



# United States Department of the Interior

## Fish and Wildlife Service Arizona Ecological Services Office

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### In reply refer to:

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### Memorandum

To: Regional Director, Southwest Regional Office, Albuquerque, New Mexico

Through: Assistant Regional Director – Ecological Services, Southwest Regional Office, Albuquerque, New Mexico

From: Field Supervisor, Arizona Ecological Services Field Office, Phoenix, Arizona

Subject: Findings and Recommendations on Issuance of an Incidental Take Permit Amendment (TE060125-1) to Salt River Project for their Roosevelt Habitat Conservation Plan in Gila and Maricopa Counties, Arizona.

### I. BACKGROUND

Between 1905 and 1911, Roosevelt Dam and Lake were constructed and established. Roosevelt Lake is the largest central Arizona reservoir and provides water and power for the Phoenix metropolitan area. Roosevelt Lake impounds both the Salt River and Tonto Creek approximately 100 miles northeast of Phoenix, in Maricopa and Gila counties. Under a 1917 contract with the Department of Interior, Salt River Project (SRP) has the responsibility for Roosevelt Dam's operation, maintenance, and care, as long as they comply with Federal regulations. The Bureau of Reclamation (Reclamation) is the owner of Roosevelt Dam. Reclamation modified Roosevelt Dam in the mid-1990s (hereafter referred to as Modified Roosevelt Dam), increasing conservation storage and improving safety with flood control and surcharge space (Figure 1). The Army Corps of Engineers (Corps) 1997 Water Control Manual (WCM), established under agreement with SRP, guides use of the lake's flood control space (FCS).

SRP developed their initial Roosevelt Habitat Conservation Plan (RHCP) in 2002 (permit issued in 2003), limiting their covered activities to the conservation space (CS) up to 2,151 feet in elevation (Figure 1). The 2002 RHCP addressed adverse effects to western yellow-billed cuckoo (*Coccyzus americanus*: cuckoo), southwestern willow flycatcher (*Empidonax traillii extimus*: flycatcher), bald eagle (*Haliaeetus leucocephalus*), and Yuma Ridgway's

(clapper) rail (*Rallus obsoletus yumanensis*: rail). SRP developed surrogate metrics for flycatcher, cuckoo, and rail incidental take, based upon the maximum amount of acres of bird habitat affected annually. SRP mitigated for these three birds by primarily purchasing, managing, and creating habitat outside of Roosevelt's CS on other Arizona rivers and near Roosevelt Lake. SRP's effects to bald eagles were primarily inundation effects to nests (eaglets/eggs) and nest trees, and reduced productivity from dramatic reductions in lake size. SRP's bald eagle conservation and mitigation measures focused on helicopter flights to search for eagle territories and nests, and funding annual bald eagle nestwatchers and a Forest Protection Office to protect nests and identify eagle emergencies where agencies can initiate rescue operation.

## II. PROPOSAL DESCRIPTION

In July 2023, SRP requested an amendment to their RHCP and applied for an amended incidental take permit (ITP) under section 10(a)(1)(B) of the Endangered Species Act of 1973, as amended (ESA)(16 U.S.C. §1531-1544). An ITP authorizes incidental take for otherwise lawful activities (50 CFR 17.3).

The catalysts for SRP seeking an RHCP amendment are the recent listing of the threatened northern Mexican gartersnake (*Thamnophis eques megalops*; gartersnake) and the addition of flood control operations (including a planned deviation) as a covered activity (see below).

The requested ITP amendment would authorize incidental take of:

1. gartersnakes within Modified Roosevelt Dam's CS and FCS space (up to 2,175 feet in elevation) and the lowest 14.1 miles of Tonto Creek (ending at East Del Chi Drive) (Figure 1 and 2), and
2. cuckoos, flycatchers, and bald eagles in Modified Roosevelt Dam's FCS (2,151 to 2,175 feet in elevation) (Figure 1 and 2).

