October 7, 2016

CONS. #02ENNM00-2014-F-0436

Lynette Giesen, Acting Chief Environmental Resources Section
U.S. Army Corps of Engineers, Albuquerque District
4101 Jefferson Plaza NE
Albuquerque, New Mexico 87109-3435

Dear Ms. Giesen:

We (U.S. Fish and Wildlife Service) (Service) received your (U.S. Army Corps of Engineers) (USACE) March 13, 2015, letter and Biological Assessment (BA) requesting the initiation of formal consultation on the Española Valley, Rio Grande and Tributaries, New Mexico Study (Española HR Study). We requested additional species specific information in a letter dated April 28, 2015 pertaining to the Southwestern Willow Flycatcher (*Empidonax traillii extimus*) (flycatcher) and Yellow-billed Cuckoo (*Coccyzus americanus*) (cuckoo), and that data was provided in clarity on December 28, 2015 and a subsequent letter was sent January 25, 2016. Correspondence has been ongoing since your original request for initiation of formal consultation.

Your Española HR Study BA includes the following determinations:
- No effect on the Interior Least Tern (*Sternula antillarun athalassos*), Jemez Mountains salamander (*Plethodon neomexicanus*), and Mexican Spotted Owl (*Strix occidentalis lucida*), or their respective proposed or designated critical habitats.

The Service does not provide concurrence for “no effect” determinations, but we will instead commend your consideration of the species within your BA for the Interior Least Tern (*Sternula antillarun athalassos*), Jemez Mountains salamander (*Plethodon neomexicanus*), and Mexican...
Spotted Owl (*Strix occidentalis lucida*), or their respective proposed or designated critical habitats.

As indicated in previous meetings and letters, we believe your Española HR Study “may affect, and is likely to adversely affect the flycatcher” is correct. This is because there are proposed construction sites within the overall action area that would remove or modify habitat historically occupied by flycatchers. Ultimately, these same constructed features may benefit the flycatcher by increasing opportunities for overbank flooding, decreasing depth to groundwater, and/or decreasing non-native species present over the long term. Attached, below this memorandum, is the Biological Opinion (Opinion) on the effects of the proposed action in regard to the flycatcher. This Opinion will be considered final within a 30 day period.

Please reference consultation number 02ENNM00-2014-F-0436 and contact Ms. Vicky Ryan, Fish and Wildlife Biologist, at 505-761-4738 or vicky_ryan@fws.gov with any questions.

Sincerely,

WALLY MURPHY

Digitally signed by
WALLY MURPHY
Date: 2016.10.05 13:52:51 -06'00'

Wally Murphy
Field Supervisor

cc:
Director, Division of Natural Resources, Ohkay Owingeh, San Juan Pueblo, New Mexico
Director, Office of Environmental Affairs, Santa Clara Pueblo, Espanola, New Mexico
I. DESCRIPTION OF PROPOSED ACTION

The following description of the proposed action summarizes relevant material from the Española HR Study, as it pertains to this consultation. For additional detail on the proposed action see the USACE March 13, 2015 Española HR Study BA (USACE 2015).

Purpose and Objective
The purpose of the Española HR Study is to apply ecosystem restoration and flood risk management techniques in an effort to repair problems associated with river channel degradation and loss of riparian habitat that was identified within the project area.

Prior to construction of multiple irrigation and flood control dams in the early 1900s, the Rio Grande and the Rio Chama supported substantial areas of cottonwood (*Populus fremontii*), willow (*Salix* spp.), New Mexico olive (*Forestiera neomexicana*), and various species of shrub and wetlands (Scurlock, 1998). Stabilization of the channel through rectification and channelization supported development of extensive areas of cottonwood gallery forest in the 1940's through 60's, which is now reaching senescence (USACE 2015).

As stated in the Española HR Study BA, “Channelization activities, gravel mining and non-engineered spoil banks, coupled with climate and water management have modified the hydrology of the Rio Grande, resulting in changes to the composition of native bosque plant species and associated wildlife habitats. Consequently, the river channel through the project area has become incised. The decreasing groundwater table beneath the river has reduced soil moisture in the adjacent riparian areas, significantly reducing nutrient cycling and microbial and biochemical processes. This has directly contributed to the rapid decline and loss of the native cottonwoods, willows, and riparian ecosystems of the Rio Grande Basin. Channel incision has created 'drought' conditions on the adjacent floodplain, with patches of native riparian vegetation interspersed among larger areas of saltcedar and weedy upland vegetation.” (USACE 2015)

The proposed measures associated with the Española HR Study are to support long-term riparian habitat management on Ohkay Owingeh and Santa Clara Pueblo to benefit all species using a holistic approach (78 FR 343). The restoration options proposed have the potential to reverse the impacts associated with channel degradation and loss of habitat that Ohkay Owingeh and Santa Clara Pueblo have been experiencing.

Project Locations
The Española HR Study is located in Rio Arriba County, New Mexico. This consultation covers the action area being approximately 271.9 acres of restored habitat along the Rio Grande and Rio Chama from the north boundary of Ohkay Owingeh to the south boundary of the Pueblo of Santa Clara (Figure 1).
Figure 1. Location of proposed ecosystem restoration measures (USACE 2015).
Proposed Action
The proposed action consists of ecosystem restoration measures to restore 271.9 acres of the bosque (Table 1) within the study area. The measures are designed for (1) improving hydrologic connectivity with the floodplain by constructing grade restoration facilities (GRFs), high-flow channels, terrace lowering, willow swales and wetlands, and (2) restoring native vegetation and habitat by exotic species reduction, and riparian forest revegetation with native plant species. The proposed measure types and acreage are summarized below, and further details can be found within the Española HR Study BA (USACE 2015). Work is anticipated to be phased over seven to ten years with an initial construction phase in the fall of 2017.

Table 1. Summary of proposed ecosystem restoration measures.

