mexican Plateau, comprising approximately 85 percent of the total rangewide distribution of the subspecies (Rossman et al. 1996).

At this time and based upon current survey techniques, the only northern Mexican gartersnake populations in the United States where the subspecies remains reliably detected are all in Arizona: 1) The Page Springs and Bubbling Ponds State Fish Hatcheries along Oak Creek; 2) lower Tonto Creek; 3) the upper Santa Cruz River in the San Rafael Valley; 4) the Bill Williams River; and, 5) the middle/upper Verde River. In New Mexico, the northern Mexican gartersnake may occur in extremely low population densities within its historical distribution; limited survey effort is inconclusive to determine extirpation. The status of the northern Mexican gartersnake on tribal lands, such as those owned by the White Mountain or San Carlos Apache Tribes, is poorly known. Less is known about the current distribution of the northern Mexican gartersnake in Mexico due to limited surveys and limited access to information on survey efforts and field data from Mexico.

Harmful nonnative species are a concern in almost every northern Mexican gartersnake locality in the United States and the most significant reason for their decline. Harmful nonnative species can contribute to starvation of gartersnake populations through competitive mechanisms, and may reduce or eliminate recruitment of young gartersnakes through predation. Other threats include alteration of rivers and streams from dams, diversions, flood-control projects, and groundwater pumping that change flow regimes, reduce or eliminate habitat, and favor harmful nonnative species; and effects from climate change and drought (USFWS 2014).

## 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 to provide a platform from which to assess the effects of the action now under consultation.

### Description of the action area

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR section 402.02). In delineating the action area, we evaluated the farthest reaching physical, chemical, and biotic effects of the action on the environment. The action area for this biological opinion is defined as the approximately 1.6 acres that encompasses the facility renovation (Figure 1). Most of the project area has been previously disturbed from the construction and placement of a laboratory/quarantine building, storage shed, cinder block wall, and numerous above- and below-ground fish ponds and raceways of various sizes. In-between these structures, the ground is covered by gravel, broken pieces of concrete, and a mix of grasses and forbs.

### A. Status of the species and proposed critical habitat within the action area

The AGFD property, on which ARCC is located, is occupied by a stable population of northern Mexican gartersnake that serves as a source population for satellite populations along adjacent Oak Creek where individuals have been recently documented (J. Servoss, U.S. Fish and Wildlife Service, pers. comm.) This is despite the presence of a large bullfrog population as well as presence of nonnative largemouth bass (*Micropterus salmoides*) in ponds at Bubbling Ponds State Hatchery, and other nonnative fishes and crayfishes in nearby Oak Creek.

### B. Factors affecting species' environment within the action area

The immediate project location is under the management and jurisdiction of the AGFD, with adjacent properties owned privately or managed by the Coconino National Forest. The surrounding area has a long history of private development, agriculture, and livestock grazing; all of which are ongoing activities. Recreational uses in the area include hunting, fishing, hiking, horseback riding, birding, wildlife observation, and ecotourism. Motorized vehicles are allowed on established paved and unpaved roads.

## 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.

Native aquatic species recovery projects, such as the ARCC expansion and modification project, are expected to benefit the northern Mexican gartersnake in the long-term; however, the project may also result in short-term adverse effects to individual snakes. The project footprint overlaps occupied suitable northern Mexican gartersnake habitat, and individual gartersnakes occur within the project area.

The project may have localized, short-term adverse effects from construction activities that result in displacement of gartersnakes, and potential injury or death to individual gartersnakes. At a minimum, direct impacts through displacement could occur as snakes are driven underground or undercover (rocky piles, coarse woody debris, etc.) where they are likely to stay. This behavior could increase risk to snakes as they would not be visible. Individual gartersnakes not observed or that cannot be captured may be injured or killed as a result of construction activities associated with the construction.

Depending upon weather conditions, northern Mexican gartersnakes may be attempting to brumate within the project area in November (or sooner if ambient air temperatures drop sooner). Based on radio telemetry data gathered by AGFD, northern Mexican gartersnakes on the AGFD property are generally moving toward overwintering sites in late October and are mostly in their hibernacula by November 1. None of the telemetered gartersnakes overwintered within the footprint of the proposed expanded ARCC. This does not mean that gartersnakes are not using the area, but that we do not have data regarding telemetered snake use of the habitat. Information from northern Mexican gartersnake work conducted in the Verde watershed indicates that these snakes do not remain inactive throughout the winter, but will move between hibernacula sites (I. Emmons, Northern Arizona University, pers. comm.). We would expect that activity levels of snakes would be lowest in in January and February, then begin to increase as air temperatures increase in late February through March.