Additionally, the RHCP amendment clarifies and improves our 2003 description of the extent of incidental take of bald eagles and addresses the effects from FCS operations. Since the initial RHCP was completed, we delisted the bald eagle, with the Bald and Golden Eagle Protection Act (Eagle Act) being the primary Federal regulation protecting bald eagles. A valid ITP permit under Section 10 of the ESA serves as a valid permit under the Eagle Act. The final Environmental Assessment (EA) includes our analysis under the Eagle Act.

As the lead Federal agency, and with the Corps as a key cooperating agency, we have analyzed SRP's RHCP amendment (which included the Corps' role in approving a planned deviation to their WCM), under the National Environmental Policy Act of 1969 (NEPA).

The RHCP amendment and our associated biological opinion (BO) is a combined ESA section 10(a)(1)(B) and ESA Section 7 approach to compliance for implementation of covered activities for non-federal (SRP) (Section 10) and Federal (Corps) (Section 7) participants. The BO satisfies the Corps' responsibility under Section 7 for its decision whether to authorize the planned deviation, and the deviation's effects are addressed by SRP

under the RHCP amendment under ESA section 10(a)(1)(B). The BO addresses the FWS's action of approving the RHCP amendment and issuing an ITP under section 10(a)(1)(B).

Our issuance of an ITP under section 10(a)(1)(B) of the ESA would authorize incidental take of covered species for SRP's Modified Roosevelt Dam's conservation and flood control operations (covered activities) (see below). The RHCP amendment's Permit Area includes Modified Roosevelt Dam's CS and FCS (up to 2,175 feet in elevation) and the lowest 14.1 miles of Tonto Creek (Figure 2), illustrated as the Area of Potential Effects (APE) in the top map.

We, along with the Corps, have fully analyzed the effects of the proposed action on the covered species in our EA and BO for the proposed action. We incorporate both documents herein by reference.

SRP's covered activities include Modified Roosevelt Dam's conservation and flood control operations, which include a planned deviation to the Corps' WCM guiding flood control. Conservation storage operations were included in the original RHCP. SRP stores water within the CS up to 2,151 feet in elevation. Normal flood control operations occur between 2,151 and 2,175 feet in elevation (Figures 1 and 2), and SRP must eliminate water from the FCS in 20 days. The planned deviation to normal flood control operations, if approved by the Corps, would allow SRP to hold water in the lowest 5 feet of the FCS (2,151 to 2,156 feet in elevation) for 120 days (100 days longer than normal flood control operations). SRP could exercise a deviation in three out of five years, beginning in the winter of 2024.

SRP's conservation and flood control operations have positive and negative effects to covered species and their habitat. Modified Roosevelt Dam's operations include delivering water in the summer and fall, and storing water in the winter and spring. Depending on the amount of precipitation, especially during long periods of drought, the surface area of the lake can fluctuate substantially. In general, a dynamic lake at stream inflows can mimic, but exaggerate, the effects of stream flooding on flycatcher and cuckoo riparian nesting habitat. It can cover and alter bird nesting habitat when lake levels are high, but when lake levels recede, exposed floodplains reinvigorated with water can quickly re-establish habitat over a vast area. Similarly, for the gartersnake, high lake levels cover and adversely affect snakes and its habitat, while low lake levels create shallow water foraging areas and moist areas for frogs and terrestrial prey. Roosevelt Lake's CS also creates a lake for predatory sportfish, and when creek levels are higher, predatory sportfish travel up lower Tonto Creek. Smaller sportfish can be gartersnake prey, while larger sportfish can kill (or injure) gartersnakes and the prey they rely on. Roosevelt Lake's higher lake levels can create abundant bald eagle foraging areas for fish and waterfowl, but can also inundate bald eagles nests, eggs, or nestlings. Higher lake levels surrounding eagle nest trees in the late nesting season increases the risk of causing newly fledged eagles to drown. Eagle nest trees can also die from repeated or long-term inundation. SRP can alter bald eagle foraging areas and reduce productivity when lake levels recede to exceptionally low levels for extended periods.