<table>
<thead>
<tr>
<th>Ecosystem Measure</th>
<th>Acres</th>
</tr>
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<tbody>
<tr>
<td>Grade Restoration Facilities - Essential</td>
<td>12.2</td>
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<tr>
<td>Grade Restoration Facilities - Optional</td>
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<tr>
<td>High-Flow Channels</td>
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<td>Swales/Wetlands</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>271.9</strong></td>
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**Grade Restoration Facilities**

Grade restoration facilities (GRFs) are proposed to halt channel head-cutting and reconnect the floodplain on Ohkay Owingeh. Four GRFs are proposed to halt upstream migration of head-cuts (incised channels) from recent gravel mining operations. Two upstream GRFs are proposed to provide additional floodplain connectivity. The approximate 12.2 acres of GRFs constructed on Ohkay Owingeh would improve floodplain connectivity for up to 80 acres adjacent to the measures.

**High-flow Channels**

High-flow channels are proposed to improve floodplain connectivity on Ohkay Owingeh (2 acres) and Santa Clara Pueblo (20 acres). The objective of this measure is to re-establish the connections between the river and the bosque by constructing channels across the floodplain that would become inundated at flows between 1,500-3,000 cubic feet per second. This measure would entail the excavation of sediment out of the upstream and downstream portions of the remnant high-flow channels in order to re-establish the bosque-river connection, clearing out debris and non-native plants, and revegetating with native plants. High-flow channels would be intended to transport water to bosque vegetation. Embayments may be constructed as part of the high-flow channels when possible to create areas for native recruitment of cottonwoods and willows.

**Swales**

Approximately 48 acres of willow swales are proposed on Santa Clara Pueblo. Willow swales are defined as being depressions constructed by the removal of vegetation, dumped debris and soil and created with the intention to provide microenvironments in which native plants can thrive due to the decreased depth to the water table and moist soils. Depending upon the location, there could be a series of willow swales that become progressively drier with increasing distance from the river or water table.
**Wetland Restoration**

Wetland measures (17 acres) are proposed on Santa Clara Pueblo. Wetland restoration measures are defined as being open water wetlands, marsh wetlands, or wet meadows. A marsh wetland would have fluctuating water levels (usually 1-5 feet) and various vegetative species. These areas will be created by lowering the ground surface level below the local water table.

A wet meadow habitat is similar to a marsh wetland, but has much shallower standing water, and will be created by allowing flow from a deeper wetland area (such as an open water wetland) to flow out into an existing dry area or by lowering an area to the shallow groundwater table. This creates marshy or moist soil habitat about 6 inches deep with water.

**Terrace Lowering**

Terrace lowering is proposed to improve floodplain connectivity on Ohkay Owingeh (57 acres) and Santa Clara Pueblo (8 acres). Terrace lowering involves the removal of vegetation and excavation of soils adjacent to the main channel to enhance the potential for overbank flooding (USACE 2015).

**Vegetation Management**

The vegetation management restoration feature consists of two treatment phases: partial to complete removal of invasive plants and subsequent revegetation with native plant species. Vegetation management is proposed on Ohkay Owingeh (19 acres) and Santa Clara Pueblo (85 acres).

In many areas, continued maintenance and repeated treatment of invasive plant species for stump sprouting, and removal of juvenile volunteer non-natives is proposed and described in the operations and maintenance portion of the Española HR Study BA (USACE 2015).

**Vegetation Removal Treatments**

For both manual and mechanical treatment methods (described below), follow-up treatment with herbicides, or root ripping (raking approximately 6-12 inches into the ground in order to remove roots), may occur. Removal of non-native vegetative species would take place between August 15 and April 15 of each year in order to avoid bird nesting seasons and requirements, notably, under the Migratory Bird Act, which severely constrain activities with the potential to impact nesting birds.

**Manual treatment** - Using this method, dead material would be piled up and/or processed by cutting into small pieces using a chain saw. Large material would be hauled off, with some resources for use as fire wood. Smaller material would be chipped on site using a chipper. Chips would either be tilled into the ground prior to revegetation or hauled off, depending on their density. No more than 2 inches of chipped material would be left on site. The stump of any live non-native trees that is cut would be treated immediately with herbicide, if not entirely removed. This method would be used in areas where the bosque is not very wide and equipment would not fit, or areas where there are a large number of native trees and shrubs to protect.
Mechanical treatment - Mechanical control entails the removal of aerial portions of the tree (trunk and stems) by large machinery such as a tree shear or large mulching equipment. Both dead material and live non-native trees would be treated mechanically, and the stumps would be treated immediately with herbicide. Material would be processed as stated above: large material would be hauled off and smaller material would be chipped.

Combination treatment - A combination of manual treatment, mechanical treatment and use of herbicide. Some areas may be very dense, and the use of manual methods allows them to be opened up for machinery access. Mechanical equipment can then take over while hand crews move ahead of machinery to keep areas open enough to work in without damaging native vegetation to remain. The procedure to be implemented at each location would be evaluated on a site-by-site basis.

Re-sprout treatment - Following the initial removal of non-native plant species, re-sprouting from the root systems commonly occurs. These re-sprouts would be treated with either herbicide or by root-ripping prior to revegetating the area with native species. Thinning and removal of non-native vegetation under this proposed action would include herbicide treatment in many locations. Herbicide application would be used where root ripping is not an option. Herbicide would be immediately applied to the plant using a backpack sprayer, hand application with a brush, or other equipment that allows direct application.

Revegetation Treatments
The overall restoration strategy for the Española Valley Study is to revegetate all areas within the proposed action areas utilizing native species. Each sponsor will review and update the proposed seed and plant lists for measures in their areas. Maintenance and adaptive management would be important to the long-term success of the revegetated areas. Ongoing removal of non-native stump sprouts and volunteers would be necessary in all planted areas.

