



1 **DRAFT ENVIRONMENTAL ASSESSMENT FOR THE DESIGNATION OF CRITICAL**  
2 **HABITAT FOR THE SOUTHWESTERN WILLOW FLYCATCHER**

3 June 2012

4 **Lead Agency:** Department of the Interior—United States Fish & Wildlife Service (USFWS)

5 **Contact Person:**

6 Steve Spangle, Field Supervisor  
7 U.S. Fish and Wildlife Service  
8 Arizona Ecological Services Office  
9 2321 West Royal Palm Rd., Suite 103  
10 Phoenix, AZ 85021  
11 Telephone 602-242-0210; facsimile 602-242-2513  
12

13 **Summary**

14 The purpose of this environmental assessment (EA) is to identify and disclose the environmental  
15 consequences resulting from the Proposed Action of designating critical habitat for the  
16 southwestern willow flycatcher (*Empidonax traillii extimus*), proposed on August 15, 2011 under  
17 the Endangered Species Act of 1973 (ESA), as amended (76 FR 50542-50629). The need for the  
18 Proposed Action is to comply with a settlement agreement reached on July 23, 2010, in which  
19 the Service agreed to redesignate critical habitat in response to a 2008 lawsuit by the Center for  
20 Biological Diversity challenging the 2005 designation. The settlement left the existing critical  
21 habitat designation from 2005 in effect, and required that the Service deliver a proposed rule for  
22 new revised critical habitat to the Federal Register by July 31, 2011, and a final rule by July 31,  
23 2012.

24 Three alternatives were considered: Alternative A –All Designated Areas, No Exclusions;  
25 Alternative B – Exclusions, and the No Action Alternative. Alternative A would designate  
26 3,402 km stream kilometers (2,113 stream miles) as critical habitat. These areas are being  
27 proposed as stream segments, with the lateral extent including the riparian areas and streams  
28 that occur within the 100-year floodplain or flood-prone areas. The proposed critical habitat is  
29 located on a combination of Federal, State, tribal, and private lands in Imperial, Inyo, Kern, Los  
30 Angeles, Mono, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura  
31 Counties in California; Clark, Lincoln, and Nye Counties in southern Nevada; Kane, San Juan,  
32 and Washington Counties in southern Utah; Alamosa, Conejos, Costilla, La Plata, and Rio  
33 Grande Counties in southern Colorado; Apache, Cochise, Gila, Graham, Greenlee, La Paz,  
34 Maricopa, Mohave, Pima, Pinal, Santa Cruz, Yavapai, and Yuma Counties in Arizona; and  
35 Catron, Cibola, Dona Ana, Grant, Hidalgo, McKinley, Mora, Rio Arriba, Santa Fe, San Juan,  
36 Sierra, Socorro, Taos, and Valencia Counties in New Mexico. Areas controlled and managed  
37 by the U.S. Department of Defense (DoD) with an Integrated Natural Resources Managemnet  
38 Plan that benefited the flycatcher were exempted.

39 Alternative B is similar to Alternative A, but it excludes certain areas that are being considered  
40 for exclusion because they are managed under Habitat Conservation Plans (HCPs),

1 Memorandums of Understanding (MOUs), and/or have management plans and active  
2 partnerships directly beneficial to the flycatcher and its essential proposed critical habitat. As  
3 in Alternative A, with some DoD exempted. The No Action Alternative is required by the  
4 National Environmental Policy Act (NEPA) for comparison to the other alternatives analyzed in  
5 this EA; it entails continuing the existing designation of critical habitat, finalized in 2005.

6 The environmental issues identified by Federal agencies and the public during the initial public  
7 comment period and during resource analysis were those raised by the types of actions taken by  
8 public and private land managers in the region, including the impacts of critical habitat  
9 designation on soils, vegetation, wildlife, water resources, wildland fire management, livestock  
10 grazing, land management and use, recreation, public health and safety, Tribal Trust resources,  
11 environmental justice, and national security.

12  
13 The designation of critical habitat for the southwestern willow flycatcher would not have direct  
14 impacts on the environment; designation is not expected to impose land use restrictions or  
15 prohibit land use activities. However, the designation of critical habitat would (1) increase the  
16 number of additional section 7 consultations for proposed projects within designated critical  
17 habitat; (2) increase the number of re-initiated section 7 consultations for ongoing projects within  
18 designated critical habitat; (3) maintain southwestern willow flycatcher primary constituent  
19 elements; (4) increase the likelihood of greater expenditures of time and Federal funds of  
20 government agencies to develop measures to prevent both adverse effects to the species and  
21 adverse modification to critical habitat; and (5) indirectly increase the likelihood of greater  
22 expenditure of non-Federal funds by project proponents to complete section 7 consultations and  
23 to develop reasonable and prudent alternatives (as a result of adverse modifications) that  
24 maintain critical habitat. Such an increase might occur where there is a Federal nexus to actions  
25 within areas with no known flycatcher territories, or from the addition of adverse modification  
26 analysis to jeopardy consultations in known flycatcher habitat.

27

# 1 *Table of Contents*

---

2	<i>Summary</i> .....	2
3	<i>Table of Contents</i> .....	4
4	<i>Acronyms &amp; Abbreviations</i> .....	7
5	<i>Glossary</i> .....	9
6	CHAPTER 1 PURPOSE OF AND NEED FOR ACTION .....	11
7	1.1 Introduction .....	11
8	1.2 Purpose and Need of the Action.....	11
9	1.3 Proposed Action .....	12
10	1.4 Background .....	12
11	1.4.1 Critical Habitat.....	12
12	1.4.2 Southwestern willow flycatcher.....	15
13	1.5 Permits Required for Implementation .....	17
14	1.6 Related Laws, Authorizations, and Plans.....	18
15	1.7 Issues and Concerns from Public Comments.....	19
16	1.8 Topics Analyzed in Detail in this Environmental Assessment .....	19
17	1.8.1 Topics Dismissed from Detailed Analysis.....	19
18	CHAPTER 2 ALTERNATIVES, INCLUDING THE NO ACTION ALTERNATIVE.....	24
19	2.1 Development of Alternatives .....	24
20	2.1.1 Exemptions .....	26
21	2.2 No Action Alternative .....	27
22	2.3 Alternative A—Critical Habitat Designation with no Exclusions .....	28
23	2.4 Alternative B—Critical Habitat Designation minus Exclusions.....	31
24	2.5 Comparison of Potential Impacts of Southwestern Willow Flycatcher Proposed Critical	
25	Habitat Designation .....	31
26	CHAPTER 3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 40	
27	3.1 Introduction .....	40
28	3.1.1 Methodology .....	40
29	3.1.2 Economic Analysis .....	44
30	3.2 Land Use and Management.....	45

1	3.2.1	Existing Conditions.....	45
2	3.2.2	Environmental Consequences.....	52
3	3.3	Vegetation .....	58
4	3.3.1	Existing Conditions.....	58
5	3.3.2	Environmental Consequences.....	63
6	3.4	Wildlife and Fisheries (Including Threatened & Endangered Species).....	66
7	3.4.1	Existing Conditions.....	66
8	3.4.2	Environmental Consequences.....	71
9	3.5	Fire Management.....	75
10	3.5.1	Existing Conditions.....	75
11	3.5.2	Environmental Consequences.....	78
12	3.6	Water Resources.....	80
13	3.6.1	Existing Conditions.....	80
14	3.6.2	Environmental Consequences.....	88
15	3.7	Livestock Grazing .....	93
16	3.7.1	Existing Conditions.....	93
17	3.7.2	Environmental Consequences.....	97
18	3.8	Construction/Development—Roads, Bridges, Dams, Infrastructure, Residential.....	101
19	3.8.1	Existing Conditions.....	101
20	3.8.2	Environmental Consequences.....	103
21	3.9	Tribal Trust Resources .....	108
22	3.9.1	Existing Conditions.....	108
23	3.9.2	Environmental Consequences.....	110
24	3.10	Soil and Mineral Resources .....	116
25	3.10.1	Existing Conditions.....	116
26	3.10.2	Environmental Consequences.....	117
27	3.11	Recreation.....	122
28	3.11.1	Existing Conditions.....	122
29	3.11.2	Environmental Consequences.....	128
30	3.12	Socioeconomic Resources .....	134
31	3.12.1	Existing Conditions.....	135

1        3.12.2 Environmental Consequences ..... 137

2        3.13 Environmental Justice..... 143

3        3.13.1 Existing Conditions..... 143

4        3.13.2 Environmental Consequences ..... 143

5        3.14 Oil and Gas Development..... 144

6        3.14.1 Existing Conditions..... 144

7        3.14.2 Environmental Consequences..... 145

8        CHAPTER 4 ANALYSIS of SIGNIFICANCE ..... 154

9        CHAPTER 5 PREPARERS and CONTRIBUTORS ..... 157

10       CHAPTER 6 REFERENCES ..... 158

11

12

DRAFT

# 1 *Acronyms & Abbreviations*

---

2	ac	acre
3	ADWR	Arizona Department of Water Resources
4	AGFD	Arizona Game and Fish Department
5	AMA	Active Management Area
6	AMP	Allotment Management Plan
7	APHIS	Animal Plant Health Inspection Service
8	AUM	Animal Unit Month
9	AZGFD	Arizona Game and Fish Department
10	BLM	U.S. Bureau of Land Management
11	BMPs	Best Management Practices
12	BO	Biological Opinion
13	CADWR	California Department of Water Resources
14	CAP	Central Arizona Project
15	CDWR	Colorado Division of Water Resources
16	CEQ	Council on Environmental Quality
17	CFR	Code of Federal Regulations
18	cm	Centimeter
19	EPA	Environmental Protection Agency
20	ESA	Endangered Species Act
21	FEMA	Federal Emergency Management Agency
22	FHWA	Federal Highway Administration
23	FMP	Fire Management Plan
24	FONSI	Finding of No Significant Impact
25	FR	Federal Register
26	ft	foot
27	ha	hectare
28	HCP	Habitat Conservation Plan
29	in	Inch
30	km	kilometer
31	LCR	Lower Colorado River
32	LUP	Land Use Plan
33	m	meter
34	MRA	Multiple Resource Area
35	MSCP	Multispecies Conservation Program
36	NCA	National Conservation Area
37	NDOT	Nevada Department of Transportation
38	NDWR	Nevada State Division of Water Rights
39	NEPA	National Environmental Policy Act
40	NMDGF	New Mexico Department of Game and Fish
41	NMOSE	New Mexico Office of the State Engineer
42	NRHP	National Register of Historic Places
43	NWR	National Wildlife Refuge
44	OHV	Off-highway vehicle

1	PBFs	Physical or Biological Features
2	PCEs	Primary Constituent Elements
3	RMP	Resource Management Plan
4	RU	Recovery Unit
5	SHA	Safe Harbor Agreement
6	TES	Threatened, Endangered, or Sensitive Species
7	UDWR	Utah Division of Water Rights
8	USACE	U.S. Army Corps of Engineers
9	USAF	U.S. Air Force
10	USBR	U.S. Bureau of Reclamation
11	USDA	U.S. Department of Agriculture
12	USFS	U.S. Forest Service
13	USFWS	U.S. Fish & Wildlife Service
14	USDI	U.S. Department of Interior
15	USGS	United States Geological Survey
16	USIBC	U.S. International Boundary and Water Commission
17		

DRAFT

# 1 *Glossary*

---

- 2 **Animal Unit Month:** Standardized measure of animals used in agricultural purposes. An  
3 Animal Unit Month is the amount of forage required by an animal unit for one month.
- 4 **Bankfull Stage:** Level of stream discharge reached just before flows spill out onto the adjacent  
5 floodplain.
- 6 **Boreal Wetland:** Wetlands found in high elevation northern mountain ranges
- 7 **Carnivores:** a meat eating animal, such as a mountain lion.
- 8 **Channelization:** the ‘straightening out’ of a river or stream that limits its naturally winding  
9 course.
- 10 **Cienegas:** mid-elevation wetland communities often surrounded by arid environments. Similar  
11 to an oasis.
- 12 **Deciduous:** trees or communities of trees that lose their leaves seasonally, usually in the winter.
- 13 **Effluent:** discharge of water or waste into the water system.
- 14 **Emergent vegetation:** plants with roots under water but whose growth is above the water  
15 surface.
- 16 **Ephemeral streams:** streams that flow only in response to precipitation events.
- 17 **Extirpated:** locally extinct
- 18 **Groundwater:** water located beneath the earth’s surface and often found in specific rock layers.
- 19 **Habitat Conservation Plan (HCP):** a planning document required as part of an application for  
20 an incidental take permit from the USFWS. It describes the anticipated effects of the proposed  
21 taking; how those impacts will be minimized, or mitigated; and how the HCP is to be funded.  
22 HCPs can apply to both listed and nonlisted species, including those that are candidates or have  
23 been proposed for listing.
- 24 **Headcut:** the sudden change in elevation or knickpoint at the leading edge of a gully. Headcuts  
25 can range from less than an inch to several feet in height, depending on several factors.
- 26 **Industrial water:** water used for such purposes as fabricating, processing, washing, diluting,  
27 cooling, transporting a product, or for sanitation needs within the manufacturing facility.
- 28 **Intermittent streams:** streams that that flow seasonally or only in certain reaches (usually as a  
29 result of channel connection to groundwater).
- 30 **Irrigation water:** water that is applied by an irrigation system to sustain plant growth in all  
31 agricultural and horticultural practices. It also includes water that is applied for pre-irrigation,