There is a causal link between the effects of SRP's Modified Roosevelt Dam operations that causes incidental take of gartersnakes, flycatchers, cuckoos, and bald eagles. Due to 20 years

of RHCP implementation, we have observed dynamic lake levels adversely affect covered species and its habitat. Additionally, extracted DNA from sportfish fecal samples in the permit area confirm largemouth bass eating gartersnakes. We expect incidental take of northern Mexican gartersnakes in the form of kill, wound, and harm from Modified Roosevelt Dam's conservation storage and flood control activities, including the planned deviation. We anticipate incidental take of flycatchers and cuckoos in the form of harm from the planned deviation in the FCS. We anticipate bald eagles will be incidentally taken in the form of kill or harm from normal flood control activities and the planned deviation.

SRP developed surrogate measures with our office to estimate gartersnake incidental take and create exceedance levels for covered activities. Surrogate measures are necessary due to the difficulty in detecting and tracking effects of a small cryptic snake species. Surrogate habitat metrics target the amount of gartersnake habitat ("acre-years") Roosevelt Lake affects and the "migration days" nonnative predatory sportfish can access lower Tonto Creek. The surrogate measures establish incidental take exceedance limits based on the overall anticipated cumulative acres of gartersnake habitat affected within Roosevelt Lake and days sportfish have access to gartersnakes in lower Tonto Creek. Therefore, if SRP approaches these exceedance limits, we would expect it would occur near the end of the remaining 30-year permit duration. The two metrics directly relate to how Modified Roosevelt Dam affects gartersnakes and its habitat in the CS and FCS, and the extent of when predatory fish can affect gartersnakes in lower Tonto Creek. The two metrics address the effects leading to incidental take that are particular to the CS, FCS, and the lower Tonto Creek parts of the permit area.

We anticipate gartersnake incidental take in the form of kill, wound, and harm in the Roosevelt CS and FCS from conservation storage and flood control operations (including the planned deviation) by the cumulative acre-years of gartersnake habitat made unavailable in a given year, totaled over the remaining life of this permit (acre-years of reduced habitat availability). As determined by gartersnake telemetry studies, SRP will measure adverse effects to gartersnakes and its habitat within Roosevelt Lake by a 308-foot area around visible surface water. The amount of authorized incidental take in the conservation space and flood control space at Roosevelt Lake over the remaining 30-year permit duration shall not exceed 2,742.9 acre-years of reduced gartersnake habitat availability for all conservation and flood control actions.

We anticipate gartersnake incidental take in the form of harm (predation, wounding, survivorship, and reproduction) in lower Tonto Creek from nonnative predatory fish supported by Roosevelt Lake that move into the creek. We measure gartersnake incidental take along lower Tonto Creek by the number of fish "migration days" that nonnative predatory fish are able to leave Roosevelt Lake and affect gartersnakes between 2,151 feet in elevation and 14.4 miles upstream to the large culvert barriers at East Del Chi Drive. Nonnative predator sportfish are most likely to leave Roosevelt Lake when Tonto Creek flows are between 200 and 1,100 cubic feet per second (cfs). SRP will count the number of days between February 1 and May 31 when the average daily flow in Tonto Creek is between 200 cfs and 1,100 cfs. When the number of consecutive migration days in a given year exceeds five, then SRP will count those five days and each migration day that follows for the

remainder of the year (through May 31) as a day of take. The amount of authorized incidental take from long-term conservation storage's effects to gartersnakes along lower Tonto Creek shall not exceed 906 migration days during the remaining term of the permit.