Different planting strategies would be combined in order to create the target mosaic mixture of different ecosystem types (bosque forest, grass meadow, wetlands). Planting strategies to target a riparian gallery forest mosaic would include the following revegetation treatments:

Grasses and forbs - Seeding with native and certified “weed free” grasses and forbs, such as Indian rice grass (Oryzopsis hymenoides), galleta grass (Hilaria jamesii), side oats grama (Bouteloua curtipendula), blue grama (Bouteloua gracilis), sand dropseed (Sporobolus cryptandrus), and sunflower (Helianthus annulus) and in wetter areas, yerba mansa (Anemopsis californicus), emory sedge (Carex emoryi), and salt grass (Distichlis stricta). Seeding involves sowing seed via methods such as broadcasting, crimp and drill, or hydro-mulching. Other than the gel in the hydro mulch, no irrigation would be applied. Timing of seeding would typically be in late summer. Wood debris, such as large logs that remain after thinning, would be placed strategically to provide additional habitat once seeding is completed.
Shrubs - Bare root or container planting with native shrubs, such as New Mexico olive, four wing saltbush (*Atriplex canescens*), chamisa (*Chrysothamnus nauseosus*), false indigo (*Amorpha fruticosa*), golden currant (*Ribes aureum*), three leaf sumac (*Rhus trilobata*), wolfberry (*Lycium pallidum*), and in wetter areas, coyote willow (*Salix exigua*), black willow (*Salix nigra var. gooddingii*), and seep willow (*Baccharis salicifolia*) would be an important strategy for establishing woody plants. Bare root planting refers to planting a plant directly in the ground without a rootball. Most of the native shrubs listed above would be grown in tall pots. Container planting refers to planting small plants in small containers. Plants would be watered through the first summer. Coyote willows can be planted directly in wet areas as live sticks. Shrubs would be planted at various densities depending on what is currently at the location. If no native understory vegetation exists at a location, then shrub planting density would be higher (500 stems per acre or more). If there is existing native vegetation, then a lower density of native shrubs would be installed (100-500 stems per acre as needed). Shrubs would be planted in the fall and trees would be planted in the winter.

Trees - Pole planting of native trees, such as the Rio Grande cottonwood (*Populus fremontii var. wislizenii*), and black willow. Branches of cottonwoods and willows, 10 feet to 15 feet in length, will be slipped into holes that have been augered through the soil to the water table. Little maintenance will be required beyond taking precautions to protect the young trees from beavers and monitoring groundwater levels. Trees will be planted at a fairly low density since cottonwoods exist throughout the proposed action area. They would be supplemented in some areas as needed but at a very low density (10-50 stem per acre). Willow trees are lacking in some areas of the proposed action area and would be planted at a higher density in those areas (25-75 stems per acre).

Wetland plants - Plug planting would be used to plant wetland and other moist soil plants within created water features. Species that could be provided as plugs include yerba mansa (*Anemopsis californicus*), native sedge (*Carex* spp.), native rush (*Scirpus* spp.), and saltgrass (*Distichlis stricta*). Plug planting refers to insertion of small seedlings with the soil or growth medium attached. Plugs are planted directly into moist soils on the edge of water features (wetlands, high-flow channels, etc.).

Recreational Features
Recreation features are proposed for the Santa Clara Wetlands and Gutierrez Pond area on the east side of the Rio Grande adjacent to the Santa Clara Hotel and Casino. The recreational features include a combination walking and biking trail, other gravel trails, informational kiosk and shade structures, hardened crossings to traverse the conveyance channel, and observation blinds for bird and wildlife watching. Gravel trails would follow existing trails, levees or access road alignments. Kiosks and benches would be placed at strategic locations along improved trails. Picnic areas are proposed along the trail where the Bosque vegetation would provide natural shade, along with river overlooks and a boardwalk to traverse wetland areas. A small amphitheater is proposed on the bank of Gutierrez Pond to allow for presentations to visitors on the Rio Grande, wetlands, Pueblo, and restoration projects.
Construction activities would be coordinated with the sponsors to avoid effects on tribal activities within the proposed action area. All work zones would be designated and signed with appropriate cautionary information.

Action Area
The Action Area includes the area where the ecosystem restoration features are located, from the north boundary of Ohkay Owingeh to the south boundary of Santa Clara Pueblo and the entire width of the 100 year Rio Grande floodplain within that reach.

II. STATUS OF THE SPECIES
Throughout this document the terms territory and site are used to help describe flycatcher population biology. A territory is the area occupied or defended by a single male or pair of flycatchers throughout the breeding season. Territories are the unit of measurement used by the Service in determining population status and trends. Flycatchers tend to cluster their territories. A flycatcher site may include a single territory or a cluster of territories. Migratory habitat is described for flycatcher long-distance migration and stopover habitat. The term ‘suitable or moderately suitable habitat’ refers to a patch of habitat with the adequate structure, density, and vegetation composition to accommodate flycatcher breeding, nesting, egg and fledgling rearing activity.

Species and Habitat Description
The flycatcher is a small grayish-green passerine bird (Family Tyrannidae) measuring approximately 5.75 inches in length. It has a grayish-green back and wings, whitish throat, light gray-olive breast, and pale yellowish belly. Two white wingbars are visible (juveniles have buffy wingbars). The eye ring is faint or absent. The upper mandible is dark, and the lower is light yellow grading to black at the tip. The song is a sneezy “fitz-bew” and the call is a repeated “whitt” (Sogge et al. 2010).

The flycatcher is one of four currently recognized willow flycatcher subspecies (Unitt 1987; Paxton 2000; Paxton et al. 2008). It is a neotropical migrant that breeds in the southwestern U.S. and migrates to Central and South America during the non-breeding season (Service 2002). The historic breeding range of the flycatcher included southern California, Arizona, New Mexico, western Texas, southwestern Colorado, southern Utah, extreme southern Nevada, and extreme northwestern Mexico (Sonora and Baja) (Unitt 1987; Browning 1993; Sogge et al. 2010).

The flycatcher breeds in dense riparian vegetation from sea level in California to approximately 8,500 feet in Arizona and southwestern Colorado. Flycatchers primarily nest in dense riparian patches of vegetation composed of Goodding’s willow (Salix gooddingii), coyote willow, Geyer’s willow (Salix geyeriana), arroyo willow (Salix lasiolepis), red willow (Salix laevigata), yewleaf willow (Salix taxifolia), boxelder (Acer negundo), tamarisk (also known as saltcedar, Tamarix ramosissima), and Russian olive (Elaeagnus angustifolia). While there are exceptions, generally flycatchers are not found nesting in areas without willows, tamarisk, or both (78 FR 343). Nesting activity typically begins in early June along the Middle Rio Grande (Moore and Ahlers 2015). Nests typically contain between three and four eggs (Sogge et al. 2010).
Flycatchers have higher site fidelity than nest fidelity and can move among breeding sites within and between drainages (Kenwood and Paxton 2001). Flycatchers will typically colonize in a large population (metapopulation) and disperse within 18-25 miles to form smaller populations (Paxton et al. 2007, 76 FR 50542). The median patch size of a flycatcher is roughly 4.5 acres (1.8 hectares) and minimum width is 33 feet (Service 2002). In the Middle Rio Grande, at least 50% canopy cover over 3 meters in height was documented for occupied flycatcher habitat and occupied patches consisted of a tree stem density of 2,840 stems per hectare (Moore 2007).