Northern Mexican gartersnakes tended to be inactive on days when nighttime temperatures fall to freezing or below. When nighttime temperatures are above freezing for consecutive nights, it is likely that substrates could warm to the point that snakes become active (I. Emmons, Northern Arizona University, pers. comm.). Therefore, there is a possibility construction activities could impact hibernacula during the proposed construction period. Winter telemetry work conducted in the Verde River, downstream of the action area, found northern Mexican gartersnakes using rodent burrows and talus/rock piles for hibernacula (I. Emmons, Northern Arizona University, pers. comm.).

Although a BOR biologist will be on-site during construction-related activities to reduce the potential for direct impacts to individual snakes, not all direct impacts are avoidable. At a minimum, temporary direct impacts through displacement will occur as snakes leave the area on their own in response to prolonged project ground disturbances, or are relocated by the BOR biologist out of the project area. Individual gartersnakes not observed or that cannot be captured

by the biological monitor may be injured or killed as a result of construction or even vehicle strikes. Since the project will begin in January, it will occur after gartersnakes have likely entered hibernacula, could become active depending on ambient temperature or movement between hibernacula sites. Based upon telemetry data, AGFD does not think that there are hibernacula sites within the approximately 1.6-acre project area, but ongoing project activities at this time could affect snakes moving between known hibernacula sites.

Project-related activities are expected to impact suitable gartersnake habitat temporarily and permanently. The clearing and grubbing of vegetation near the alignment of the new retaining wall, and preparation of ground for the retaining wall, will disturb some new ground. This facility expansion would require the removal of up to 0.7 acres of velvet mesquite. The loss of up to 0.7 acres would leave a mostly-continuous bosque of velvet mesquite of approximately 7.5 acres along the east, south, and southwest portion of the project area.

This project is expected to have long-term benefits to northern Mexican gartersnakes by increasing prey availability for gartersnakes throughout the Gila Basin through introduction of native fishes.

**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 are subject to the consultation requirements established under section 7, and therefore are not considered cumulative to the proposed action.

In December 2014, AGFD acquired 31.5 acres of property adjacent to the Bubbling Ponds State Fish Hatchery to conserve northern Mexican gartersnake and increase native fish production capacity of the hatchery. Construction of native fish production ponds and protection of habitat for northern Mexican gartersnake on the newly acquired land is expected to have a beneficial effect for the species. Ultimately, the native fishes propagated at ARCC and repatriated to the wild would enhance prey availability for northern Mexican gartersnake in portions of its range.

Future actions within the action area that are reasonably certain to affect the northern Mexican gartersnake include residential home and commercial development on private lands, which could result in negative impacts to watershed integrity. The continued use of ground and surface water adjacent to the project area could also result in altered hydrologic regimes and increased sedimentation and pollutants to the stream. These events can singularly or cumulatively affect the northern Mexican gartersnake through adverse effects to individuals (disturbance, injury, and/or fatality) or alterations to habitat.

Demand for outdoor recreation is also expected to grow concurrently with increasing human population in Oak Creek. Aquatic and riparian resources are major attractants for recreational activities, and increased recreation in these areas is likely to result in impacts that remove or alter some stream-side habitat.

## CONCLUSION

After reviewing the current status of the northern Mexican gartersnake, the environmental baseline for the action area, the effects of the action, and the cumulative effects, it is our biological opinion that the proposed ARCC construction project will not likely jeopardize the continued existence of the gartersnake. We base our conclusion on the following:

- The project area is occupied by northern Mexican gartersnakes. However, the proposed action will occur within a very small area (approximately 1.6 acres) that includes habitat and previously disturbed areas. Although a small number of individual gartersnakes may be affected by the proposed action, this project will not result in population level impacts to northern Mexican gartersnakes within the Oak Creek Watershed.

- Implementation of the conservation measures included in the proposed action will aid in reducing the potential for injury and fatality to gartersnakes within and immediately adjacent to the project area.