We anticipate incidental take of flycatchers and cuckoos in the form of harm from the planned deviation in the FCS. The planned deviation and extended duration of water in the FCS would diminish the availability of approximately 12 acres of flycatcher nesting habitat and 2.6 acres of cuckoo nesting habitat on the Tonto and Salt Arms. Also based on current conditions, SRP estimates adverse effects to 75.9 acres of flycatcher breeding habitat and 43.0 acres of cuckoo breeding habitat along the Tonto and Salt Arms. SRP's existing RHCP incidental take coverage and surrogate metric for effects in the conservation space up to 2,151 feet in elevation is robust enough to absorb the additional minor effects from the planned deviation. We will adjust our permit to expand the permit area to include the FCS up to 2,175 feet in elevation.

We anticipate normal flood control activities and the planned deviation will incidentally take bald eagles in the form of kill or harm in the FCS and CS up to 2,175 feet in elevation. We are replacing the exceedance measures from the original RHCP for conservation storage actions with improved metrics that biologists can observe and measure, which also include the minor effects from normal FCS operations and the planned deviation. SRP may incidentally take no more than three fledgling bald eagles from drowning due to flood control activities in the flood control and conservation space. SRP may incidentally take bald eagle adults, nestlings, and eggs that are directly or indirectly attributable to the destruction of no more than 40 bald eagle nests or supporting nest trees/snags within the Roosevelt Lake conservation space or flood control space. SRP may harm breeding bald eagles, and kill nestlings and eggs that rely upon Roosevelt Lake by reduced foraging opportunities within the Roosevelt Lake CS and FCS. Incidental take shall be limited to no more than four reduced foraging events, defined as any year in which Roosevelt Lake is below 2,100 feet in elevation for 60 consecutive days or 90 total days during the breeding season and the productivity of all breeding bald eagles relying on Roosevelt Lake for food is less than 1.0 (productivity = number of fledged young/occupied breeding area).

The RHCP amendment fully describes SRP's conservation and mitigation strategy for the gartersnakes. These strategies include electrofishing nonnative predatory sportfish in two segments of lower Tonto Creek and stocking native non-predatory native fish and possibly frogs.

The RHCP's conservation and mitigation measures for cuckoos, flycatchers, and bald eagles developed in 2002 were robust enough to address the minor effects from flood control activities, without additional conservation/mitigation measures. We do not anticipate any additional effects to rails.

We determined that the amount of incidental take for all covered species will not jeopardize any listed species or adversely modify designated critical habitat. Gartersnakes have likely persisted in lower Tonto Creek since the development and modification of Roosevelt Dam and Lake, including the stocking of predatory sportfish, for nearly 100 years. Lower Tonto

Creek is one of the few places across the gartersnake's range where they reliably occur. SRP's conservation and mitigation measures should reduce predation, and improve prey diversity/availability, gartersnake reproduction, and population persistence in lower Tonto Creek. Nesting cuckoos, flycatchers, and bald eagles persist at Roosevelt Lake with ongoing conservation and flood control operations. Roosevelt Lake can support the densest number of flycatcher territories in Arizona (n=200) and it currently supports more bald eagle territories (n=7) than any other lake in Arizona. Adverse effects to designated critical habitat do not rise to the level of adverse modification due to the existing degraded environmental baseline; limited area affected; periodic and short-term effects; and conservation measures.

### III. PUBLIC COMMENT

We solicited public input through a scoping notice to 585 potentially interested agencies, organizations, agencies, congressional representatives, Tribes, and residents via mail and email on June 1, 2022. We received two formal responses and two telephone calls. Only Arizona Game and Fish Department submitted substantial input. We provided responses to this input in the draft EA.

We published a Notice of Availability for the RHCP amendment and accompanying draft EA, and application for an ITP in the Federal Register on August 4, 2023 (88 FR 51849) for 30 days. We sent 14 interested Tribes individual letters via email and mail, which also included hard copies of the RHCP amendment and draft EA for some Tribes. We also developed a news release and posted the documents on the internet.