- 1 frost protection, application of chemicals, weed control, field preparation, crop cooling,  
2 harvesting, dust suppression, leaching salts from the root zone, and water lost in conveyance.
- 3 **Livestock water:** water associated with livestock watering, feedlots, dairy operations, and other  
4 on-farm needs.
- 5 **Macrophyte:** an aquatic plant that grows in or near water and is either emergent, submergent, or  
6 floating.
- 7 **Metapopulation:** a set of local populations that interact via individuals moving between local  
8 populations.
- 9 **Mining water:** water used for the extraction of minerals that may be in the form of soils, such as  
10 coal, iron, sand, and gravel; liquids, such as crude petroleum; and gases such as natural gas.
- 11 **Montane:** in or from a mountainous region.
- 12 **Perennial stream:** stream that flows year-around.
- 13 **Primary Constituent Elements (PCE):** .The elements of physical and biological features that,  
14 when laid out in the appropriate quantity and spatial arrangement to provide for a species' life-  
15 history processes, are essential to the conservation of the species.
- 16 **Recharge:** water that filters into the earth and replenishes groundwater supplies.
- 17 **Riparian:** at the interface between land and a river or stream.
- 18 **Safe Harbor Agreement (SHA):** a voluntary agreement involving private or other non-Federal  
19 property owners whose actions contribute to the recovery of species listed as threatened or  
20 endangered under the Endangered Species Act (ESA). The agreement is between cooperating  
21 non-Federal property owners and the U.S. Fish and Wildlife Service. In exchange for actions  
22 that contribute to the recovery of listed species on non-Federal lands, participating property  
23 owners receive formal assurances from the Service that if they fulfill the conditions of the SHA,  
24 the Service will not require any additional or different management activities by the participants  
25 without their consent. In addition, at the end of the agreement period, participants may return the  
26 enrolled property to the baseline conditions that existed at the beginning of the SHA.
- 27 **Transitory Habitat:** habitat that is not permanent.
- 28 **Ungulates:** Hoofed mammals such as deer, cattle, and horses.
- 29

---

# 1 CHAPTER 1

## 2 PURPOSE OF AND NEED FOR ACTION

---

### 3 1.1 Introduction

4 The United States Department of the Interior (USDI), Fish and Wildlife Service (Service) is re-  
5 designating critical habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*;  
6 hereafter referred to as *E. traillii extimus* or flycatcher). The subspecies was listed on February  
7 27, 1995 as endangered under the Endangered Species Act of 1973 (ESA), as amended. Critical  
8 habitat designation is required by the ESA for listed species. Critical habitat was initially  
9 designated for the flycatcher on July 22, 1997 (62 FR 39129). The Service published a  
10 correction notice on August 20, 1997, on the lateral extent of critical habitat (62 FR 44228). As  
11 a result of a 1998 lawsuit from the New Mexico Cattlegrower's Association, on October 19,  
12 2005 (70 FR 60886), the Service published a revised final flycatcher critical habitat rule for  
13 portions of Arizona, California, New Mexico, Nevada, and Utah, totaling approximately 48,896  
14 ha (120,824 ac) or 1,186 km (737 mi) (70 FR 60886-61009). River segments were designated as  
15 critical habitat in 15 of the 32 Management Units described in the Recovery Plan (Service 2002).

16 The Service was sued by the Center for Biological Diversity over the 2005 critical habitat rule  
17 and, on July 13, 2010, agreed to redesignate critical habitat. The resulting settlement left the  
18 existing critical habitat designation from 2005 in effect, and required that the Service deliver a  
19 proposed rule for new revised critical habitat to the Federal Register by July 31, 2011, and a final  
20 rule by July 31, 2012.

### 21 1.2 Purpose and Need of the Action

22 Preservation of the habitat of an endangered species is a crucial element for the conservation of  
23 that species. A primary purpose of the ESA is to "provide a means whereby the ecosystems  
24 upon which endangered species and threatened species may be conserved" (section 2[b]). The  
25 purpose of critical habitat designation as specified in the ESA is to provide protection of habitat  
26 that is essential to the conservation of listed species.

27 The purpose of this Proposed Action is to re-designate critical habitat for the flycatcher, a  
28 subspecies listed as endangered under the ESA. Critical habitat designation identifies  
29 geographic areas that are essential for conservation of the flycatcher and that may also require  
30 special management. The designation also describes the physical and biological features that  
31 constitute the primary constituent elements (PCEs) of critical habitat

32 The need for the action is to fulfill the settlement reached in a legal action challenging the critical  
33 habitat designation that was finalized in 2005. In that settlement, signed in 2009, the Service  
34 agreed to deliver a proposed rule for new revised critical habitat to the Federal Register by July  
35 31, 2011, and a final rule by July 31, 2012.

1 **1.3 Proposed Action**

2 The Service is proposing as critical habitat stream segments within the geographical area  
3 occupied by the species at the time it was listed in accordance with the Act, on which are found  
4 those physical or biological features (1) essential to the conservation of the species and (2) which  
5 may require special management considerations or protection; and specific areas outside the  
6 geographical area occupied by the species at the time it was listed upon a determination that such  
7 areas are essential for the conservation of the species. Overall, these proposed stream segments  
8 represent flycatcher habitat known to be occupied at the time of listing, and essential areas where  
9 flycatcher territories have not been found but that have high value for recovery. The proposed  
10 areas support stable and growing breeding populations, provide migration stopover areas, protect  
11 against simultaneous catastrophic loss, maintain gene flow, prevent isolation and extirpation, and  
12 encourage colonizers to use new areas. All proposed stream segments provide habitat for a wide  
13 distribution of breeding flycatchers, including areas for population growth to meet numerical and  
14 habitat-related recovery goals. The proposed areas also support other important flycatcher needs  
15 such as foraging and shelter to reach the geographic distribution and habitat-related recovery  
16 goals established within the Recovery Plan’s 29 Management Units with recovery goals (Service  
17 2002).

18 The Proposed Action (Alternative A) would designate 3,402 stream kilometers (2,113 stream  
19 miles) as critical habitat. The lateral extent of proposed stream segments includes the riparian  
20 areas and streams that occur within the 100-year floodplain or flood-prone areas. The proposed  
21 critical habitat designation includes lands under Federal (32%), state (8%), private (33%), tribal  
22 (13%), and unclassified (14%) land ownership (76 FR 50561). The proposed critical habitat  
23 includes lands in Imperial, Inyo, Kern, Los Angeles, Mono, Orange, Riverside, Santa Barbara,  
24 San Bernardino, San Diego, and Ventura Counties in California; Clark, Lincoln, and Nye  
25 Counties in southern Nevada; Kane, San Juan, and Washington Counties in southern Utah;  
26 Alamosa, Conejos, Costilla, La Plata, and Rio Grande Counties in southern Colorado; Apache,  
27 Cochise, Gila, Graham, Greenlee, La Paz, Maricopa, Mohave, Pima, Pinal, Santa Cruz, Yavapai,  
28 and Yuma Counties in Arizona; and Catron, Cibola, Dona Ana, Grant, Hidalgo, McKinley,  
29 Mora, Rio Arriba, Santa Fe, San Juan, Sierra, Socorro, Taos, and Valencia Counties in New  
30 Mexico. The proposed areas are described and mapped fully in the proposed rule (76 FR 50542-  
31 50629), and incorporated herein by reference.

32 **1.4 Background**

33 **1.4.1 Critical Habitat**

34 **1.4.1.1 Provisions of the ESA**

35 Section 4(a)(3) of the ESA states that critical habitat shall be designated to the maximum extent  
36 prudent and determinable and that such designation may be revised periodically as appropriate.  
37 Section 4(b)(2) of the ESA requires that critical habitat designation be based on the best  
38 scientific information available and that economic, national security, and other relevant impacts  
39 be considered. In section 3(5)(A) of the ESA, critical habitat is defined as:

- 1 (i) the specific areas within the geographical area occupied by a species, at the time it is  
2 listed in accordance with the provisions of section 4 of the ESA, on which are found  
3 those physical or biological features (1) essential to the conservation of the species and  
4 (2) which may require special management considerations or protection; and
- 5 (ii) specific areas outside the geographical area occupied by a species at the time it is listed  
6 in accordance with the provisions of section 4 of the Act, upon the determination by the  
7 Secretary of the Interior that such areas are essential for the conservation of the species.  
8 Section 3(5)(C) also states that critical habitat “shall not include the entire geographic  
9 area which can be occupied by the threatened or endangered species,” except when the  
10 Secretary of the Interior determines that the areas are essential for the conservation of the  
11 species.

#### 12 **1.4.1.2 Section 4(b)(2) Exclusion Process**

13 Section 4(b)(2) of the ESA allows the Secretary of the Interior to exclude any area from the  
14 critical habitat designation after considering the economic, national security, or other relevant  
15 impacts of designating the area or if the Secretary determines that the benefit of excluding the  
16 area exceeds the benefit of designating it as critical habitat, unless the exclusion would result in  
17 the extinction of the species. After reviewing public comment on the critical habitat proposal,  
18 this draft EA, the draft economic analysis the Secretary could determine to exclude areas other  
19 than those addressed in this EA. This is as provided for in ESA section 4(b)(2) and in  
20 implementing regulations at 50 CFR Part 424.19.

#### 21 **1.4.1.3 Section 7 Consultation Process**

22 Section 7(a)(2) of the ESA requires Federal agencies to consult with the Service to “insure that  
23 any action authorized, funded, or carried out by such agency is not likely to jeopardize the  
24 continued existence of any endangered species or threatened species or result in the destruction  
25 or adverse modification of habitat of such species which is determined to be critical.” Each  
26 agency is required to use the best scientific and commercial data available. This consultation  
27 process is typically referred to as *section 7 consultation*. Section 7 of the ESA does not apply to  
28 state, local, or private land unless there is a Federal nexus (i.e., unless the action involves Federal  
29 funding, authorization, or permitting). Designation of critical habitat can help focus  
30 conservation efforts by identifying areas that are essential for the conservation of the species.  
31 Designation of critical habitat also serves to alert the public and land management agencies to  
32 the importance of an area for conservation of a listed species. As described above, critical  
33 habitat receives protection from destruction or adverse modification through required  
34 consultation under section 7 of the ESA. Aside from outcomes of consultation with the Service  
35 under section 7, the ESA does not automatically impose any restrictions on lands designated as  
36 critical habitat.

37 The section 7 consultation process begins with a determination of the effects on a listed species  
38 and designated critical habitat by a Federal action agency. If the Federal action agency  
39 determines that there would be no effect on listed species or designated critical habitat, then the  
40 section 7 process concludes at that point. If the Federal action agency determines that listed  
41 species or designated critical habitat may be affected, then consultation with the Service is

1 initiated, and the agency and the Service may enter into informal section 7 consultation.  
2 Informal consultation is an optional process for identifying affected species and critical habitat,  
3 determining potential effects, and exploring ways to modify the action to remove or reduce  
4 adverse effects on listed species or critical habitat (50 CFR Part 402.13). During this process the  
5 Service may make suggestions concerning project modifications, which then can be adopted by  
6 the action agency. If the action agency decides to further modify the project as suggested by the  
7 Service, the Service would then concur in writing or recommend formal consultation.

8 The informal section 7 consultation process concludes in one of two ways: (1) the Service  
9 concurs in writing that the proposed action is not likely to adversely affect listed species or  
10 critical habitat or (2) the Service determines that adverse effects are likely to occur. If the  
11 Service determines that adverse effects on species or critical habitat are likely to occur, formal  
12 consultation is initiated (50 CFR Part 402.14). Formal consultation concludes with a biological  
13 opinion issued by the Service on whether the proposed Federal action is likely to jeopardize the  
14 continued existence of a listed species or to destroy or adversely modify critical habitat (50 CFR  
15 Part 402.14[h]).

16 In making a determination on whether an action will result in jeopardy, the Service begins by  
17 looking at the current status of the species, or "baseline." Added to the baseline are the various  
18 effects – direct, indirect, interrelated, and interdependent – of the proposed Federal action. The  
19 Service also examines the cumulative effects of other non-Federal actions that may occur in the  
20 action area, including state, tribal, local, or private activities that are reasonably certain to occur  
21 in the project area. The Service’s analysis is then measured against the definition of jeopardy.  
22 Under the ESA, jeopardy occurs when an action is reasonably expected, directly or indirectly, to  
23 diminish a species’ numbers, reproduction, or distribution so that the likelihood of survival and  
24 recovery in the wild is appreciably reduced.

25 Separate analyses are made under both the jeopardy and the adverse modification standards.  
26 While the jeopardy analysis evaluates potential impacts on the species as described above, the  
27 adverse modifications analysis specifically evaluates potential impacts on designated critical  
28 habitat.

29 The Ninth Circuit Court recently determined that there is an additional difference between the  
30 two standards. In *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, 378  
31 F.3d 1059 (9th Cir. 2004), the court held that while the jeopardy standard concerns the survival  
32 of a species or its risk of extinction, the adverse modification standard concerns the value of  
33 critical habitat for the recovery, or eventual delisting, of a species. As pointed out in the Ninth  
34 Circuit decision, survival of a species and recovery (or conservation) of a species are distinct  
35 concepts in the ESA. Implementation of the two standards, therefore, involves separate and  
36 distinct analyses based on these concepts. In light of the Gifford Pinchot decision, the Service no  
37 longer relies on the regulatory definition of “destruction of adverse modification” of critical  
38 habitat at 50 CFR 402.02. Instead, the Service relies on the statutory provisions of the ESA to  
39 complete the analysis with respect to critical habitat. The potential for destruction or adverse  
40 modification of critical habitat by a Federal action is assessed by determining the effects of the  
41 proposed Federal action on PBFs and PCEs of habitat qualities that are essential to the  
42 conservation of the species. These anticipated effects are then analyzed to determine how they  
43 will influence the function and conservation role of the affected critical habitat. This analysis  
44 provides the basis for determining the significance of anticipated effects of the proposed Federal

1 action on critical habitat. The threshold for destruction or adverse modification is evaluated in  
2 the context of whether the critical habitat would remain functional to serve the intended  
3 conservation role for the species.

4 An activity adversely affecting critical habitat must be of a severity or intensity that the physical  
5 and biological features of critical habitat are compromised to the extent that the critical habitat  
6 can no longer meet its intended conservation function before a destruction or adverse  
7 modification determination is reached.