Saltcedar is an important component of nesting and foraging habitat in throughout the species range. For example, during 2014 and along the Middle Rio Grande, 162 of the 257 (63 percent) known flycatcher nests (in 364 territories) were in saltcedar (Moore and Ahlers 2015). Three habitat types have been described for the flycatcher including: native broadleaf, monotypic exotic, and mixed native/exotic (Sogge et al. 2010).

Flycatcher suitable habitat is dynamic and can change rapidly; historically occupied sites can mature beyond suitable habitat for nesting, suitable saltcedar or willow habitat can develop in three to five years, heavy runoff can reduce/remove suitable habitat in a day, or river characteristics may change (McLeod et al. 2005, Siegle et al. 2013). Flycatcher use of riparian vegetation in different successional stages may also be dynamic. For example, over-mature or young riparian vegetation not suitable for nest placement can be occupied and used for foraging and shelter by migrating, breeding, dispersing, or non-territorial individuals (McLeod et al. 2005). That same habitat may subsequently grow or cycle into habitat used for nest placement. Flycatcher habitat can quickly change and vary in suitability, location, use, and occupancy over time (Finch and Stoleson 2000).

**Listing and Critical Habitat**

The final rule listing the flycatcher as endangered was published on February 27, 1995 and designation of critical habitat was deferred (60 FR 10694). Flycatcher critical habitat was designated on July 22, 1997 in the Federal Register (62 FR 39129). In May 2001, citing a faulty economic analysis, the 10th Circuit Court of Appeals vacated the designation of critical habitat and instructed the Service to issue a new flycatcher critical habitat designation. On October 19, 2005, the Service again designated critical habitat for the flycatcher in approximately 120,824 acres or 737 miles within Arizona, California, Nevada, New Mexico and Utah. On July 13, 2010, the Service agreed to revise critical habitat for the flycatcher; while the 2005 critical habitat designation remained in place.

A proposal for the designation of flycatcher critical habitat was published in the Federal Register on October 12, 2004 (69 FR 60706), with a final rule published October 19, 2005 (70 FR 60886). A total of 737 river miles in southern California, Arizona, New Mexico, southern Nevada, and southern Utah were included in the final designation. The lateral extent of critical habitat included areas within the 100-year floodplain.

As a result of a suit filed by the Center for Biological Diversity over the critical habitat designation in 2005, a revision for critical habitat was proposed on August 15, 2011 (76 FR 50542). The final rule published January 3, 2013 (78 FR 343). The new designation includes a total of 1,227 river miles within the same states listed in the 2005 designation. Within the
project area, critical habitat was designated from the southern boundary of Ohkay Owingeh
downstream through Santa Clara Pueblo. The primary constituent elements (PCEs) of critical
habitat include riparian plant species in a successional riverine environment (for nesting,
foraging, migration, dispersal, and shelter), specific structure of this vegetation, and insect
populations for food. A variety of river features such as broad floodplains, water, saturated soil,
hydrologic regimes, elevated groundwater, fine sediments, etc. help develop and maintain these
PCEs (78 FR 343).

Primary Constituent Elements of Critical Habitat

The PCEs listed in the 2013 final rule for the flycatcher are:

(1) Riparian vegetation. Riparian habitat along a dynamic river or lakeside, in a natural or
manmade successional environment (for nesting, foraging, migration, dispersal, and shelter) that
is comprised of trees and shrubs (that can include Goodding’s willow, coyote willow, Geyers
willow, arroyo willow, red willow, yewleaf willow, pacific willow (Salix lasiandra), boxelder,
tamarisk, Russian olive, buttonbush (Cephalanthus occidentalis), cottonwood (Populus
fremontii), stinging nettle (Urtica dioica), alder (Alnus rhombifolia, A. oblongifolia, A.
tenuifolia), velvet ash (Fraxinus velutina), poison hemlock (Conium maculatum), blackberry
(Rubus ursinus), seep willow (Baccharis salicifolia, B. glutinosa), oak (Quercus agrifolia, Q.
chrysolepis), rose (Rosa californica, R. arizonica, R. multiflora), sycamore (Platina wrightii),
false indigo (Amorpha californica), Pacific poison ivy (Toxicodendron diversilobum), grape
(Vitis arizonica), Virginia creeper (Parthenocissus quinquefolia), Siberian elm (Ulmus pumila),
and walnut (Juglans hindsii)) and some combination of:

(a) Dense riparian vegetation with thickets of trees and shrubs that can range in height from
about 2 to 30 meters (about 6 to 98 feet). Lower-stature thickets (2 to 4 meters or 6 to 13
feet tall) are found at higher elevation riparian forests and tall-stature thickets are found at
middle and lower-elevation riparian forests;
(b) Areas of dense riparian foliage at least from the ground level up to approximately 4
meters (13 feet) above ground or dense foliage only at the shrub or tree level as a low,
dense canopy;
(c) Sites for nesting that contain a dense (about 50 percent to 100 percent) tree or shrub (or
both) canopy (the amount of cover provided by tree and shrub branches measured from
the ground);
(d) Dense patches of riparian forests that are interspersed with small openings of open water
or marsh or areas with shorter and sparser vegetation that creates a variety of habitat that
is not uniformly dense. Patch size may be as small as 0.1 hectare (0.25 acre) or as large
as 70 hectares (175 acres).

(2) Insect prey populations. A variety of insect prey populations found within or adjacent to
riparian floodplains or moist environments, which can include: flying ants, wasps, and bees
(Hymenoptera); dragonflies (Odonata); flies (Diptera); true bugs (Hemiptera); beetles
(Coleoptera); butterflies, moths, and caterpillars (Lepidoptera); and spittlebugs (Homoptera).