We received eight comment letters from Arizona cities and Reclamation during the comment period, and one each from the Pueblo of Zuni and Gila River Indian Community following the comment period. Seven Arizona communities receiving water from the planned deviation submitted support for the project. Reclamation requested various clarifications to improve the accuracy of the draft EA. Pueblo of Zuni included a discussion about their world view perspective, including concern for standard fish management techniques. The Gila Indian River Community objected to overall project, and deferred to the Salt River Pima Maricopa Indian Community for satisfying input on SRP's cultural monitoring plan. Our responses to public comments are in an appendix to the final EA.

### IV. INCIDENTAL TAKE PERMIT CRITERIA - ANALYSIS AND FINDINGS

- a. The proposed taking will be incidental to otherwise lawful activities.

We find that the take will be incidental to otherwise lawful activities, which are Modified Roosevelt Dam's conservation and flood control operations. The incidental take of gartersnakes, flycatchers, cuckoos, and bald eagles will be in the form of harm from habitat alteration or reduced habitat availability. Some animals may succumb from inundation, drowning, injury, or predation.

- b. To the maximum extent practicable, avoid, minimize, and mitigate for the impacts of such taking.

SRP commits, to the maximum extent practicable, to minimize and mitigate the effects of taking covered species. SRP's gartersnake conservation and mitigation program reduces the primary threats to gartersnakes and its prey by suppressing predatory nonnative sportfish and stocking native fish and possibly frogs. SRP will implement suppression/stocking conservation measures in the lowest 14.1 miles of Tonto Creek. SRP will mitigate for the effects within Roosevelt Lake's CS and FCS by conducting predatory sportfish suppression and native fish stocking (possibly including frogs) at a separate Tonto Creek segment farther upstream. This strategy focuses feasible conservation actions within the permit area and targets mitigation measures at a nearby location toward local gartersnake recovery. Because SRP's incidental take exceedance levels and mitigation measures developed for flycatchers, cuckoos, and bald eagles were robust in their original RHCP, no additional conservation/mitigation measures are necessary for the minor effects to birds from flood control operations. In addition, SRP has included provisions for changed circumstances that are foreseeable. These strategies will ensure that SRP minimizes and mitigates to the maximum extent practicable for the impacts from the proposed taking.

- c. SRP ensures adequate funding for the plan.

The total cumulative cost of implementing the RHCP amendment for the 30-year period is approximately \$9,632,546.00, assuming full utilization of all take. SRP has incorporated these costs into the project's capital costs. A complete budget discussion is included in Chapter 8 the RHCP amendment.

- d. The proposed taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

As the Federal action agency considering whether to issue an ITP to SRP, we have reviewed the proposed action under section 7 of the ESA. The RHCP amendment and our associated biological opinion (BO) is a combined ESA section 10(a)(1)(B) and ESA Section 7 approach to compliance for implementation of covered activities for non-federal (SRP) (Section 10) and Federal (Corps) (Section 7) participants. The BO satisfies the Corps responsibility under Section 7 for its decision whether to authorize the planned deviation, and the deviation's effects are addressed by SRP under the RHCP amendment under ESA section 10(a)(1)(B). The BO addresses the FWS's action of approving the RHCP amendment and issuing an ITP under section 10(a)(1)(B). Our biological opinion concluded that issuance of the ITP will not jeopardize the continued existence of the covered species in the wild or adversely modify designated critical habitat.

- e. SRP has met other requirements imposed by the Secretary of the Interior, such as monitoring and reporting.

We assisted SRP in the development of the RHCP amendment since 2020. We commented on draft documents, participated in weekly conference calls, and worked closely with SRP and the Corps during every step of plan preparation to insure

conservation of the covered species. The RHCP amendment incorporates our recommendations for minimization and mitigation of impacts, as well as steps to monitor the effects and ensure success. Monitoring, as well as coordination and reporting mechanisms, have been designed to ensure that changes in conservation measures can be implemented if proposed measures prove ineffective (adaptive management) or impacts exceed estimates (changed circumstances). It is our position that no additional measures are required to implement the intent and purpose of the RHCP amendment and its associated ITP.