8  
9 A “non-jeopardy” or “no adverse modification” opinion concludes consultation, and the  
10 proposed action may proceed under the ESA. The Service may prepare an incidental take  
11 statement with reasonable and prudent measures to minimize take and associated, mandatory  
12 terms and conditions that describe the methods for accomplishing the reasonable and prudent  
13 measures alternatives. Discretionary conservation recommendations may be included in a  
14 biological opinion based on the effects on the species. Conservation recommendations, whether  
15 they relate to the jeopardy or adverse modification standard, are discretionary actions  
16 recommended by the Service. These recommendations may address minimizing adverse effects  
17 on listed species or critical habitat, identifying studies or monitoring, or suggesting how action  
18 agencies can assist species under their own authorities and section 7(a)(1) of the ESA.

19  
20 There are no ESA section 9 prohibitions for critical habitat. Therefore, a Biological Opinion that  
21 concludes “no destruction or adverse modification of critical habitat” may contain conservation  
22 recommendations but would not include an incidental take statement (since only species can be  
23 “taken”), reasonable and prudent measures, or other terms and conditions for designated critical  
24 habitat. In a Biological Opinion that results in a jeopardy or adverse modification conclusion,  
25 the Service develops mandatory reasonable and prudent alternatives to the proposed action.  
26 Reasonable and prudent alternatives are actions that the Federal agency can take to avoid  
27 jeopardizing the continued existence of the species or adversely modifying the critical habitat.  
28 Reasonable and prudent alternatives may vary from minimal project changes to extensive  
29 redesign or relocation of the project, depending on the situations involved. Reasonable and  
30 prudent alternatives must be consistent with the intended purpose of the proposed action, and  
31 they also must be consistent with the scope of the Federal agency’s legal authority. Furthermore,  
32 the reasonable and prudent alternatives must be economically and technically feasible.

### 33 **1.4.2 Southwestern willow flycatcher**

34 The following briefly summarizes key information about the Southwestern willow flycatcher  
35 (*Empidonax trailii extimus*) (Figure 1.1) and the physical and biological features that are  
36 essential to the conservation of the species. For more detail, and for a description of the species  
37 and its life history, habitat, and distribution, refer to the final listing rule (60 FR 10694) and the  
38 proposed critical habitat rule (76 FR 50542-50629), which are herein incorporated by reference.



1  
2 **Figure 1.1. Southwestern willow flycatcher**

3 **1.4.2.1 Physical and Biological Features for the Southwestern willow**  
4 **flycatcher**

5 Under the Act and its implementing regulations (50 CFR §424.12), the Service is required to  
6 identify the physical and biological features essential to the conservation of the southwestern  
7 willow flycatcher in areas occupied at the time of listing, focusing on the features' primary  
8 constituent elements (PCEs). In general, the physical or biological features of critical habitat for  
9 nesting flycatchers are found in the riparian areas within the 100-year floodplain or flood-prone  
10 area. Flycatcher habitat is ephemeral in its presence, and its distribution is dynamic in nature  
11 because riparian vegetation is prone to periodic disturbance (such as flooding) (Service 2002).  
12 The PBFs are described in detail in the proposed rule (76 FR 50546). These PBFs include, but  
13 are not limited to:

- 14 1. Space for individual and population growth and for normal behavior;  
15 2. Food, water, air, light, minerals, or other nutritional or physiological requirements;  
16 3. Cover or shelter;  
17 4. Sites for breeding, reproduction, or rearing (or development) of offspring; and  
18 5. Habitats that are protected from disturbance or are representative of the historical,  
19 geographical, and ecological distributions of a species.

20 **1.4.2.2 Primary Constituent Elements for Southwestern willow flycatcher**  
21 **Critical Habitat**

22 The Service considers primary constituent elements to be the elements of physical and biological  
23 features that, when laid out in the appropriate quantity and spatial arrangement to provide for a  
24 species' life-history processes, are essential to the conservation of the species.

25 The Service has determined that the PCEs essential to the conservation of the southwestern  
26 willow flycatcher are:

- 27 1. Riparian vegetation in a dynamic river or lakeside, natural or manmade successional  
28 environment that is comprised of trees and shrubs (that can include Gooddings willow,  
29 coyote willow, Geyers willow, arroyo willow, red willow, yewleaf willow, pacific  
30 willow, boxelder, tamarisk, Russian olive, buttonbush, cottonwood, stinging nettle, alder,

1 velvet ash, poison hemlock, blackberry, seep willow, oak, rose, sycamore, false indigo,  
2 Pacific poison ivy, grape, Virginia creeper, Siberian elm, and walnut) and some  
3 combination of:

- 4 a) Dense riparian vegetation with thickets of trees and shrubs that can range in height  
5 from about 2 m to 30 m (about 6 to 98 ft). Lower-stature thickets (2 to 4 m or 6 to  
6 13 ft tall) are found at higher elevation riparian forests and tall-stature thickets are  
7 found at middle- and lower-elevation riparian forests; and/or  
8 b) Areas of dense riparian foliage at least from the ground level up to approximately 4  
9 m (13 ft) above ground or dense foliage only at the shrub or tree level as a low,  
10 dense canopy; and/or  
11 c) Sites for nesting that contain a dense (about 50 percent to 100 percent) tree or shrub  
12 (or both) canopy (the amount of cover provided by tree and shrub branches  
13 measured from the ground); and/or  
14 d) Dense patches of riparian forests that are interspersed with small openings of open  
15 water or marsh or areas with shorter and sparser vegetation that creates a variety of  
16 habitat that is not uniformly dense. Patch size may be as small as 0.1 ha (0.25 ac)  
17 or as large as 70 ha (175 ac).
- 18 2. A variety of insect prey populations found within or adjacent to riparian floodplains or  
19 moist environments, which can include: flying ants, wasps, and bees (*Hymenoptera*);  
20 dragonflies (*Odonata*); flies (*Diptera*); true bugs (*Hemiptera*); beetles (*Coleoptera*);  
21 butterflies, moths, and caterpillars (*Lepidoptera*); and spittlebugs (*Homoptera*).

22 All river segments proposed as flycatcher critical habitat are either: (1) within the known range  
23 of the subspecies, representing areas known to be occupied at the time of listing; or (2) essential  
24 areas for the conservation of the species not known to be occupied by the flycatcher at the time  
25 of listing, but which now may or may not be known to have flycatchers present. These areas  
26 contain at least one of the primary constituent elements essential for the conservation of the  
27 subspecies.

28 For this wide-ranging flycatcher, it is difficult to precisely determine known occupied areas due  
29 to the following considerations: (1) the flycatcher's neotropical migratory habits of occupying  
30 stopover areas along streams upstream of, downstream of, and between breeding sites; and (2)  
31 the season-to-season variation in habitat quality and subsequent lack of specific nest-site fidelity.  
32 As a result, for the purpose of this proposed critical habitat designation, the Service believes it is  
33 most conservative and reasonable to conclude that any stream segment along a stream where  
34 flycatchers were found nesting from 1991 to 1994 also be considered occupied at the time of  
35 listing. Those proposed stream segments considered occupied at the time of listing and those  
36 considered not occupied at the time of listing are organized by Recovery and Management Units  
37 and listed in the proposed rule (76 FR 50560).

## 38 **1.5 Permits Required for Implementation**

39 No permits are required for critical habitat designation. Designation of critical habitat occurs  
40 through a rulemaking process under the Administrative Procedures Act (5 U.S.C. §551–59, 701–  
41 06, 1305, 3105, 3344, 5372, 7521) and the ESA.

## 1.6 Related Laws, Authorizations, and Plans

As mentioned, section 7 of the ESA requires Federal agencies to consult with the Service when there are potential effects to endangered or threatened species, independent of critical habitat. The ESA also prohibits any person from “taking” the species without a permit from the Service. Other Federal laws address various aspects of conservations of fish and wildlife and their habitat, which apply to the flycatcher:

1. Migratory Bird Treaty Act. The Migratory Bird Treaty Act (16 U.S.C. 701-711) establishes provisions regulating take, possession, transport, and import of migratory birds, including nests and eggs.
2. Federal Land Policy and Management Act. The Federal Land Policy and Management Act of 1976 requires that “. . . the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that . . . will preserve and protect certain public lands in their natural condition; (and ) that will provide food and habitat for fish and wildlife . . .”.
3. National Forest Management Act. The National Forest Management Act of 1976 directs that the National Forest System “...where appropriate and to the extent practicable, will preserve and enhance the diversity of plant and animal communities.” Additionally, sec. 219.12(g) requires the maintenance of viable populations of native vertebrates in National Forests.
4. Clean Water Act (CWA). The CWA implements a variety of programs, including: Federal effluent limitations and state water quality standards, permits for the discharge of pollutants and dredged and fill materials into navigable waters, and enforcement mechanisms. Section 404 of the CWA is the principal Federal program that regulates activities affecting the integrity of wetlands. Section 404 prohibits the discharge of dredged or fill material in jurisdictional waters of the United States, unless permitted by COE under § 404 (a) (individual permits), 404 (e) (general permits), or unless the discharge is exempt from regulation as designated in § 404 (f).
5. The Lacey Act (16 USC §3371 et seq.), as amended in 1982. The Act prohibits the import, export, sale, receipt, acquisition, purchase, and engagement in interstate or foreign commerce of any species taken, possessed, or sold in violation of any law, treaty, or regulation of the United States, and Tribal law, or any law or regulation of any state.
6. Comprehensive Conservation Plans (CCP). The Service prepares a plan for each Wildlife Refuge which contains proposed critical habitat. These plans define the conservation goals and strategies and resulting land uses and activities within each National Wildlife Refuge to best achieve those goals.

In addition, state wildlife laws within those states containing designated critical habitat provide varying degrees of protection for the flycatcher. These state protections are described in more detail in the Service’s Incremental Effects Memo, which is included as an appendix to the Economic Analysis.

## 1.7 Issues and Concerns from Public Comments

There have been several periods of public comment throughout the history of critical habitat designation for the flycatcher. Most recently before this proposed revision, there were two public comment periods for the 2005 designation currently in effect, including a public comment period on the Environmental Assessment prepared in 2005 for that designation. The newly proposed designation was open for public comment from August 15, 2011 through October 14, 2011. The Final Environmental Assessment will address the issues and concerns submitted on the proposed rule as well as this draft of the Environmental Assessment.

## 1.8 Topics Analyzed in Detail in this Environmental Assessment

Based on comments received in preparing the previous designation in 2005, internal scoping within the Service, a review of the previous consultation history of the species, and a review of public comments received on the proposed rule, the Service analyzed the potential impacts of critical habitat designation on the following resources:

- Land Use and Management;
- Fish, Wildlife, and Plants (including Threatened & Endangered species);
- Fire Management;
- Water Resources (including water management projects and groundwater pumping);
- Livestock Grazing;
- Construction/Development;
- Tribal Trust Resources;
- Soils & Mineral Resources;
- Recreation;
- Socioeconomics; and
- Environmental Justice.

### 1.8.1 Topics Dismissed from Detailed Analysis

Federal regulations (40 CFR §1500 et seq.) require that certain topics be addressed as part of a NEPA analysis. The Service reviewed the mandatory topics listed below and determined that the action alternatives have no or negligible potential to affect them. These topics have been dismissed from detailed analysis in this document because, as a regulatory action that does not itself mandate or authorize any specific agency actions, the designation of critical habitat for the southwestern willow flycatcher is likely to have no or, at most, negligible effect on them.

- *Energy requirements and conservation potential (1502.16)*. Additional section 7 consultations resulting from critical habitat designation of the flycatcher would not require any increase in energy consumption in the form of fuel for vehicles or from other conservation actions.
- *Natural or depletable resource requirements and conservation potential (1502.16)*. No natural or depletable resources (e.g., oil, gas, coal, or other minerals) would be lost as a result of designating critical habitat for the flycatcher. Two previous consultations with BLM and USFS on oil and gas development activities (both before the 2005 designation) have resulted in determinations of “not likely to adversely affect” the flycatcher. Oil and

1 gas developers consult regularly with the Service throughout the permitting and design  
2 process for a new well to implement project modifications that will avoid impacts in  
3 these areas. As such, despite the high level of activity in the surrounding area, there are  
4 relatively few existing wells within critical habitat, and few are expected to be developed  
5 over the next 20 years.

- 6 • *Urban quality and design of the built environment (1502.16)*. The proposed critical  
7 habitat segments are not located in urban or other built environments and would not  
8 affect the quality of such environments.
- 9 • *Important scientific, archeological, and other cultural resources, including historic  
10 properties listed in or eligible for the National Register of Historic Places (NRHP)  
11 (1508.27)*. The proposed designation would not result in any ground-disturbing activities  
12 that have the potential to affect archeological or other cultural resources. There are a  
13 total of 15 sites listed on the NRHP that lie within proposed critical habitat. Of these,  
14 seven are within existing critical habitat areas, meaning those previously designated in  
15 2005. These remaining listed sites are in areas newly proposed as critical habitat in 2011:
  - 16 1. Percha Diversion Dam (Lower Rio Grande Management Unit)--Percha Diversion  
17 Dam is an integral feature of the widespread Rio Grande Project, a Bureau of  
18 Reclamation irrigation project authorized in 1905. Located two miles  
19 downstream from Caballo Dam on the Rio Grande River, Percha Dam is a  
20 concrete ogee weir structure with embankment wings, constructed between 1916  
21 and 1918. The dam diverts water into the Rincon Valley Main Canal, which  
22 provides water to over 16,000 acres of land in the Rincon Valley. Percha Dam is  
23 individually listed in the National Register and is also included as a contributing  
24 feature of the Elephant Butte Irrigation District National Register District. The  
25 proposed designation would not result in any ground-disturbing activities that  
26 have the potential to adversely affect this structure.
  - 27 2. Halona (Zuni) Pueblo (Little Colorado Management Unit)—This pueblo lies in  
28 the Zuni Indian Reservation, in McKinley County, NM. It has archeological,  
29 ethnic, and religious significance. The area is being considered for exclusion  
30 under Alternative B. The proposed designation would not result in any ground-  
31 disturbing activities that have the potential to adversely affect this structure.
  - 32 3. Old Mission Dam (San Diego Management Unit)--Old Mission Dam was one of  
33 the first major irrigation engineering projects on the Pacific coast of the United  
34 States. It impounded water from the San Diego River, which was released as  
35 needed for agricultural and domestic purposes. The dam was probably started in  
36 1803, and by 1817, it had assumed its final form (NPS 2011a). The area is being  
37 considered for exclusion under Alternative B. The proposed designation would  
38 not result in any ground-disturbing activities that have the potential to adversely  
39 affect this structure.
  - 40 4. Old Trails Bridge (Hoover-Parker Management Unit)—This structure is  
41 significant as an example of steel arch construction. A single 600-ft span supports  
42 the 800-ft bridge that crosses the Colorado River halfway between Yuma AZ and  
43 the Utah border. The proposed designation would not result in any ground-  
44 disturbing activities that have the potential to adversely affect this structure.
  - 45 5. Costilla Crossing Bridge (San Luis Valley Management Unit)—This is a two-  
46 span Thacher through wrought iron truss bridge over the Rio Grande in Conejos,

1 CO. It was built in 1892. It is on land covered by the San Luis Valley HCP,  
2 which is proposed for exclusion under Alternative B. The proposed designation  
3 would not result in any ground-disturbing activities that have the potential to  
4 adversely affect this structure.