It is important to recognize that the PCEs, (PCE 1a and 2), are present throughout the river
segments selected, but the specific quality of riparian habitat for nesting (PCE 1b, 1c, 1d, 1e),
migration (PCE 1), foraging (PCE 1 and 2), and shelter (PCE 1) will not remain constant in their
condition or location over time due to succession (i.e., plant germination and growth) and the
dynamic environment in which they exist (78 FR 343).
Flycatcher Recovery
The Service published a final flycatcher Recovery Plan in 2002 (Service 2002). The Recovery Plan (Service 2002) identified several key strategies tied to flycatcher conservation such as: (1) populations should be distributed close enough to each other to allow for movement; (2) maintaining/augmenting existing populations is a greater priority than establishing new populations; and (3) a population’s increase improves the potential to disperse and colonize. Breeding habitat objectives are incorporated into the delisting criteria because of the importance of providing replacement habitat for dispersing flycatchers after natural stochastic destruction of existing breeding habitat, and suitable habitat for future population growth. Essential to the survival and recovery of the flycatcher is a minimum size, distribution and spatial proximity of habitat patches that promotes metapopulation stability. The current size of occupied breeding habitat patches is skewed heavily toward small patches and small population sizes; this situation inhibits recovery. Recovery will be enhanced by increasing the number of larger populations and by having populations distributed close enough to increase the probability of successful immigration by dispersing flycatchers. The Recovery Plan further describes the reasons for endangerment, current status of the flycatcher, addresses important recovery actions, includes detailed issue papers on management issues, and identifies the goals for recovery.

Flycatcher recovery is defined by reaching numerical and habitat related goals for each specific management unit established throughout the subspecies range and establishing long-term conservation plans (Service 2002). Because the breeding range of the flycatcher encompasses a broad geographic area with much site variation, management of its recovery is approached in the Recovery Plan by dividing the flycatcher’s range into six Recovery Units, each of which are further subdivided into Management Units (Service 2002). This provides an organizational strategy to “characterize flycatcher populations, structure recovery goals, and facilitate effective recovery actions that should closely parallel the physical, biological, and logistical realities on the ground” (Service 2002). Recovery goals are recommended for most Management Units. Recovery Units are defined based on large watershed and hydrologic units.

Within each Recovery Unit, Management Units are based on watershed or major drainage boundaries at the Hydrologic Unit Code Cataloging Unit level. Flycatcher habitat within Recovery and Management Units is expected to expand, contract, or change as a result of flooding, drought, inundation, and changes in floodplains and river channels (Service 2002) that result from natural occurrences and water or land management choices. The Recovery Plan (Service 2002) provides recommendations to recover the flycatcher and provides two alternatives, either of which can be met, in order to consider downlisting the species to threatened status. The proposed action will occur in the Upper Rio Grande Management Unit of the Rio Grande Recovery Unit for the flycatcher (77 FR 41147). The Recovery Plan identified a goal of 75 flycatcher territories in the Upper Rio Grande Management Unit to contribute towards recovery.

Rangewide Distribution and Abundance of Flycatchers
There are currently 288 known flycatcher breeding sites in California, Nevada, Arizona, Utah, New Mexico, and Colorado (all sites where a resident flycatcher has been detected as of the 2007 breeding season) holding an estimated 1,299 territories (Durst et al. 2008) (table 2). Currently, rangewide population stability is believed to be largely dependent on the presence of large
populations in the Gila River, Rio Grande, and San Pedro River drainages where approximately 60 percent of the 1,299 territories exist as of the breeding season of 2007. 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 species. Conversely, expansion into new habitats or discovery of other populations will improve the known stability and status of the flycatcher.

Since listing in 1995, at least 155 Federal agency actions have undergone (or are currently under) formal section 7 consultation to address effects to the species. Many activities continue to adversely affect the distribution and extent of all stages of flycatcher habitat throughout its range (development, urbanization, grazing, recreation, native and non-native habitat removal, dam operations, river crossings, ground and surface water extraction, etc.). Stochastic events also continue to change the distribution, quality, and extent of flycatcher suitable habitat.

Table 2. Number of flycatcher breeding sites and territories by state, as of 2007. (There is no recent survey data or other records to know the current status and distribution within the state of Texas.) (Durst et al. 2008).

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<th>Percentage of sites with flycatcher territories as of 2007</th>
<th>Number of flycatcher territories as of 2007</th>
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<td>New Mexico</td>
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<td>14.2 %</td>
<td>519</td>
<td>40.0 %</td>
</tr>
<tr>
<td>Utah</td>
<td>3</td>
<td>1.0 %</td>
<td>7</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>288</strong></td>
<td><strong>100 %</strong></td>
<td><strong>1299</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

_Distribution and Abundance in New Mexico and the Action Area_

Unitt (1987) considered New Mexico as the state with the greatest number of flycatchers remaining. After reviewing the historic status of the flycatcher and its riparian habitat in New Mexico, Hubbard (1987) concluded, “[it] is virtually inescapable that a decrease has occurred in the population of breeding flycatchers in New Mexico over historic time. This is based on the fact that wooded sloughs and similar habitats have been widely eliminated along streams in New Mexico, largely as a result of the activities of man in the area.” Unitt (1987), Hubbard (1987), and more recent survey efforts have documented very small numbers and/or extirpation in New Mexico on the San Juan River (San Juan County), near Zuni (McKinley County), Blue Water Creek (Cibola County), and the Rio Grande (Doña Ana County and Socorro County).

In New Mexico, surveys and monitoring in 2007 documented approximately 519 flycatcher territories (Durst et al. 2008). During the 2003 survey season two new sites were detected in New Mexico, both were in the upper reaches of the Canadian River drainage, one in Colfax County and one in Mora County. Two more new sites were detected during the 2005 survey.
season, one in Mora County and one near the Mimbres River in Grant County. In 2007 a new site was found on the San Francisco River in Catron County. In 2008 a new nesting site was found on the Black River in Eddy County. Flycatchers have been observed at a total of 42 sites in New Mexico along the Rio Grande, Chama, Canadian, Gila, San Francisco, San Juan, Pecos, and Zuni drainages.

In the Upper Rio Grande Management Unit of the Rio Grande Recovery Unit for the flycatcher, there is estimated to be approximately 20-30 flycatcher territories (Service 2002, Durst et al. 2008) (Figure 2).
Figure 2. Flycatcher Recovery Plan Rio Grande Recovery Unit and the Upper Rio Grande Management Unit (Service 2002).
III. ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the ESA, when considering the effects of the action on federally listed species, the Service is required to take into consideration the environmental baseline. Regulations implementing the ESA (50 CFR 402.02) define environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area; the anticipated impacts of all proposed Federal actions in the action area that have already undergone formal or early section 7 consultation; and the impact of State and private actions that are contemporaneous with the consultation in process.