- f. The Secretary of the Interior has received assurances of plan implementation.

The RHCP amendment address plan implementation, including identifying how SRP will ensure proper plan implementation, including avoidance and minimization measures. This plan for implementation provides assurances to the Service that the Applicant will fully implement the HCP.

#### V. GENERAL CRITERIA AND DISQUALIFYING FACTORS - ANALYSIS AND FINDINGS

We have no evidence that the ITP should be denied on the basis of the criteria and conditions set forth in 50 CFR 13.21 (b)-(c). SRP has successfully implemented the original RHCP for 20 years, fully completing conservation and mitigation measures. SRP has similarly executed another HCP for dam operations on the Verde River in Arizona. SRP has met the criteria for the issuance of the ITP and does not have any disqualifying factors that would prevent issuance of the ITP under current regulations.

#### VI. RECOMMENDATION ON PERMIT ISSUANCE

Based on the foregoing findings with respect to the proposed action, we recommend issuance of an ITP to authorize incidental taking of covered species by SRP, in accordance with the RHCP amendment and biological opinion.

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Deputy Regional Director,  
Southwest Region

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Date



## FIGURES

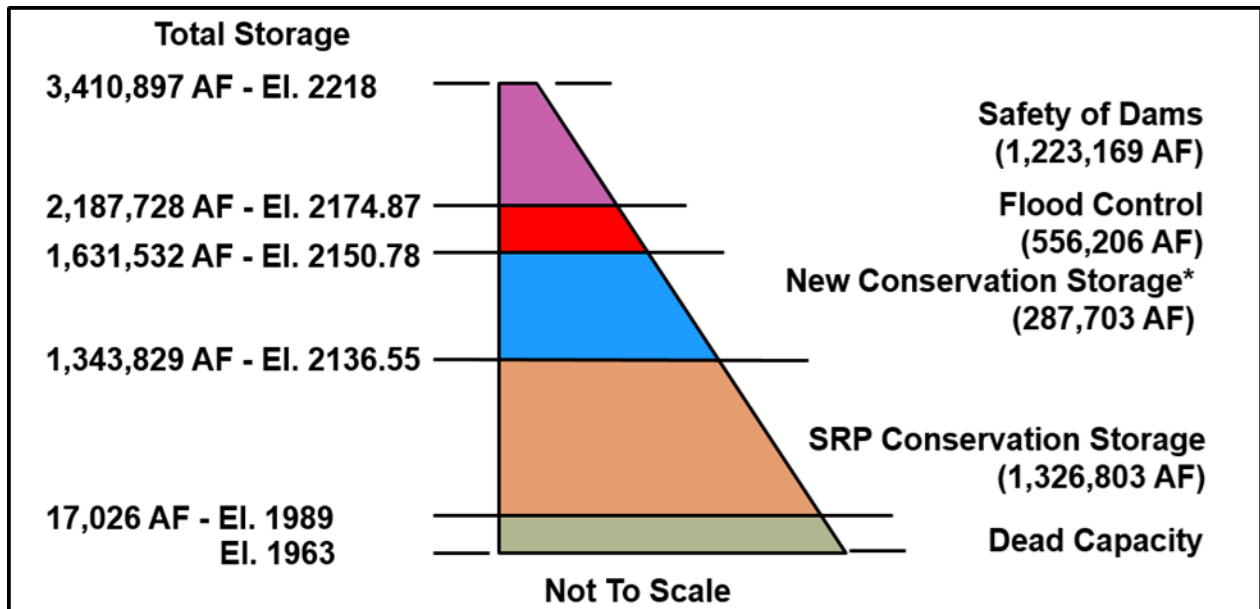


Figure 1. Modified Roosevelt Dam Representation and Areas of Operation.