- 5 6. Pike’s Stockade (San Luis Valley Management Unit)—This is a stockade where  
6 Zebulon Pike raised the American flag over Spanish soil after leading the second  
7 official U.S. expedition into the Louisiana Territory in 1807. It is on land  
8 covered by the San Luis Valley HCP, which is proposed for exclusion under  
9 Alternative B. The proposed designation would not result in any ground-  
10 disturbing activities that have the potential to adversely affect this structure.
- 11 7. Wheeler Bridge (San Luis Valley Management Unit)—This is a pony truss bridge  
12 spanning the Rio Grande Canal near Del Norte, CO, built in 1924. It is on land  
13 covered by the San Luis Valley HCP, which is proposed for exclusion under  
14 Alternative B. The proposed designation would not result in any ground-  
15 disturbing activities that have the potential to adversely affect this structure.
- 16 8. Sutherland Bridge (San Luis Valley Management Unit)-- This is a pony truss  
17 bridge spanning the Rio Grande Canal near Del Norte, CO, built in 1924. It is on  
18 land covered by the San Luis Valley HCP, which is proposed for exclusion under  
19 Alternative B. The proposed designation would not result in any ground-  
20 disturbing activities that have the potential to adversely affect this structure.

21 There have been no consultations on listed historic structures since the 2005 designation,  
22 and none would be anticipated, based on the likelihood that no ground-disturbing  
23 activities would be conducted as a result of the proposed action that would cause adverse  
24 impacts to these structures. For this reason, the topic of impacts to historic cultural  
25 resources is not analyzed further in this document.

- 26 • *Ecologically critical areas, Wild and Scenic Rivers, or other unique natural resources*  
27 *(1508.27)*. Five designated Wild and Scenic River segments are part of the proposed  
28 critical habitat designation. These are:
  - 29 1. Piru Creek River (Santa Clara Management Unit CA): Los Padres National  
30 Forest;
  - 31 2. Amargosa River—Willow Creek (Amargosa Management Unit CA): BLM CA  
32 land;
  - 33 3. Amargosa River—Amargosa River (Amargosa Management Unit CA): BLM CA  
34 land;
  - 35 4. Bautista Creek (Santa Ana Management Unit CA): San Bernardino National  
36 Forest; and
  - 37 5. Verde River (Verde Management Unit AZ): Coconino, Prescott, and Tonto  
38 National Forests.

39 In addition, a portion of the Paria River in Utah is under consideration for designation as  
40 a Wild and Scenic River, but this portion is approximately 1.8km (3 mi.) south of the  
41 segment proposed as critical habitat, with no overlap.

42 Activities proposed by the Federal land managers in these areas would be expected to  
43 maintain or improve the health of these riparian ecosystems, and thus they would be  
44 anticipated to help recover or sustain the PCEs along these segments. Therefore no

1 consultations would be expected, and any adverse impacts to critical habitat would be  
2 negligible at most.

- 3 • *Public health and safety (1508.27)*. The only foreseeable activities with potential risks to  
4 public health and safety are those related to fire management, particularly in the Wildlife  
5 Urban Interface (WUI) areas and areas where vegetation fuel loading has created  
6 conditions for catastrophic fire. These issues, along with fire management and fire-  
7 related health and safety risk reduction, are discussed in Section 3.5, Fire Management.
- 8 • *Climate Change*. The proposed critical habitat rule includes a discussion of how climate  
9 change could impact flycatcher habitat (76 FR 50547-50548). It concludes, “In  
10 summary, we [the Service] expect that climate change will result in a warmer, drier  
11 climate, and reduced surface water across the flycatcher’s range....As a result, we expect  
12 long-term climate trends associated with a drier climate to have an overall negative effect  
13 on the available rangewide habitat for flycatchers.”

14 The Council on Environmental Quality (CEQ) released draft guidance in 2010 that  
15 explains climate change impact analysis from proposed actions that create greenhouse  
16 gases (CEQ 2010). A threshold of 25,000 metric tons of carbon dioxide equivalent  
17 emissions from an action was proposed as the trigger to further quantitative analysis. A  
18 designation of critical habitat does not create or develop projects that produce emissions,  
19 and therefore would not be subject to quantitative analysis.

20 The US Department of the Interior (USDOI) released Secretarial Order 3289 in 2010  
21 which details two additional departmental actions to mitigate climate change: (1) DOI  
22 Carbon Storage and (2) DOI Carbon Footprint (DOI 2010). The DOI Carbon Storage  
23 project was created to develop methodologies for geologic and biologic carbon  
24 sequestration. The US Geological Survey (USGS) is the lead agency for research while  
25 additional agencies within the department are cooperating agencies. The DOI Carbon  
26 Footprint project has the goal of developing a unified greenhouse gas emission reduction  
27 program to mitigate climate change activities. DOI has created Climate Change  
28 Response Centers to conduct impact analysis and data collection for the program.  
29 Specific Landscape Conservation Cooperatives would work with the Centers by  
30 supplying the on-the-ground data derived from each specific locale.

31 In addition to these two projects, Secretarial Order 3289 also states that avoidance of  
32 climate change and mitigation of its effects should also be addressed by prioritizing the  
33 development of renewable energy (DOI 2010). BLM has separately published  
34 programmatic EISs for solar and wind energy development on its managed lands (BLM  
35 2005; BLM 2011a). While currently there are no plans for solar or wind energy  
36 development that overlap with proposed critical habitat units, future projects could spur  
37 section 7 consultations if they had the potential to adversely affect critical habitat.

38 The Forest Service issued a document titled “Climate Change Considerations in Project  
39 Level NEPA Analysis” in 2009, to guide the analysis of climate change for future  
40 projects (USFS 2009). It discusses the two types of effects of climate change: (1) the  
41 effect of the proposed action on climate change. As stated above, the designation of  
42 critical habitat units would not impact climate change as it would not initiate or  
43 implement projects that produce greenhouse gas emissions; (2) the effect of climate

1 change on the proposed action. Expected shifts in rainfall patterns are an example of  
2 such an effect, and would have the potential to affect flycatcher critical habitat units. The  
3 Forest Service would conduct its own NEPA climate change analysis of its proposed  
4 actions, as appropriate.

5 Therefore, while the Service expects long-term climate trends associated with a drier  
6 climate to have an overall negative effect on the available rangewide habitat for  
7 flycatchers through alteration of rainfall cycles and increased frequency and duration of  
8 drought, the designation of critical habitat itself will neither create impacts to climate  
9 change (since it does not initiate or implement projects that create emissions) nor  
10 contribute to the expected adverse impacts of climate change on critical habitat (since it  
11 would not contribute to the changes in temperature or hydrologic cycles). To the extent  
12 that designation of habitat contributes to the maintenance of PCEs, it may produce  
13 beneficial impacts by improving the resilience of PCEs to the adverse impacts of climate  
14 change.

15

DRAFT

---

## 1 CHAPTER 2

### 2 ALTERNATIVES, INCLUDING THE NO ACTION ALTERNATIVE

---

3 This section describes the alternatives for critical habitat designation for the southwestern willow  
4 flycatcher. For the purposes of this EA, alternatives provide a clear basis for choice by the  
5 decision-maker and the public for critical habitat designation, as described in Chapter 1, which  
6 can be summarized as determining which areas meet the definition of critical habitat for the  
7 southwestern willow flycatcher. In addition, the analysis of alternatives can provide information  
8 in an evaluation if any of the proposed critical habitat units should be excluded from the final  
9 designation.

#### 10 2.1 Development of Alternatives

11 In developing the action alternatives, the Service based decisions on the best scientific and  
12 commercial data available in determining areas within the geographical area occupied at the time  
13 of listing that contain the features essential to the conservation of the southwestern willow  
14 flycatcher, and areas outside of the geographical area occupied at the time of listing that are  
15 essential for the conservation of the species.

16 The initial steps and approach in proposing areas for flycatcher critical habitat were to identify  
17 areas: (1) known to be within the specific geographic area occupied by the flycatcher at the time  
18 of listing (from surveys occurring from 1991 to 1994) that contain the essential physical or  
19 biological features which may require special management; and (2) that are essential to the  
20 conservation of the flycatcher based on the Recovery Plan goals.

21 Following the evaluation of the two factors above, the Service incorporated the conservation  
22 strategies described in the Recovery Plan. These strategies describe the importance of flycatcher  
23 habitat to support stable and growing breeding populations, to provide migration stopover areas,  
24 to protect against simultaneous catastrophic loss, to maintain gene flow, to prevent isolation and  
25 extirpation, and to provide colonizers to use new areas. Also, the Recovery Plan describes the  
26 importance of habitat that supports large breeding populations of flycatchers and small  
27 populations that, when in proximity, equal a large population. To achieve these Recovery Plan  
28 goals, the Recovery Plan describes a recovery strategy of distributing flycatcher habitat that could  
29 hold a specific minimum number of breeding territories across 29 different Management Units in  
30 portions of California, Nevada, Utah, Colorado, Arizona, and New Mexico.

31 The Service therefore created criteria and a methodology to identify areas surrounding large  
32 populations and small populations, in proximity, that equalled a large population. A 35-km (22-  
33 mi) distance was used as a radius to identify areas around large flycatcher populations (those  
34 with at least 10 territories) and small populations in high connectivity that together equal a large  
35 population.

36 Critical habitat was then generated in “river segments” to account for the dynamic aspects of  
37 flycatcher riparian habitat, the changing locations of flycatcher habitat due to these dynamic  
38 conditions, population growth, and the variety of other life-history needs such as nest placement,

1 foraging, dispersing, cover, shelter, and migration habitat. Once these broad areas were  
2 established, stream segments with flycatcher habitat were identified to support the numerical  
3 territory and habitat-related recovery goals for the 29 Management Units described in the  
4 Recovery Plan. After this was done, there were areas where recovery goals needed to occur that  
5 were not identified by our methodology of using known large populations as our guide. In these  
6 instances, the Service relied heavily upon the Recovery Plan guidance (recovery strategy, stream  
7 identification, and habitat descriptions), flycatcher detections, and local expertise in habitat  
8 quality to identify river segments considered essential for the conservation of the species.

9 Changes from the 2005 designation to the 2011 proposed revision are summarized below. For  
10 more detail on the differences from 2005 and other elements of the methodology, refer to the  
11 proposed rule (76 FR 50542-50629).

- 12 1. In this proposal, the Service defines the critical habitat that is not occupied at the time of  
13 listing, but that is essential for the conservation of the species, as areas needed to support  
14 the distribution and abundance of territories and habitat-related recovery goals described  
15 in the Recovery Plan. In contrast, in its proposal for 2005 (the “2005 proposal” was  
16 actually published in 2004, finalized in 2005), the Service determined essential habitat  
17 was based on only those areas that supported large flycatcher populations (69 FR 60715–  
18 60716).
- 19 2. For this 2011 proposal, stream segments are proposed in all 29 Management Units where  
20 there are flycatcher territory and habitat-related Recovery Goals. In contrast, in 2004, the  
21 Service proposed segments in 21 Management Units. Many segments that were proposed  
22 in 2004, but excluded from the final designation, have been proposed in the 2011  
23 revision. As mentioned above, in this proposed rule, 35 km (22 mi) has been used as the  
24 radius to guide critical habitat areas surrounding large populations (equal or greater than  
25 10 territories) and proximity of sites with smaller numbers that could equal a large  
26 population. This is the average distance between breeding sites that USGS described (30  
27 to 40 km, 18 to 25 mi) as being highly connected. In the 2005 proposal, 30 km (18 mi)  
28 was used as the radius. Because USGS did not describe a value within this range that is  
29 more or less beneficial for the flycatcher, the Service believes using the average  
30 accurately reflects the range of distance between highly connected breeding sites.
- 31 3. To assist in generating critical habitat in Management Units where there are recovery  
32 goals but there are no known large flycatcher population or collections of small  
33 populations in proximity that equalled a large population, the Service used Recovery Plan  
34 guidance in this proposed rule to propose stream segments with substantial recovery  
35 value (Service 2002), known breeding sites (Durst et al. 2008; Sogge and Durst 2008),  
36 and other literature, reports, and local knowledge about flycatcher population dynamics  
37 and habitat. In contrast, in 2004, there was no attempt to propose critical habitat in these  
38 areas because the definition of essential habitat was focused on the presence of large  
39 populations (69 FR 60715–60716).