Habitat Characteristics
Habitat characteristics within the project area range from areas with dense mature cottonwoods and willows to areas with sparse upland vegetation or exotic vegetation (USACE 2015). Patches of suitable or marginally suitable habitat are present within the action area and several restoration projects sponsored by the Middle Rio Grande Endangered Species Collaborative Program have historically taken place within the action area (La Calandria 2012).

As described in the Española HR Study BA, in the early 1900’s, the action area supported substantial areas of cottonwood, willow, New Mexico olive, and various species of shrub and wetlands (Scurlock 1998). Since then, the area has changed due to dam construction, channelization activities, gravel mining, non-engineered spoil banks, water management and climate change (USACE 2015). The river in the action area is now incised and the groundwater table has decreased, directly contributing to the decline and loss of native riparian vegetation and transition to large expanses of exotic and upland vegetation (USACE 2015). The non-native vegetation consists of saltcedar, Russian olive, Siberian elm, and tree of heaven (USACE 2015).

Saltcedar Leaf Beetle (*Diorhabda* spp.)
The saltcedar leaf beetle was released in 2001 (DeLoach *et al*. 2003) to control saltcedar. The saltcedar leaf beetle controls saltcedar by repeated leaf defoliation which typically occurs during flycatcher breeding season (Tamarisk Coalition). In 2015, saltcedar leaf beetle presence was observed along the Middle Rio Grande north of Albuquerque (Tamarisk Coalition 2015). The saltcedar leaf beetle has now been observed along the Rio Grande throughout the majority of New Mexico (Tamarisk Coalition 2015). Recent drought, channel incision and senescence of native vegetation have provided conditions for saltcedar to become more dominant within the action area (USACE 2015).

Historic Consultations
Along the Rio Grande, the following past and present federal, state, private, and other human activities, in addition to those discussed above, have affected the flycatcher and its critical habitat within the action area:

1. **Programmatic Biological Opinion on the Effects of Actions Associated with the U. S. Bureau of Reclamation’s, U.S. Army Corps of Engineers’, and non-federal Entities’ Discretionary Actions Related to Water Management on the Middle Rio Grande:** The Service completed this biological opinion on 17 March 2003, determining the effects of water management by the applicants on the silvery minnow and flycatcher. This
biological opinion had one Reasonable and Prudent Alternative (RPA) with several elements. These elements set forth a flow regime in the Middle Rio Grande and described habitat improvements necessary to alleviate jeopardy to both the silvery minnow and flycatcher.

2. **Joint Biological Assessment** U.S. Bureau of Reclamation, Bureau of Indian Affairs, and Non-Federal Water Management and Maintenance Activities on the Middle Rio Grande, New Mexico Middle Rio Grande Project, San Juan-Chama Project, and Upper Colorado Region: Bureau of Reclamation submitted this BA on August 31, 2015. This consultation includes effects analysis for the silvery minnow, flycatcher, cuckoo, New Mexico Meadow Jumping Mouse (mouse), Pecos Sunflower, and Interior Least Tern as related to Middle Rio Grande water operations and maintenance.

3. **Biological Assessment** Middle Rio Grande Endangered Species Collaborative Program Restoring Loosestrife Pond – Expanding Flycatcher Habitat and Controlling Invasive Plants along a Backwater of the Rio Grande at Ohkay Owingeh: Habitat restoration project geared towards expanding pre-existing flycatcher habitat and removal of invasive species. Concurrence was provided to this informal consultation dated March 29, 2012.

4. **Biological Assessment** Ohkay Owingeh Two Rivers and Three Falls Flycatcher Habitat Expansion – Middle Rio Grande Endangered Species Collaborative Program: Bureau of Reclamation submitted this informal consultation in September 2009 and the project involved expanding flycatcher habitat by excavating a filled-in secondary river channel to reconnect it to the Rio Grande.

5. **Intra-Service Section 7 Biological Evaluation** – Ohkay Owingeh (San Juan Pueblo), 8 acres of Riparian and Riverine Habitat Restoration: The Service submitted this informal consultation on August 8, 2006. This was a habitat restoration project by the Partners for Fish and Wildlife Program with the goal of removing non-native species, treating re-sprouts, and wetland restoration. This project added to the 745 acres of riparian habitat that had previously been treated for non-native vegetation removal.

**Importance of the Action Area to the Survival and Recovery of the Species**
The flycatcher Recovery Plan identifies five Recovery Units, the Basin and Mojave, Lower Colorado River, Upper Colorado River, Gila River, and Rio Grande. Flycatcher populations are not distributed evenly throughout these Recovery Units, with the majority of individuals found in the Coastal California, Lower Colorado, Gila, and Rio Grande Recovery Units (Service 2002).

The Rio Grande Recovery Unit contains the easternmost population of flycatchers, and currently has approximately 24 percent of known territories (Durst et al. 2008). The Rio Grande Recovery Unit covers a major portion of the flycatcher’s previous range. In order to be well protected against disease and catastrophe, the species should be well distributed geographically. The survival and recovery of the flycatcher is dependent on healthy, self-sustaining populations of birds, which are able to exchange genetic information on occasion, and act as a source population should one area suffer significant losses (Soule et al. 1986). The loss or reduction of a major population within a Recovery Unit could have potentially significant effects to the surrounding Recovery Units if genetic information is lost or if a source population which has been supporting other sites is significantly reduced.
Summary
The action area was historically a naturally dynamic riparian system with native vegetation and areas with overbank flows. Since the early 1900’s, the action area has now become an area with an incised river, mature native vegetation, and exotic vegetation encroachment. Several restoration projects have taken place in the last decade in an effort to reconnect the floodplain, remove exotic vegetation, enhance wetlands, re-establish native vegetation and expand on flycatcher suitable habitat. The flycatcher population in the Upper Rio Grande Management Unit (as part of the Rio Grande Recovery Unit) is an important source population. Re-establishing a dynamic hydrological system is critical in the action area in order to increase or maintain plant health and foliage cover, promote natural regeneration, and scour and deposit nutrients in the soil.