- The project will not affect the long-term suitability of northern Mexican gartersnake habitat or the gartersnake's ability to use the AGFD property on which this proposed project will occur.

- Ultimately, the native fishes propagated at ARCC and repatriated to the wild are expected to enhance prey availability for northern Mexican gartersnake in portions of its range.

## INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA 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 measures described below are non-discretionary, and must be undertaken by the BOR so that they become binding conditions of any grant or permit issued to an applicant/permittee, as

appropriate, for the exemption in section 7(o)(2) to apply. The BOR has a continuing duty to regulate the activity covered by this incidental take statement. If the BOR (1) fails to assume and implement the terms and conditions or (2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the BOR must report the progress of the action and its impact on the species to the FWS as specified in the incidental take statement [see 50 CFR 402.14(i)(3)].

**Amount or Extent of Take Anticipated**

We anticipate that the proposed action is reasonably certain to result in incidental take of northern Mexican gartersnakes. We anticipate that the actual number of northern Mexican gartersnakes taken as a result of this action will be difficult to predict because finding a dead or impaired specimen will be difficult. However the level of incidental take can be anticipated by the information we have regarding the potential for northern Mexican gartersnakes to be harassed as snakes are captured and moved to new locations, or are injured or killed as a result of the proposed action.

We anticipate the incidental take of an unlimited number of northern Mexican gartersnakes in the form of short-term harassment as snakes are safely captured and moved out of the project footprint; and two northern Mexican gartersnakes in the form of direct fatality or injury as a result of the construction-related activities in and adjacent to occupied habitat. We do not think that there should be a limit on the number of northern Mexican gartersnakes that can be taken to safety, as ensuring these snakes are not injured or killed as a result of the action is positive. However, if more than two northern Mexican gartersnakes are injured or killed as a result of the project, then as provided in 50 CFR Section 402.16, reinitiation of formal consultation would be required as the amount or extent of incidental take would be exceeded.

**Effect of the Take**

In this biological opinion we determine that this level of anticipated take is not likely to result in jeopardy to the northern Mexican gartersnake.

**Reasonable and Prudent Measures with Terms and Conditions**

No reasonable and prudent measures are included in this incidental take statement as there are no additional reasonable measures, beyond what BOR has proposed to implement as part of the proposed action, by which we think that incidental take may be minimized. In addition, BOR has already agreed in the proposed action to report any fatality or harassment of northern Mexican gartersnakes within the project area to the FWS.

**Disposition of Dead or Injured Listed Species**

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 4901 Paseo del Norte NE, Suite D, Albuquerque, NM 87113; 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. We recommend that BOR and AGFD continue to work with FWS to better understand northern Mexican gartersnake behavior and habitat use near Oak Creek and surrounding areas to help inform recovery of the gartersnake throughout its range.

## REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in your request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required when 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.

Certain project activities may also affect species protected under the Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. sec. 703-712) and/or bald and golden eagles protected under the Bald and Golden Eagle Protection Act (BGEPA). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the FWS. BGEPA prohibits anyone, without a FWS permit, from taking (including disturbing) eagles, and including their parts, nests, or eggs. If you think migratory birds will be affected by this project, we recommend working with us to identify

available protective measures that you may be able to incorporate into your project design. For more information regarding the MBTA, please visit the following websites: http://www.fws.gov/migratorybirds and http://www.fws.gov/migratorybirds/mbpermits.html.

For information on protections for bald eagles under the BGEPA, please refer to the FWS's National Bald Eagle Management Guidelines (72 FR 31156) and regulatory definition of the term "disturb" (72 FR 31132) that were published in the Federal Register on June 5, 2007. Existing take authorizations for bald eagles issued under the ESA became covered under the BGEPA via a final rule published in the Federal Register on May 20, 2008 (73 FR 29075). Our office is also available to provide technical assistance to help you with compliance.

We appreciate the BOR's efforts to identify and minimize effects to the northern Mexican gartersnake. For further information, please contact Shaula Hedwall at (928) 556-2118 or Brenda Smith at (928) 556-2157. Please refer to the consultation number, 02EAAZ00-2015-F-0590, in future correspondence concerning this project.

Brenda H. Smith

for Steven L. Spangle

cc (electronic):
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