40 Based on the differences in approach summarized above and explained more fully in the  
41 proposed rule, additional stream segments are now being proposed as flycatcher critical habitat.  
42 These are specifically identified in section 2.3.

43 Overall, there are 12 river segments proposed as critical habitat where flycatcher territories have  
44 not been detected since surveys began in 1991. These river segments occur across seven

1 different Management Units (totaling about 86 river miles) (76 FR 50560-50561). These streams  
 2 are listed below in Table 2.1. While six of the seven management units contain flycatcher  
 3 territories in their other river segments, the Paria River segment occurs in the only management  
 4 unit in which no territories have been confirmed since 1991-- Powell Management Unit.

5 **Table 2.1 Designated Critical Habitat in Segments where Flycatcher**  
 6 **Territories Have Not Been Detected**

<i>State</i>	<i>River Segment with unoccupied territories</i>
California	<ul style="list-style-type: none"> <li>• Mono, Temescal, Deep, Castaic and Willow Creeks</li> <li>• Big and Little Tujunga Canyons</li> <li>• Ventura River</li> <li>• West Fork Mohave River</li> </ul>
Arizona	<ul style="list-style-type: none"> <li>• West Fork Little Colorado River</li> <li>• Santa Cruz River</li> </ul>
Utah	<ul style="list-style-type: none"> <li>• Paria River</li> </ul>

7 Under section 4(b)(2) of the Act, the Service considered relevant impacts--including economic  
 8 impacts, impacts on national security, and other factors--in weighing the costs and benefits of  
 9 excluding areas from critical habitat designation. The factors considered by the Service include  
 10 whether the landowners have developed any HCPs or other management plans for the area, or  
 11 whether there are conservation partnerships that would be encouraged by designation of, or  
 12 exclusion from, critical habitat. In addition, the Service looked at tribal management in  
 13 recognition of their capability to appropriately manage their own resources, and considered the  
 14 government-to-government relationship of the United States with tribal entities. The Service  
 15 also considered potential social impacts that might occur because of the designation.

16 For this EA, the Service constructed an alternative in which all potential exclusions are  
 17 combined within a single action alternative—Alternative B. In developing its final designation,  
 18 the Service will continue to evaluate individual exclusions according to the criteria mentioned  
 19 above.

20 **2.1.1 Exemptions**

21 The National Defense Authorization Act for Fiscal Year 2004 (Pub. L.108-136) amended the  
 22 Endangered Species Act to limit areas eligible for designation as critical habitat. Specifically,  
 23 section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall  
 24 not designate as critical habitat any lands or other geographical areas owned or controlled by the  
 25 Department of Defense, or designated for its use, that are subject to an integrated natural  
 26 resources management plan [INRMP] prepared under section 101 of the Sikes Act (16 U.S.C.  
 27 670a), if the Secretary determines in writing that such plan provides a benefit to the species for  
 28 which critical habitat is proposed for designation.”

29 The Service analyzed INRMPs developed by military installations located within the range of the  
 30 proposed critical habitat designation for the flycatcher to determine if they are exempt under

1 section 4(a)(3) of the Act. The following areas in Southern California (Table 2.2) are  
 2 Department of Defense lands with completed, Service-approved INRMPs within the proposed  
 3 critical habitat designation, and are therefore exempted from any proposed designation.

4 **Table 2.2 Areas exempted from critical habitat under section 4(b)(3)**  
 5 **of the Act, by Management Unit**

<i>Management Unit</i>	<i>Specific Area</i>	<i>Areas Meeting the Definition of Critical Habitat in km (mi)</i>	<i>Areas Exempted in km (mi)</i>
Santa Ynez	Vandenberg AFB INRMP	14.7 km (9.1 mi)	14.7 km (9.1 mi)
San Diego	Camp Pendleton INRMP	76.1 km (47.3 mi)	76.1 km (47.3 mi)
San Diego	Camp Pendleton INRMP/Fallbrook Naval Base INRMP shared boundary	7.5 km (4.7 mi)	7.5 km (4.7 mi)
San Diego	Fallbrook Naval Base INRMP	3.2 km (2.0 mi)	3.2 km (2.0 mi)

6 Further discussion of the INRMPs for each facility can be found in the proposed rule designating  
 7 critical habitat (76 FR 50542-50629).

8 **2.2 No Action Alternative**

9 The No Action Alternative is defined here as no change in the existing designation of flycatcher  
 10 critical habitat for the southwestern willow flycatcher; that is, the 2005 critical habitat  
 11 designation would remain in effect. An analysis of a No Action Alternative is required by NEPA  
 12 and provides a baseline for analyzing effects of the action alternatives. Analysis of this  
 13 alternative describes the existing environment and consequences that are anticipated as a result  
 14 of continuing with the final designation put into effect in 2005 (70 FR 60886). This alternative  
 15 would not meet the terms of the settlement agreement of July 23, 2010, according to which the  
 16 Service agreed to redesignate critical habitat. It is included for the purpose of comparison of  
 17 potential impacts of alternative designations.

**2.3 Alternative A—Critical Habitat Designation with no Exclusions**

Alternative A includes stream segments in 29 Management Units found in six Recovery Units as critical habitat for the flycatcher. These stream segments occur in California, Nevada, Utah, Colorado, Arizona and New Mexico and include a total of approximately 3,402 km (2,113 mi) of streams. Table 1 of the proposed rule (76 FR 50560) lists the streams proposed, whether they were considered occupied at the time of listing, and whether they are currently considered occupied. Maps in GIS format and full descriptions of the areas being proposed for designation can also be found in the proposed rule and in supplementary materials associated with the proposed rule at <http://www.regulations.gov>.

Table 2.3 presents the hectares (acres) of proposed units.

**Table 2.3 Approximate Proposed Critical Habitat in Hectares (Acres) by Land Ownership and State**

State	Total Area ha (ac)									
	Federal	%	State	%	Tribal	%	Private	%	Other*	%
Arizona	42,126 (104,096)		4,530 (11,195)		14,257 (35,231)		21,549 (53,249)		417 (1,031)	
California	13,070 (32,296)		428 (1,058)		7,062 (17,449)		361 (893)		30,994 (76,464)	
Colorado	3,546 (8,762)		26 (64)		1,064 (2,629)		29,221 (72,206)		575 (1,421)	
Nevada	2,330 (5,757)		1,061 (2,622)		2 (6)		1,496 (3,696)		1 (2)	
New Mexico	6,457 (15,957)		10,512 (25,975)		5,036 (12,445)		17,719 (43,785)		0 (0)	
Utah	1,564 (3,864)		32 (80)		2,063 (5,098)		1,226 (3,030)		0 (0)	
<b>Total</b>	<b>69,093</b> <b>(170,731)</b>		<b>16,590</b> <b>(40,995)</b>		<b>29,484</b> <b>(72,857)</b>		<b>71,572</b> <b>(176,859)</b>		<b>31,937</b> <b>(78,917)</b>	

\*Other/Unclassified includes some local government ownership and unclassified segments (where land ownership was not available).

*Newly Proposed Segments*

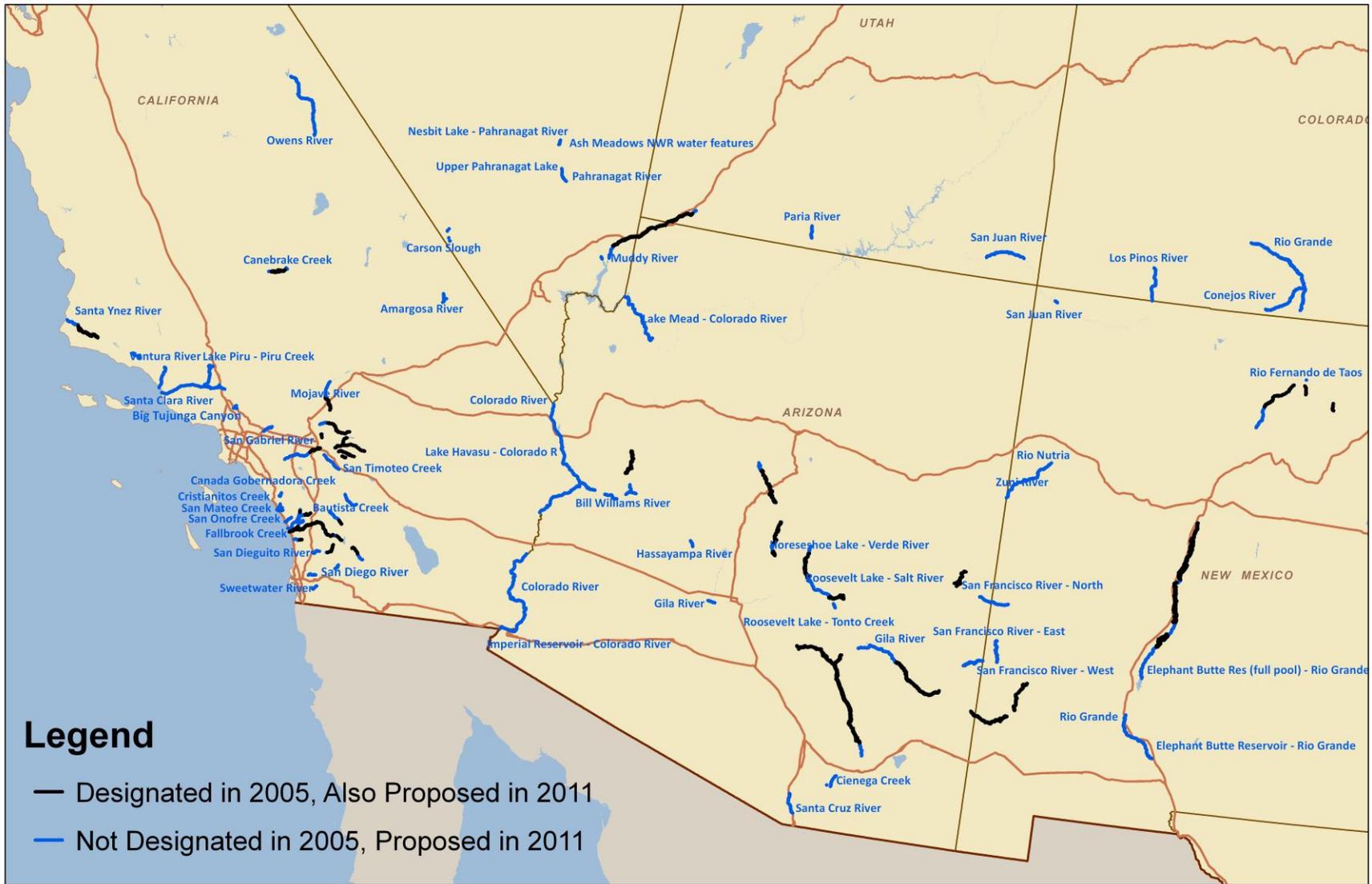
The following stream segments, listed below in Table 2.4 by Recovery Unit, were not designated as flycatcher critical habitat in 2005 but are now being proposed as flycatcher critical habitat. As mentioned above, several of these areas were proposed in 2004, but excluded from the final designation in 2005:

**Table 2.4 Newly Proposed Critical Habitat, by Recovery Unit**

Recovery Unit	Management Unit	Stream Segment
Coastal California	Santa Ynez	Mono Creek
	Santa Clara	Santa Clara River, Ventura River, Piru Creek, Castaic Creek, Big Tujunga Canyon, Little Tujunga Canyon, and San Gabriel River

<i>Recovery Unit</i>	<i>Management Unit</i>	<i>Stream Segment</i>
	Santa Ana	Bautista Creek, San Timoteo Creek, Waterman Creek
	San Diego	Canada Gobernadora Creek, Fallbrook Creek, Sweetwater River (near Sweetwater Reservoir), San Diego River, San Dieguito River, Agua Hedionda Creek, Santa Ysabel Creek, and Vail Lake
Basin and Mohave	Kern	Canebrake Creek
	Mohave	West Fork Mohave
	Amargosa	Willow Creek, Amargosa River NV, Unnamed riparian areas and Carson Slough within Ash Meadows NWR NV
	Owens	Owens River
Lower Colorado	Little Colorado	Rio Nutria, Zuni River NM
	Bill Williams	Bill Williams River, Alamo Lake, Lake Havasu, Santa Maria River AZ
	Hoover-Parker Dam	Colorado River (including Lake Havasu AZ)
	Pahrnagat	Pahrnagat River, Frenchy Lake, Nesbit Lake, Pahrnagat Lake, and Muddy River NV
	Parker Dam to Southerly Int'l	Colorado River, Lake Havasu, and Imperial Reservoir, AZ, CA
	Middle Colorado	Lake Mead AZ
	Virgin	Virgin River, UT (expanding existing segment)
Upper Colorado	San Juan	Los Piños River CO; San Juan River NM, UT
	Powell	Paria River UT
Gila	Roosevelt	Pinal Creek, Roosevelt Lake AZ
	Santa Cruz	Santa Cruz River, Cienega Creek AZ, Empire Gulch, AZ
	San Francisco	San Francisco River AZ, NM
	Hassayampa and Agua Fria	Hassayampa River and Gila River AZ
	Verde	Horseshoe Lake AZ
	Upper Gila	San Carlos Reservoir AZ
	Middle Gila and San Pedro	San Carlos Reservoir AZ
Rio Grande	Upper Rio Grande	Rio Fernando NM
	Lower Rio Grande	Rio Grande NM
	Middle Rio Grande	Elephant Butte Reservoir NM
	San Luis Valley	Rio Grande and Conejos River CO

1 Conversely, there are stream segments in the 2005 final designation (the No Action Alternative)  
2 that are not in the 2011 proposed action: the Little Colorado River - East Fork, in the Little  
3 Colorado Management Unit and the Lower Colorado Recovery Unit. Also, there is a small 3.2  
4 km (2 mi) segment of the Middle Rio Grande near the Isleta Pueblo that was designated in 2005,  
5 but is not proposed in 2011. Figure 2.1 (next page) depicts stream segments proposed for critical  
6 habitat, identified by whether they are in the existing 2005 designation or not designated in 2005  
7 but proposed in 2011.