IV. EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or designated critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, which will be added to the environmental baseline. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur. 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. The following section describes the effects on flycatcher and its critical habitat, and on cuckoo and its proposed critical habitat a resulting from the proposed action.

The overall goal of this project is to improve floodplain conditions which, in turn, would increase the potential for flycatcher habitat creation. However, the construction associated with this proposed action will likely overlap with historically occupied flycatcher territories. Because flycatchers typically exhibit a strong site fidelity to successful breeding locations, the construction activities would likely indirectly impact flycatchers by removing habitat, and thus, creating the need for flycatchers to relocate upon arrival to their breeding ground. We consider this a form of harm and/or harassment due to their displacement caused by the removal of habitat. The construction activities that would overlap with historically occupied areas include terrace lowering, vegetation management, excavation of a high-flow channel. All of these construction methods would either remove vegetation completely or alter the vegetation composition to the point where the habitat may no longer be suitable.

Based on correspondence between the USACE, the Service, and Ohkay Owingeh, we believe the following construction activities associated with various ecosystem measures would displace up to 6 flycatcher territories:

Table 3. Summary of construction activity intersecting with flycatcher habitat.

<table>
<thead>
<tr>
<th>Ecosystem Measure Type</th>
<th>Ecosystem Measure Identification</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrace Lowering</td>
<td>3201, 3203, 3208, 3209</td>
<td>13.32</td>
</tr>
<tr>
<td>Vegetation Management</td>
<td>3002</td>
<td>10.23</td>
</tr>
<tr>
<td>High-flow Channel</td>
<td>3213</td>
<td>1.83</td>
</tr>
</tbody>
</table>
The features listed in Table 3 also have the potential to increase flycatcher habitat availability over time. Terrace lowering and high-flow channels will increase frequency or potential for overbank flows, resulting in moist soils and decreased depth to groundwater and, thus, increasing the chance of natural regeneration of dense riparian vegetation flycatchers depend on. The removal of exotic vegetation via the vegetation management proposed action would decrease the overall amount of vegetative cover initially, but the subsequent native species planting will ensure replacement by more desirable species. The removal of exotic vegetation and replacement of native species would also decrease the possibility of flycatchers being impacted by saltcedar leaf beetle defoliation.

Overall, 25.38 acres of habitat used by flycatchers would be negatively impacted by the construction activities associated with the proposed action. The ultimate goal of the project is to enhance habitat in at least 271.9 acres of the floodplain over time. It is estimated that habitat availability would not be a limiting factor for the displaced flycatchers because there are areas with suitable or moderately suitable habitat within 25 miles of the project location.

In summary, the proposed action construction activities are estimated to displace up to 6 flycatcher territories. Though there would be short term losses in the form of harassment, displacement, and habitat loss; over the long term, the overall benefit of the proposed action would be positive for the flycatcher population and habitat located in this area.

**Effect to Designated Critical Habitat**

The vegetation management ecosystem restoration measure proposed is located within 9.5 acres of designated critical habitat boundaries. The 9.5 acres where this will occur currently has either sparse vegetation or an abundance of exotic vegetation and would be replanted with more desirable species at a greater density than what is currently present. No known flycatcher territories are located in these areas. We concur with USACEs’ determination that the Española HR Study is not likely to adversely affect flycatcher designated critical habitat.

**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 draft 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. Cumulative effects include:

- Increases in development and urbanization in the historic floodplain that result in reduced peak flows because of the flooding threat. Development in the floodplain makes it more difficult, if not impossible, to transport large quantities of water that will overbank and create low velocity habitats for flycatchers.

- Increased urban use of water, including municipal and private uses. Further use of surface water from the Rio Grande will reduce river flow and decrease available habitat for flycatchers.

- Human activities that may adversely impact the flycatcher by decreasing the amount and suitability of habitat include dewatering the river for irrigation; increased water
pollution from non-point sources; habitat disturbance from grazing activities and/or recreational use.

- Wildfires and wildfire suppression in the riparian areas along the Rio Grande may have an adverse effect on flycatchers. Wildfires are a fairly common occurrence in the bosque (riparian area) along the Rio Grande. The increase in wildfires has been attributed to increasingly dry, fine fuels and ignition sources. The spread of the highly flammable plant, saltcedar, and drying of river areas due to river flow regulation, water diversion, lowering of groundwater tables, and other land practices is largely responsible for these fuels. Wildfires have the potential to destroy flycatcher habitat.

- The removal of non-native vegetation (i.e. saltcedar or Russian olive) through mechanical or biological control (i.e. saltcedar leaf beetle (*Diorhabda sp.*)), can adversely affect the amount of available flycatcher habitat. In areas where non-native trees are removed and replaced with native vegetation as part of a restoration project, habitat may be created. Where phreatophyte removal is not followed by restoration, habitat for the flycatcher is lost.

- The effect global warming may have on the flycatcher is still unpredictable. However, mean annual temperature in Arizona increased by 1 degree per decade beginning in 1970 and 0.6 degrees per decade in New Mexico (Lenart 2005). In both New Mexico and Arizona the warming is greatest in the spring (Lenart 2005). Higher temperatures lead to higher evaporation rates which may reduce the amount of runoff, groundwater recharge, and lateral extent of rivers such as the Rio Grande. Increased temperatures may also increase the extent of area influenced by drought (Lenart 2003).

The Service anticipates that these conditions and types of activities will continue to threaten the survival and recovery of the flycatcher by reducing the quantity and quality of habitat through the continuation and expansion of habitat degrading actions.

V. CONCLUSION

After reviewing the current status of the flycatcher, designated critical habitat, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects; it is Service’s biological opinion that the Española HR Study is not likely to jeopardize the continued existence of the flycatcher or result in adverse modification of designated critical habitat. Population numbers and habitat availability would be expected to decrease in the Upper Rio Grande Management Unit by up to 6 territories in the short term prior to establishment or replacement of vegetation as a result of the proposed action. However, it would be anticipated that for the long term, the ecological restoration features associated with this proposed action will enhance the dynamic environment in the project area that is critical for flycatchers. We also conclude that the primary constituent elements of flycatcher designated critical habitat adjacent to the action area will serve the intended conservation role for the species with implementation of the proposed action while vegetation becomes re-established within the 25.38 acres of historically occupied habitat.
INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation 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 by the Service 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 by the Service 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 USACE so that they become binding conditions of any grant or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. The action agency has a continuing duty to regulate the activity covered by this incidental take statement. If the action agency (1) fails to assume and implement the terms and conditions or (2) fails to require adherence 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 action agency must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)]

AMOUNT OR EXTENT OF TAKE ANTICIPATED

The Service developed the following incidental take statement based on the proposed actions associated with the Española HR Study.