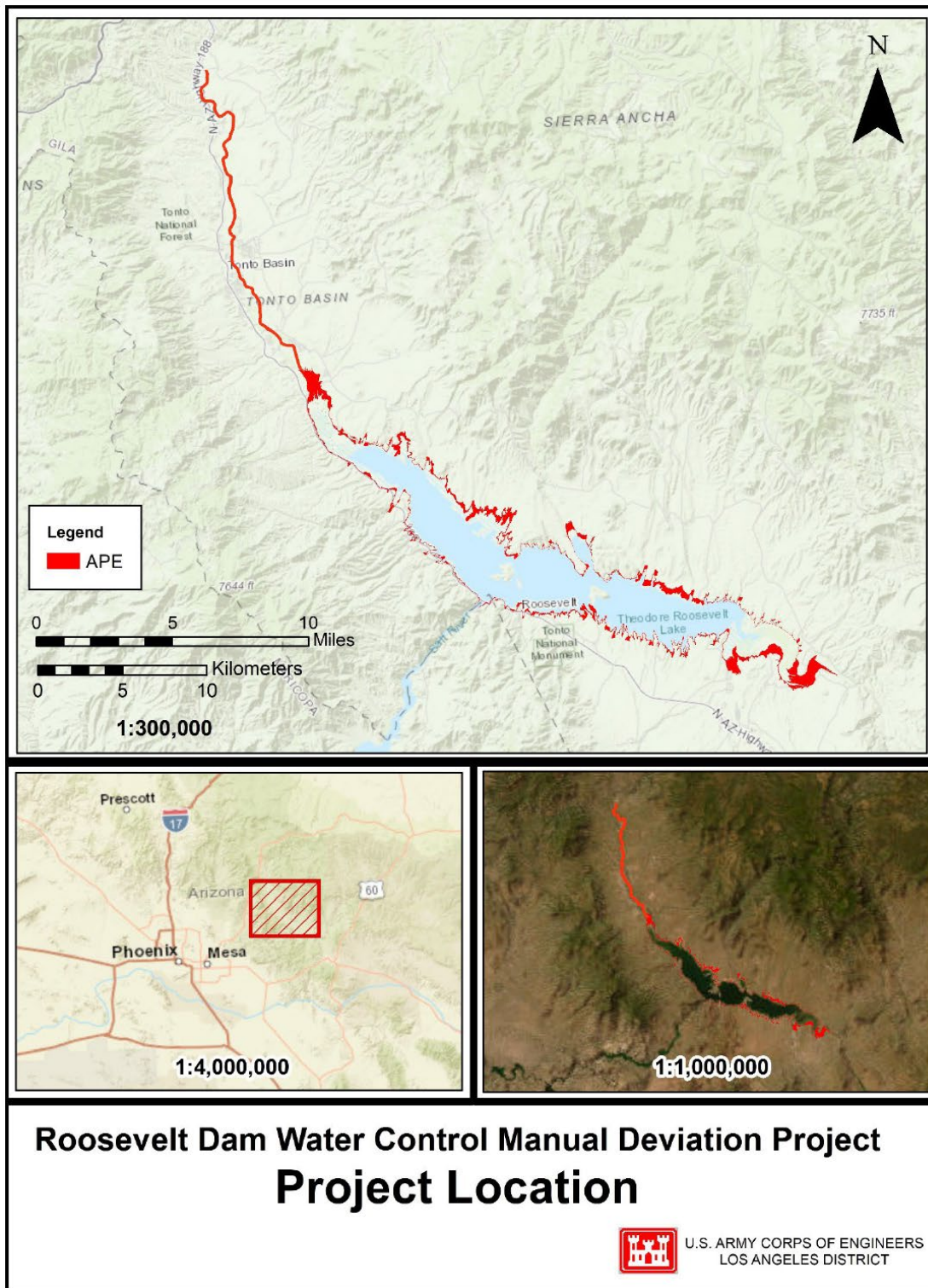


Figure 2. Modified Roosevelt Dam and Lake Location and Roosevelt HCP Amendment Permit Area (Flood Control Space and Lower Tonto Creek).