1

2

**Figure 2.1. Proposed Critical Habitat (Alternative A)**

## 2.4 Alternative B—Critical Habitat Designation minus Exclusions

The criteria considered by the Service for exclusion are described in section 2.1. The Service considers a current land management or conservation plan (HCPs as well as other types) or other conservation partnership to provide adequate management or protection if it meets the following criteria:

1. The plan is complete and provides the same or better level of protection from adverse modification or destruction than that provided through a consultation under section 7 of the Act;
2. There is a reasonable expectation that the conservation management strategies and actions will be implemented for the foreseeable future, based on past practices, written guidance, or regulations; and
3. The plan provides conservation strategies and measures consistent with currently accepted principles of conservation biology.

Alternative B includes all the segments identified in Alternative A, except for those lands proposed for exclusion as detailed in Table 4 of the proposed rule (76 FR 50582), and in Table 2 of the revised rule, revision dated XXX (77 FR XXXX). These proposed exclusions total 1,464.3 km (909.8 mi). For a complete discussion of the rationale for exclusion of each stream segment, consult the proposed critical habitat designation (76 FR 50584-50594) and the revision dated XXX (77 FR XXXX).

## 2.5 Comparison of Potential Impacts of Southwestern Willow Flycatcher Proposed Critical Habitat Designation

The following table (Table 2.3) summarizes the potential effects of the alternative critical habitat designations. Potential effects on resources are summarized from the analyses presented in Chapter 3.

1  
2

**Table 2.3 Comparison of Potential Effects of Southwestern Willow Flycatcher Proposed Critical Habitat Designation**

<i>Resource</i>	<i>No Action (2005 Designation)</i>	<i>Alternative A—No Exclusions</i>	<i>Alternative B— with Exclusions</i>
<b>Land Use and Management</b>	<ul style="list-style-type: none"> <li>No impacts beyond those resulting from the 2005 designation</li> </ul>	<ul style="list-style-type: none"> <li>Moderate (less than significant) impacts anticipated from incremental increase in section 7 consultations related to land use management activities in newly designated habitat.</li> </ul>	<ul style="list-style-type: none"> <li>Negligible to minor impacts anticipated from incremental increase in section 7 consultations related to land use management activities in newly designated habitat.</li> </ul>
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>No impact beyond those conservation measures resulting from the 2005 critical habitat designation and associated requirements of section 7, ESA.</li> <li>Beneficial effects on vegetation resources from any jeopardy consultations</li> </ul>	<ul style="list-style-type: none"> <li>Compared with No Action Alternative, a small unknown increase in new and reinitiated section 7 consultations</li> <li>Addition of adverse mod analyses to section 7 consultations that would be undertaken for the new critical habitat units</li> <li>Minor impacts from delays, increased costs, or project alterations resulting from additional section 7 consultations, including species monitoring, mapping, surveying</li> <li>Likely beneficial impacts on riparian vegetation from proposed project</li> </ul>	<ul style="list-style-type: none"> <li>Minor adverse impacts similar to Alternative A, but fewer consultations, given fewer units of critical habitat</li> <li>Beneficial impacts roughly equivalent to Alternative A, owing to conservation easements or agreements on excluded units</li> </ul>

<i>Resource</i>	<i>No Action (2005 Designation)</i>	<i>Alternative A—No Exclusions</i>	<i>Alternative B— with Exclusions</i>
		modifications to conserve habitat	
<b>Wildlife (including T&amp;E)</b>	<ul style="list-style-type: none"> <li>• No impact beyond those conservation measures resulting from the 2005 critical habitat designation and associated requirements of section 7, ESA.</li> <li>• Beneficial effects on wildlife resources from any jeopardy consultations</li> </ul>	<ul style="list-style-type: none"> <li>• Compared with No Action Alternative, a small unknown increase in new and reinitiated section 7 consultations</li> <li>• Addition of adverse mod analyses to section 7 consultations that would be undertaken for the new critical habitat units</li> <li>• Minor impacts from delays, increased costs, or project alterations resulting from additional section 7 consultations, including species monitoring, mapping, surveying</li> <li>• Likely beneficial impacts on wildlife that use riparian habitats and especially the flycatcher from proposed project modifications to conserve habitat</li> </ul>	<ul style="list-style-type: none"> <li>• Minor adverse impacts similar to Alternative A, but fewer consultations, given fewer units of critical habitat</li> <li>• Beneficial impacts roughly equivalent to Alternative A, owing to conservation easements, partnerships, or agreements on excluded units</li> </ul>

<i>Resource</i>	<i>No Action (2005 Designation)</i>	<i>Alternative A—No Exclusions</i>	<i>Alternative B— with Exclusions</i>
<b>Fire Management</b>	<ul style="list-style-type: none"> <li>No impact beyond those conservation measures resulting from the critical habitat designation of 2005 and associated requirements of section 7, ESA.</li> </ul>	<ul style="list-style-type: none"> <li>Compared with No Action Alternative, a small unknown increase in new and reinitiated section 7 consultations</li> <li>Addition of adverse mod analyses to section 7 consultations that would be undertaken for the new critical habitat units</li> <li>Minor impacts from delays, increased costs, or project alterations resulting from additional section 7 consultations, including species monitoring, mapping, surveying</li> </ul>	<ul style="list-style-type: none"> <li>Minor adverse impacts similar to Alternative A, but fewer consultations, given fewer units of critical habitat</li> </ul>
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>No adverse effects anticipated beyond any conservation measures or project modifications resulting from the listing of the southwestern flycatcher, designation of the 2005 critical habitat and associated requirements of section 7 of the ESA.</li> <li>If consultations</li> </ul>	<ul style="list-style-type: none"> <li>Compared with No Action Alternative, a small increase in new and reinitiated section 7 consultations on unoccupied land and newly proposed critical habitat.</li> <li>Addition of adverse modification analyses to section 7 consultations in newly proposed stream segments.</li> <li>Moderate (less than significant) impacts from delays, increased costs, or project alternations</li> </ul>	<ul style="list-style-type: none"> <li>Moderate (less than significant) adverse impacts similar to Alternative A, but fewer consultations, given fewer units of critical habitat.</li> <li>Same minor beneficial effects as the No Action Alternative and Alternative A.</li> </ul>

<b>Resource</b>	<b>No Action (2005 Designation)</b>	<b>Alternative A—No Exclusions</b>	<b>Alternative B— with Exclusions</b>
	<p>occur, no consideration of adverse modification to unoccupied units.</p> <ul style="list-style-type: none"> <li>• Minor beneficial effects on water resources due to increased conservation measures to help conserve PCEs and natural stream hydrology and geomorphology</li> </ul>	<p>resulting from additional section 7 consultations.</p> <ul style="list-style-type: none"> <li>• Same minor beneficial effects as No Action</li> </ul>	
<b>Livestock Grazing</b>	<ul style="list-style-type: none"> <li>• No adverse effects anticipated beyond any conservation measures or project modifications resulting from the listing of the southwestern flycatcher, designation of the 2005 critical habitat and associated requirements of section 7 of the ESA.</li> <li>• If consultations occur, no consideration of adverse modification to unoccupied units.</li> </ul>	<ul style="list-style-type: none"> <li>• Compared with No Action Alternative, a small increase in new and reinitiated section 7 consultations on unoccupied land and newly proposed critical habitat.</li> <li>• Addition of adverse modification analyses to section 7 consultations in newly proposed stream segments.</li> <li>• Moderate (less than significant) impacts from delays, increased costs, or project alternations resulting from additional section 7 consultations.</li> <li>• Same minor</li> </ul>	<ul style="list-style-type: none"> <li>• Moderate (less than significant) adverse impacts similar to Alternative A, but fewer consultations, given fewer units of critical habitat.</li> <li>• Same minor beneficial effects as the No Action Alternative and Alternative A.</li> </ul>

<i>Resource</i>	<i>No Action (2005 Designation)</i>	<i>Alternative A—No Exclusions</i>	<i>Alternative B— with Exclusions</i>
		beneficial effects as No Action	
<b>Construction/Development</b>	<ul style="list-style-type: none"> <li>• No adverse effects anticipated beyond any conservation measures or project modifications resulting from the listing of the southwestern flycatcher, designation of the 2005 critical habitat and associated requirements of section 7 of the ESA.</li> <li>• If consultations occur, no consideration of adverse modification to unoccupied units.</li> </ul>	<ul style="list-style-type: none"> <li>• Compared with No Action Alternative, a small increase in new and reinitiated section 7 consultations on unoccupied land and newly proposed critical habitat.</li> <li>• Addition of adverse modification analyses to section 7 consultations in newly proposed stream segments.</li> <li>• Moderate (less than significant) impacts from delays, increased costs, or project alternations resulting from additional section 7 consultations.</li> </ul>	<ul style="list-style-type: none"> <li>• Moderate (less than significant) adverse impacts similar to Alternative A, but fewer consultations, given fewer units of CH.</li> </ul>
<b>Tribal Trust Resources</b>	<ul style="list-style-type: none"> <li>• No adverse effects anticipated because no section 7 consultations are likely to occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Indirect, minor to moderate adverse impacts if consultations occur for proposed activities on newly designated habitat</li> </ul>	<ul style="list-style-type: none"> <li>• No adverse effects anticipated because no section 7 consultations are likely to occur due to the exclusion of tribal trust resources.</li> </ul>
<b>Soils &amp; Minerals</b>	<ul style="list-style-type: none"> <li>• No additional adverse effects beyond any conservation</li> </ul>	<ul style="list-style-type: none"> <li>• Compared with No Action Alternative, an increase in new and reinitiated</li> </ul>	<ul style="list-style-type: none"> <li>• Compared with No Action Alternative, a small increase in</li> </ul>

<b>Resource</b>	<b>No Action (2005 Designation)</b>	<b>Alternative A—No Exclusions</b>	<b>Alternative B— with Exclusions</b>
	<p>measures or project modifications resulting from existing critical habitat.</p> <ul style="list-style-type: none"> <li>• Beneficial impacts on soil and mineral resources due to increased conservation measures to help conserve PCEs.</li> </ul>	<p>section 7 consultations for actions within newly proposed critical habitat.</p> <ul style="list-style-type: none"> <li>• Addition of adverse modification analyses to section 7 consultations in newly proposed stream segments.</li> <li>• Moderate (less than significant) impacts from delays, increased costs, or project modifications resulting from additional section 7 consultations.</li> <li>• Same beneficial impacts as No Action</li> </ul>	<p>new and reinitiated section 7 consultations for actions within newly proposed critical habitat.</p> <ul style="list-style-type: none"> <li>• Addition of adverse modification analyses to section 7 consultations in newly proposed stream segments.</li> <li>• Minor impacts from delays, increased costs, or project modifications resulting from additional section 7 consultations.</li> <li>• Same beneficial impacts as No Action and Alternative A</li> </ul>
<b>Recreation</b>	<ul style="list-style-type: none"> <li>• No additional adverse effects beyond any conservation measures or project modifications resulting from existing flycatcher critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>• Minor adverse impacts from limitations and restrictions on boating, fishing, swimming, camping, horseback riding, OHV use, and bicycling, in small number of cases</li> <li>• Beneficial impacts to the quality of many recreational values—for example, in bird</li> </ul>	<ul style="list-style-type: none"> <li>• Adverse impacts, though reduced in Alternative B, would still be characterized as minor, since some incremental restrictions and limitations on recreational activities could still occur.</li> <li>• This alternative would still be</li> </ul>

<b>Resource</b>	<b>No Action (2005 Designation)</b>	<b>Alternative A—No Exclusions</b>	<b>Alternative B— with Exclusions</b>
		<p>watching, hiking, and sightseeing—which would be preserved and potentially enhanced with conservation, mitigation, and management measures</p>	<p>expected to produce similar beneficial impacts to recreational management activities as Alternative A, since the excluded areas provide conservation benefit to recreational values.</p>
<b>Socioeconomics</b>	<ul style="list-style-type: none"> <li>No additional impacts to economic efficiency and distribution beyond any conservation measures or project modifications resulting from existing flycatcher critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>Minor to moderate direct adverse impacts from increased number of reinitiated consultations for ongoing projects within designated critical habitat, and additional consultations for proposed projects</li> <li>Minor to moderate indirect adverse impacts to agencies and project proponents from time and monetary costs of section 7 consultations, including developing alternatives and/or mitigation.</li> <li>Unquantifiable economic benefits from conservation, including improved water quality, decreased</li> </ul>	<ul style="list-style-type: none"> <li>Similar to A, but exclusions would reduce these, due to decreased number of new and re-initiated section 7 consultations.</li> <li>Similar indirect impacts as A, but fewer because of reduced administrative and monetary costs.</li> <li>Same unquantifiable economic benefits from conservation, because exclusions are based on existence of other means of conservation</li> </ul>

<i>Resource</i>	<i>No Action (2005 Designation)</i>	<i>Alternative A—No Exclusions</i>	<i>Alternative B— with Exclusions</i>
		development in flood prone areas, property values aesthetics and public safety	
<b>Environmental Justice</b>	<ul style="list-style-type: none"> <li>No additional impacts beyond any conservation measures or project modifications resulting from existing flycatcher critical habitat.</li> </ul>	<ul style="list-style-type: none"> <li>Minor adverse impacts, in the context of the entire designation, because: (1) the economic impacts associated with any individual relevant projects would be relatively small; and (2) there would be only a small number of projects throughout the designation which would create such impacts.</li> </ul>	<ul style="list-style-type: none"> <li>Same as A, but fewer impact-producing projects due to fewer consultations</li> </ul>
<b>Oil and Gas Development</b>	<ul style="list-style-type: none"> <li>No impacts, because oil and gas development would not take place in previously designated areas</li> </ul>	<ul style="list-style-type: none"> <li>Minor adverse impacts from increases in administrative costs and potential delays from consultations on pipeline projects with Federal nexus.</li> <li>Incremental project modifications unlikely due to existing protections on Federal and tribal lands</li> </ul>	<ul style="list-style-type: none"> <li>No impacts, as areas containing oil and gas development activities are proposed for exclusion</li> </ul>

---

1 **CHAPTER 3**  
2 **AFFECTED ENVIRONMENT AND ENVIRONMENTAL**  
3 **CONSEQUENCES**

---

4 **3.1 Introduction**

5 This chapter is organized by resource categories that may potentially be affected by designating  
6 critical habitat for the southwestern willow flycatcher. These resource categories were selected  
7 based on issues and concerns identified by the Service in the August 2011 proposed critical  
8 habitat rule (76 FR 50542-50629), public comments submitted for the 2005 rule, a review of the  
9 consultation history for the species, and public comments on the new proposed rule. Within each  
10 resource category, a description of the existing condition and threats is followed by an evaluation  
11 of potential environmental consequences resulting from the designation of critical habitat.  
12 Potential effects are evaluated for each alternative described in Chapter 2, including the No  
13 Action Alternative.