Take would be expected in the form of harassment and displacement in the areas where terrace lowering, high-flow channel and vegetation management would take place in flycatcher historically occupied locations. It is estimated that up to 6 flycatcher territories would be taken as the result of the removal of 25.38 acres of historically occupied flycatcher habitat.

EFFECT OF TAKE

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the flycatcher, because the number that may be taken would not impair flycatcher recovery goals for the Rio Grande Recovery Unit.

Conservation measures in the Española HR Study BA were also taken into consideration for the effect of take and include the following actions:
1. Stormwater controls will be installed and maintained during excavation activities as appropriate for the NPDES Construction General Permit and Stormwater Pollution Prevention Plan. Silt fence will be installed adjacent to the riverbank where needed for stormwater control.

2. Cofferdams, dikes, straw bales or other suitable erosion control measures would be used during construction of bank line measures (high-flow channel inlets and outlets).

3. Cleaning of all equipment to prevent the spread of invasive species is required prior to entering the project area (National Invasive Species Council 2008).

4. Equipment operators will be required to carry an oil spill kit or spill blanket at all times and must be knowledgeable in the use of spill containment equipment. The contractor will develop a spill contingency plan prior to initiation of construction. The plan will identify where storage and dispensing fuels, lubricants, hydraulic fluids, and other petrochemicals will be located outside the 100-year floodplain. The contractor will inspect construction equipment daily for petrochemical leaks. All spills will be contained immediately and all contaminated media will be disposed of following the Resource Conservation and Recovery Act. If a reportable quantity is released, the contractor will notify NMED and U.S. EPA as soon as possible after learning of a discharge, but in no event more than twenty-four hours thereafter. The staging areas will be located outside the 100-year floodplain. The construction equipment will be parked outside the 100-year floodplain during periods of inactivity for an extended period or based on weather conditions. The equipment operators will place drip-pans underneath vehicles at the end of each work day.

5. All work and staging area will be limited to the minimum amount of area required. Existing roads and right-of-ways and staging areas will be used to the greatest extent practicable to transport equipment and construction materials to the project site, and described in the USACE’s project description. Designated areas for vehicle turn around will be provided and maneuvering conducted so as to protect riparian area from unnecessary damage.

6. Mature cottonwood trees will be protected from damage during clearing of non-native species or other construction activities using fencing, or other appropriate materials.

7. Local genetic stock will be used wherever possible in the native plant species establishment throughout the riparian area.

8. Work inside the bosque will not occur during migratory bird breeding season (April 15 to August 15). Surveys will be conducted for the presence/absence of flycatchers during their breeding season in areas surrounding proposed measures prior to construction.
REASONABLE AND PRUDENT MEASURE

The Service believes the following Reasonable and Prudent Measure (RPM) is necessary and appropriate to minimize impacts of incidental take of the flycatcher due to activities associated with the proposed project.

1. Minimize take of flycatchers in the form of loss of habitat due to construction activities.

TERMS AND CONDITIONS

Compliance with the following terms and conditions must be achieved in order to be exempt from the prohibitions of section 9 of the ESA. These terms and conditions implement the proposed action described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

To implement RPM 1, USACE shall:

1.1 Conduct flycatcher protocol presence/absence surveys within the proposed action area, or coordinate with Ohkay Owingeh and/or the Pueblo of Santa Clara if flycatcher surveys already take place, in order to determine the most accurate and up to date flycatcher territory locations. To the extent possible, adjust access or other construction activities to avoid the territory and minimize fragmentation of the occupied habitat patch.

1.2 Ensure that habitat within 0.25 miles of a historic flycatcher territory (within 2 years prior to construction) lost to construction activities is restored to the same amount (estimated 25.38 acres) of suitable habitat within 3-4 years of the proposed action. In the event habitat does not naturally regenerate with native species, active planting or restoration in the density required to accommodate nesting activity must take place and be available to the flycatcher by year 2030 (3 years after construction is complete). Suitable habitat is considered a patch at least 33 feet wide and 4.5 acres in size with canopy cover being 50% (or more) and woody stem density of approximately 2800 stems per hectare (1133 stems per acre).

For the RPM, USACE shall monitor the implementation as set forth in this terms and conditions section. An annual report of the progress made in construction activities, updates of how many flycatchers were impacted, as well as how many acres were taken or replaced (via natural recruitment or active planting) must be submitted to the Service’s NMESFO. Any measures the USACE took to minimize disturbance to historic territories should also be noted at this time annually. These reports should reference consultation #02ENNM00-2014-F-0436 and should be sent to the email address nmesfo@fws.gov or by mail to the New Mexico Ecological Services Field Office, 2105 Osuna Road NE, Albuquerque, New Mexico 87113.
CONSERVATION RECOMMENDATIONS

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

1. Monitor, maintain, and expand habitat restoration areas.
2. Restore channel function, form, and processes.
3. Maintain the bosque and re-establish native vegetation regeneration.
4. Create wetlands and marshes within the floodplain.
5. Investigate opportunities to enrich habitat for jumping mouse, cuckoo, and/or other sensitive species.
6. Update the riparian and wetland plant and seeding specifications during the design phase with input from the sponsors.

RE-INITIATION NOTICE

This concludes formal consultation on the action(s) described in the USACE Española HR Study BA. As provided in 50 CFR § 402.16, re-initiation 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 designated critical habitat in a manner or to an extent not considered in this biological opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or designated critical habitat not considered in this biological opinion; (4) adaptive management that includes additional earth work is needed to repair or maintain the project after the initial construction phase; or (5) 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 re-initiation.
Literature Cited


Hubbard, J.P. 1987. The status of the Willow Flycatcher in New Mexico. Endangered Species Program. New Mexico Department of Game and Fish.


Tamarisk Coalition.  Tamarisk Beetle.  Online:  http://www.tamariskcoalition.org/programs/tamarisk-beetle