14 Under the No Action Alternative, no changes in designated critical habitat for the southwestern  
15 willow flycatcher would be made; the 2005 designation would continue in place. This means  
16 that the consultation history since the 2005 designation can be used to analyze the impacts of the  
17 No Action Alternative.

18 The 2005 designation was analyzed in an Environmental Assessment (Service 2005), which  
19 describes the resource conditions and potential impacts of that designation. Consistent with CEQ  
20 and Service policy to incorporate previous environmental reviews by reference, this current  
21 Environmental Assessment focuses on the incremental impacts of newly designated (or  
22 withdrawn) stream segments. This EA uses the consultation history since 2005 as the basis upon  
23 which to analyze continuation of the existing designation—i.e., the No Action Alternative.

24 **3.1.1 Methodology**

25 Descriptions of existing conditions presented in sections 3.2 through 3.13 of this document are  
26 based on a number of sources. These include:

- 27
- 28 • Published literature;
  - 29 • Available state and Federal agency reports and management plans;
  - 30 • Proposed critical habitat designation for the southwestern willow flycatcher (76 FR  
31 50542-50629); and
  - 32 • The 2011 draft economic analysis for the proposed designation of critical habitat (IEc  
33 2012).

33 *Agencies and Projects Likely to Undergo Consultation*

34 A variety of Federal agencies and projects could cause adverse impacts to the species and  
35 therefore would likely go through the section 7 consultation process whether or not critical  
36 habitat is designated. These include:

1 **Table 3.1 Likely Agency Consultations Regardless of Critical Habitat**

<i>Agency</i>	<i>Project Types</i>
U.S. Army Corps of Engineers	Bridge projects, stream restoration, vegetation management, urban development
U.S. Bureau of Land Management	Fire suppression, fuel reduction treatments, land resource management plans, livestock grazing and management plans, mining permits, renewable energy development
U.S. Bureau of Reclamation	Transportation, storage, and delivery of water
U.S. Department of Homeland Security	Border security infrastructure and operations
U.S. Department of Transportation	Highway and bridge construction and maintenance
U.S. Fish & Wildlife Service	Issuance of section 10 enhancement of survival permits, HCPs, and safe harbor agreements; National Wildlife Refuge planning; Partners for Fish and Wildlife program projects benefiting the flycatcher, Wildlife and Sportfish Restoration program
U.S. Forest Service	Vegetation management, noxious weed treatments, fire management plans, fire suppression, fuel reduction treatments, forest plans, livestock grazing allotment management plans, mining permits, travel management plans.

2  
 3 Because the Physical or Biological Features (PBFs) and Primary Constituent Elements (PCEs)  
 4 are nearly identical to the 2005 critical habitat designation, we do not anticipate that different or  
 5 new agencies will be consulting on previously unknown activities as a result of this proposed  
 6 revision. Therefore, the same Federal agencies listed above are also anticipated to be the  
 7 primary agencies that would consult with the Service on flycatcher critical habitat under section  
 8 7.

9 *Approach to Analyzing Impacts*

10 There are numerous activities within lands proposed for critical habitat that could potentially be  
 11 affected by the designation. Consultations are expected to primarily involve projects occurring  
 12 within floodplains that could impact riparian habitat and stream function (listed above and in the  
 13 proposed rule (76 FR 50577-50578), similar to those activities which previously occurred during  
 14 the flycatcher’s consultation history. Activities that could cause impacts include: groundwater  
 15 pumping, surface water diversion, river damming, and water storage; livestock grazing and  
 16 management; fire suppression; road/bridge construction and maintenance; mining; agriculture;  
 17 flood control; vegetation removal; recreation developments and activities including off-road  
 18 vehicle use, trail development, campgrounds, and hiking use; and other activities.

19 With respect to critical habitat, the purpose of section 7 consultation is to ensure that actions of  
 20 Federal agencies do not destroy or adversely modify critical habitat. Individuals, organizations,

1 local governments, states, and other non-Federal entities are potentially affected by the  
2 designation of critical habitat *only* if their actions have a connection to Federal actions, called a  
3 “nexus”; that is, only if those actions occur on Federal lands, require a Federal permit or license,  
4 or involve Federal funding. The designation of critical habitat imposes no universal rules or  
5 restrictions on land use, nor does it automatically prohibit or alter any land use or water  
6 development activity.

7 The potential for destruction or adverse modification of critical habitat by a Federal action is  
8 assessed by determining the effects of the proposed Federal action on the Physical or Biological  
9 Features (PBFs) and Primary Constituent Elements (PCEs) of habitat that are essential to the  
10 conservation of the species. These anticipated effects are then analyzed to determine how they  
11 will influence the function and conservation role of the affected critical habitat. This analysis  
12 provides the basis for determining the significance of anticipated effects of the proposed Federal  
13 action on critical habitat. The threshold for destruction or adverse modification is evaluated in  
14 the context of whether the critical habitat would remain functional to serve the intended  
15 conservation role for the species.

16 In the context of an Environmental Assessment, the evaluation of the impacts of critical habitat  
17 designation focuses on outcomes of the potential increase in section 7 consultations resulting  
18 from the designation, since the designation does not itself produce or authorize direct physical  
19 impacts. Where consultations occur, impacts could include the following:

- 20 • Additional expenditures of time and money by Federal agencies (including the Service)  
21 and non-Federal proponents to complete new, re-initiated, or expanded consultations.
- 22 • Additional time and costs to implement the reasonable and prudent alternatives and  
23 (possibly) discretionary conservation recommendations specified in biological opinions  
24 in which adverse modification was concluded.
- 25 • Additional time and costs to implement conservation measures that are part of an  
26 agency’s proposed action to minimize adverse effects to critical habitat.
- 27 • A greater probability that the PBFs and PCEs identified in section 1.4.2 would be  
28 maintained, thus increasing the likelihood of species survival.
- 29 • Action agencies and project proponents may alter their proposals to reduce, minimize, or  
30 avoid impacts on PBFs and PCEs. Such alterations may obviate the need for  
31 consultation. If a consultation is initiated, then the impact of critical habitat designation  
32 could be the modification of the proposal to limit the impacts on PBFs and PCEs or the  
33 imposition of reasonable and prudent alternatives that would reduce impacts on PBFs and  
34 PCEs.

### 35 *Considerations for Analyzing Potential Consultation Impacts*

36 The analysis of potential impacts for each resource topic takes into account a wide range of  
37 considerations. First, additional consultations beyond those currently being carried out under the  
38 2005 designation could result from the following circumstances:

- 39 • There will likely be some Federal agencies with responsibilities in specific flycatcher  
40 Management Units that will now consider consultation on flycatcher habitat where it may  
41 have only been rarely addressed in the past.

- 1 • Federal agencies may need to re-initiate previously completed section 7 consultations for  
2 actions that only addressed the flycatcher under the jeopardy standard (due to its listing as  
3 an endangered species) in areas newly proposed as critical habitat, but where flycatchers  
4 have been detected (or are believed to occur). The streams or portions of streams in this  
5 category that are being proposed as critical habitat for the first time are listed in Table  
6 2.4.
- 7 • In addition to re-initiation of ongoing projects occurring on these specific stream  
8 segments (see paragraph above), there could be some incremental effect of designating  
9 these streams which could cause agencies to be more aware of the stream segments and  
10 their function in flycatcher recovery. Therefore, the streams designated as critical habitat  
11 might receive more agency awareness, and therefore, the agencies may consult with the  
12 Service on actions for which they may have previously not considered as needing  
13 consultation.
- 14 • One likely source of new consultations is the inclusion of areas where flycatchers are not  
15 known to be nesting. These are listed in Table 2.4. These areas could be newly subjected  
16 to potential consultation to avoid destruction or adverse modification of critical habitat  
17 for activities with a Federal nexus.
- 18 • There could be some additional section 7 consultations within proposed critical habitat  
19 segments that the Service considered occupied by flycatchers at the time of listing, even  
20 though some portions of the stream segment might not be considered occupied by other  
21 Federal agencies for section 7 consultation. For the proposed critical habitat, any stream  
22 segment along a stream where flycatchers were found nesting from 1991 to 1994 was  
23 considered occupied at the time of listing. This may be a larger area than a Federal  
24 agency would consider as occupied, and the Federal agency might consider such a  
25 consultation to be based only on critical habitat. Some incremental effects may arise if  
26 any section 7 adverse modification consultations occur in these areas. This is because a  
27 Federal agency might not have consulted with the Service under section 7 in the absence  
28 of the critical habitat designation.
- 29 • For those proposed critical habitat areas where the flycatcher is known to have only a few  
30 or no territories and there are few critical habitat areas being proposed in a given  
31 Management Unit, there is some increased likelihood that a proposed action could result  
32 in adverse modification without resulting in jeopardy. This is based on the fact that any  
33 substantial reduction in the conservation value of a proposed critical habitat segment in a  
34 Management Unit with few or no territories could potentially result in an adverse  
35 modification without reaching jeopardy. This would cause an increase in administrative  
36 efforts to develop measures to avoid the adverse modification. The Management Units  
37 with the fewest territories have an increased possibility of an adverse modification  
38 finding where a finding of jeopardy would be unlikely (Salton, Amargosa, San Juan,  
39 PowellPowell, Santa Cruz, San Francisco, Hassayampa/Agua Fria, and lower Rio Grande  
40 Management Units).

41  
42 However, the analysis of impacts for each resource topic balances consideration of the potential  
43 sources of additional consultations listed above against additional factors:

- 44 • Most of the Management Units where critical habitat is proposed are occupied by the  
45 southwestern willow flycatcher; therefore, actions in those areas would be subject to  
46 section 7 consultations irrespective of the area's status as critical habitat. In such

1 occupied areas, the impact would be to expand consultations to include adverse  
2 modification of critical habitat.

- 3 • Previously-designated critical habitat (2005) in 15 of the 29 Management Units is already  
4 subject to adverse modification analysis under section 7 consultation. In these areas, the  
5 number and type of consultations would not change.
- 6 • The Little Colorado East Fork stream segment was designated as critical habitat in 2005,  
7 but is not being proposed for designation under the new critical habitat, because it did not  
8 have the characteristics of essential flycatcher habitat. Under Alternative A, this segment  
9 would no longer be subject to section 7 consultations for adverse modification of critical  
10 habitat.

### 11 *Consultation History*

12 From 1995 forward, there have been a limited number of - biological opinions that have  
13 resulted in jeopardy determinations for the flycatcher. These opinions occurred within the first  
14 six years of the species being listed as endangered, during periods without a critical habitat  
15 designation, and during a time when the status of the species was not as well known. In the  
16 past, jeopardy has been avoided through proposed conservation measures and project  
17 modifications, such as land acquisition and management, research, and monitoring. There  
18 have been no previous section 7 consultations where the Service found a proposed Federal  
19 action would result in adverse modification of critical habitat. Previous consultations that have  
20 affected each resource topic are discussed in those resource-specific sections.

21 Since 2005 there have been a minimum of 33 formal consultations for the flycatcher critical  
22 habitat (.47 formals per month); all of these consultations have resulted in a “no jeopardy”  
23 determination (Service 2011a).

### 24 **3.1.2 Economic Analysis**

25 A separate analysis was conducted by Industrial Economics Incorporated (IEc 2012) to assess  
26 the potential economic impacts associated with designation of critical habitat for the flycatcher.  
27 Where appropriate, information from the draft economic analysis has been incorporated into this  
28 Environmental Assessment. The draft Economic Analysis estimates the costs of conservation  
29 activities related to the flycatcher, considering both the baseline costs (i.e., those impacts  
30 expected to occur absent the designation of critical habitat) or incremental costs (i.e., those  
31 impacts expected to occur as a result of critical habitat designation).

32 This basis of comparison of baseline vs. incremental costs is slightly different from that used in  
33 the Environmental Assessment, where the basis for comparison is required by regulation to  
34 include a “No Action Alternative” and the other action alternatives. For the flycatcher  
35 Environmental Assessment, the No Action Alternative is defined as the alternative that would be  
36 implemented if the Service did not implement either of the proposed revisions. That course of  
37 action would lead to the continuation of the existing circumstance—that is, a continuation of  
38 existing critical habitat as designated in 2005. The Proposed Action consists only of areas not  
39 designated in 2005. Therefore, in this Environmental Assessment, all costs that are incurred on  
40 critical habitat designated in 2005 are considered to be impacts of the No Action Alternative

41

1 However, the costs estimated by the Economic Analysis and summarized herein quantify those  
2 incremental impacts that are attributable, directly or indirectly, to the designation of *all* critical  
3 habitat, not just the changes proposed in 2011. This means that the economic impacts provided in  
4 this EA somewhat overstate the expected impacts that would result from comparing the Proposed  
5 Action Alternative to the No Action Alternative (the 2005 designation) because the draft  
6 Economic Analysis considers as incremental the additional administrative costs to address  
7 adverse modification in areas already designated in 2005.

## 8 **3.2 Land Use and Management**

### 9 **3.2.1 Existing Conditions**

#### 10 **LAND MANAGEMENT**

11 In 2005, approximately 120,824 acres (48,896 ha) along selected stream segments in Arizona,  
12 California, Utah, Nevada, and New Mexico were designated as critical habitat for the  
13 southwestern willow flycatcher (70 FR 60886). The currently proposed action involves the  
14 designation of approximately 216,469 acres (87,602 ha) of critical habitat for the flycatcher  
15 along selected stream segments in 29 Management Units (76 FR 50542-50629).

16 Table 2 of the proposed rule (76 CFR 50561), incorporated here by reference, displays the  
17 proposed critical habitat areas by land ownership for each state, expressed as approximate stream  
18 lengths in km (mi). Appendix A displays all proposed stream segments by land management  
19 type (Federal agency, State, tribal, private), broken into three regional sections (breakouts are  
20 informal, not administrative, done only for purposes of increased legibility).

21 Federal land management activities subject to formal section 7 consultations involving effects to  
22 the flycatcher have occurred throughout the 29 proposed Management Units involving habitat  
23 construction, road construction, land management activities and planning, land exchange,  
24 pesticide and herbicide use, forest management plan activities, and resource management plan  
25 activities.

26 The proposed critical habitat designation includes lands under Federal (32%), state (8%), private  
27 (33%), tribal (13%), and unclassified (14%) land ownership (76 FR 50561). Table 3.2 below  
28 summarizes the land ownership status for the 29 designated critical habitat management units by  
29 state. Appendix A depicts the land ownership status for the management units.

**Table 3.2 Approximate Proposed Critical Habitat in Acres (Hectares)  
by Land Ownership and State**

State	Total Area ha (ac)									
	Federal	%	State	%	Tribal	%	Private	%	Other*	%
Arizona	42,126 (104,096)		4,530 (11,195)		14,257 (35,231)		21,549 (53,249)		417 (1,031)	
California	13,070 (32,296)		428 (1,058)		7,062 (17,449)		361 (893)		30,994 (76,464)	
Colorado	3,546 (8,762)		26 (64)		1,064 (2,629)		29,221 (72,206)		575 (1,421)	
Nevada	2,330 (5,757)		1,061 (2,622)		2 (6)		1,496 (3,696)		1 (2)	
New Mexico	6,457 (15,957)		10,512 (25,975)		5,036 (12,445)		17,719 (43,785)		0 (0)	
Utah	1,564 (3,864)		32 (80)		2,063 (5,098)		1,226 (3,030)		0 (0)	
<b>Total</b>	<b>69,093 (170,731)</b>		<b>16,590 (40,995)</b>		<b>29,484 (72,857)</b>		<b>71,572 (176,859)</b>		<b>31,937 (78,917)</b>	

Source: Supplemental Materials for Proposed Critical Habitat Rule, Federal Register, August 15, 2011.  
Docket No. FWS-R2-ES-2011-0053

The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area; does not allow the government or public to access private lands; and does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner seeks or requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

*Federal Land*

Approximately 32 percent of the land proposed for critical habitat designation is managed by Federal agencies.

U.S. Forest Service

Much of the Federal land is managed by the USDA Forest Service on National Forests across three states: Tonto, Prescott, Coconino, and Apache-Sitgreaves National Forests in Arizona; Angeles, Cleveland, San Bernardino, Los Padres, and Sequoia National Forests in California; and Carson, Cibola, and Gila National Forests in New Mexico

On Forest Service lands, the principal activities conducted by the agency affecting critical habitat units include fire and fuels management, habitat restoration, road and fence maintenance and construction, management of off-road vehicle use and livestock grazing, and vegetation management. These activities and their impacts are discussed in the individual resource sections of this chapter. The Gila and Tonto NFs, in particular, have worked to improve conditions for flycatchers along the Gila River and Tonto Creek/Roosevelt Lake/Salt River area by restoring

1 vegetation, removing land management stressors, building cattle fences, establishing seasonal  
2 fenced closures, managing off-road vehicles, and preventing and fighting wildfires.

### 3 Bureau of Land Management

4 The proposed critical habitat designation also includes Federal land managed by the Bureau of  
5 Land Management (BLM) from the Kingman, Hassayampa, Safford, Lake Havasu, and Yuma  
6 Field Offices, and the Las Cienegas National Conservation Area (NCA) in Arizona.

7 National Conservation Areas are managed under the principles of multiple-use and ecosystem  
8 management for future generations. The filing of new mining claims and mineral leasing is not  
9 permitted. Vehicle use at Las Cienegas NCA is limited to designated roads (BLM, 2011). Other  
10 BLM lands include smaller parcels in Mohave, Maricopa, Graham, and Yuma counties, Arizona.  
11 These lands are managed for multiple use, including habitat restoration, fire management,  
12 grazing, and recreation.

### 13 U.S. Fish & Wildlife Service

14 There are nine National Wildlife Refuges (NWR) managed by the U.S. Fish and Wildlife Service  
15 (USFWS) within the proposed critical habitat units. These include NWRs in Nevada (Ash  
16 Meadows and Pahrnagat NWRs), Arizona (Bill Williams NWR), New Mexico (Bosque del  
17 Apache and Sevilleta NWRs), Colorado (Alamosa NWR), and at the California/Arizona  
18 boundary along the Colorado River (Havasu, Cibola, and Imperial NWRs).

19 National wildlife refuges are areas set aside and managed with the specific purpose of conserving  
20 fish and wildlife. Refuges are managed by the USFWS under the authority of the National  
21 Wildlife Refuge System Act of 1966 (NWRS) and the NWRS Improvement Act of 1997  
22 (Improvement Act). The Acts expressly state that wildlife conservation is the priority of NWRS  
23 lands, and that the biological integrity, diversity, and environmental health of the refuge are to be  
24 maintained. The mission of the NWRS is to administer a national network of lands and waters  
25 for the conservation, management and, where appropriate, restoration of the fish, wildlife, and  
26 plant resources and their habitats within the U.S. for the benefit of present and future generations  
27 of Americans.

28 Lands within the NWR system are different from other, multiple-use public lands in that they are  
29 closed to all public uses unless specifically and legally opened to those uses that have been  
30 determined to be compatible for the refuge. A compatible use is one that, in the professional  
31 judgment of the Refuge Manager, will not interfere with or detract from the refuge's purpose.  
32 The NWRS Improvement Act has identified six priority refuge uses that include hunting, fishing,  
33 wildlife observation, photography, environmental education, and interpretation. These six uses  
34 receive priority consideration over other uses in planning and management.

35 Under the Improvement Act, a Comprehensive Conservation Plan (CCP) is required for  
36 managing each refuge. The Improvement Act requires that a CCP be completed for each refuge  
37 by 2012 and that the public have an opportunity for active involvement in the plan development  
38 and revision. Thus, the CCP planning process requires compliance with the Improvement Act  
39 and with NEPA.

40 These refuges have developed CCPs that will provide for protection and management of  
41 Federally-listed species and sensitive natural habitats. The CCPs, which can be found at

1 <http://www.fws.gov/refuges/>, are subject to section 7 consultation requirements. During  
2 consultations, the consistency of the CCP with the conservation needs of the flycatcher is  
3 evaluated. Prior to implementation of the Improvement Act, routine consultations in some  
4 instances resulted in the development of CCPs for specific areas across the flycatcher's range  
5 (i.e., Sprague Ranch in Kern Management Unit).

#### 6 *State Land*

7 Critical habitat management units for the flycatcher occur in Arizona, California, Colorado,  
8 Utah, Nevada, and New Mexico. State-owned land comprises approximately 7 percent of the  
9 total amount of land proposed for critical habitat designation. Each of these states has wildlife  
10 laws that provide some protections to the flycatcher (see Section 1.6). These protections will  
11 continue with or without the proposed changes to critical habitat designation.

12 As part of a joint Federal/State settlement agreement associated with conducting a Federal  
13 Natural Resource Damage Assessment for resource impacts created by ASARCO (a mining  
14 company) in Arizona (and nationally), ASARCO deeded about four miles of land along the San  
15 lower Pedro River to the Arizona Game and Fish Department to compensate for wildlife habitat  
16 impacts. Management to replace injured natural resources is the responsibility of the NRDAR  
17 trust, which includes multiple Federal and non-Federal stakeholders (Marr, personal  
18 communication 2011). This area occurs within the Middle Gila/San Pedro Management Unit.  
19 Breeding flycatcher habitat occurs on these lands and is anticipated to be improved and protected  
20 for perpetuity.

#### 21 *Tribal Land*

22 Critical habitat on tribal trust resource areas throughout the study area comprises approximately  
23 72,305 acres (29,261 ha), or approximately 13 percent of lands designated for critical habitat.  
24 These areas are discussed in more detail in Section 3.9 of this EA.

#### 25 *Private Land*

26 The proposed designation includes 176,619 acres (71,745 ha) of private land (33 percent) that  
27 support a variety of land uses. Many of these lands currently implement habitat protection  
28 measures as part of their land management activities. These lands include the following:

- 29 • Walton Family Memorandum of Understanding. In response to the movement of the  
30 introduced tamarisk leaf beetle expanding beyond its anticipated range into the  
31 flycatcher's range and affecting its habitat (see section 3.3.1), the Walton Family  
32 Foundation is developing a Memorandum of Understanding with the Service to  
33 voluntarily fund flycatcher habitat-improvement projects along the Colorado River  
34 drainage (Virgin River in particular, etc.) in NV, UT, and AZ. This effort is attempting  
35 to offset the impacts from the tamarisk beetle by establishing vegetation the flycatchers  
36 rely upon that would not expect to regenerate naturally.
- 37 • Salt River Project. The Salt River Project (SRP) and Bureau of Reclamation (USBR)  
38 have purchased lands along the Verde, Gila, and San Pedro rivers within the Verde and  
39 Middle Gila/San Pedro Management Units that are being managed for flycatcher habitat.  
40 These properties were purchased and managed as a result of ongoing operations of  
41 Roosevelt and Horseshoe Dams in central Arizona and the habitat conservation plans and

1 biological opinions associated with them. Currently, these properties are managed by  
2 The Nature Conservancy (TNC) and SRP.

- 3 • Orange County Water District. In conjunction with efforts to conserve and recover the  
4 endangered least Bell's vireo and southwestern willow flycatcher, species monitoring,  
5 cowbird trapping, and habitat restoration and conservation efforts have been undertaken  
6 in the Prado Basin and contiguous reaches of the Santa Ana River in southern CA since  
7 1996. Although the local management effort, funded largely by the Orange County  
8 Water District pursuant to several Biological Opinions, originally emphasized monitoring  
9 and management of the vireo, the conservation of the small breeding population of the  
10 flycatcher has now become the top priority of the management team since the species was  
11 Federally listed as endangered. These efforts occur within the Santa Ana Management  
12 Unit.
- 13 • The Nature Conservancy Preserves. TNC owns and manages property along the  
14 Hassayampa and Verde Rivers in Arizona within the proposed designation that conserve  
15 the riparian habitat flycatcher rely upon. They also have property along the San Pedro  
16 River outside of the proposed designation that contributes toward flycatcher conservation  
17 by protecting riparian habitat values, retiring water rights, and improving populations.  
18 Along the Gila River in the Cliff-Gila Valley, New Mexico, TNC has initiated habitat  
19 enhancement on its lands, including reducing levees to allow controlled flooding and  
20 subsequent establishment of riparian vegetation for nesting flycatchers. TNCs properties  
21 occur in the Hassayampa/Agua Fria, Verde, and Upper Gila Management Units.
- 22 • Audubon Kern River Preserve. The Audubon Kern River Preserve (in cooperation with  
23 agencies and groups such as the Southern Sierra Research Station, Army Corps of  
24 Engineers, California Department of Fish and Game (CDFG), and others) works to  
25 protect habitat in the Southern Sierra Nevada, especially in Kern County, California. The  
26 456 ha (1,127 ac) Kern River Preserve (KRP) was purchased in 1981 by TNC. The land  
27 had been operated as a cattle ranch since the mid-1800s. TNC removed cattle from the  
28 riparian areas shortly after they purchased the property in order to enhance the riparian  
29 habitat. However, some riparian areas are lightly to moderately grazed during the winter.  
30 The change in management resulted in the regeneration of at least 150 ha (370 ac) of  
31 riparian forest. In addition, TNC has planted over 125 ha (309 ac) of riparian habitat. In  
32 1997, Audubon CA took over management of the KRP and continues to manage the  
33 property for riparian values. The land protected by efforts of Audubon and its partners  
34 now exceeds 8,903 ha (22,000 ac) to be protected for the benefit of biodiversity. Along  
35 the South Fork Kern River in the Kern Management Unit, the flycatcher is one of the key  
36 riparian bird species that is managed by the Audubon Society.
- 37 • Canebrake Ecological Preserve. The CDFG manages the Canebrake Ecological  
38 Preserve at the confluence of the South Fork Kern River and Canebrake Creek in the  
39 Kern Management Unit. This area contains riparian vegetation suitable for nesting  
40 flycatchers.

1 *Lower Colorado River Multi-Species Conservation Program (LCR MSCP)*

2 A regional partnership known as the Lower Colorado River Multi-Species Conservation Program  
3 (LCR MSCP) involves a broad-based state/Federal/tribal/private regional effort that includes  
4 water, hydroelectric power, and wildlife management agencies in Arizona, California, and  
5 Nevada. The LCR MSCP works toward the recovery of threatened and endangered species,  
6 including the flycatcher, through habitat and species conservation. The habitat-based program  
7 aims to reduce the likelihood of additional species listings under the ESA, while accommodating  
8 current water diversions and power production and optimizing opportunities for future water and  
9 power development. The program is planned for implementation over a 50-year period to  
10 address future Federal agency consultation needs under the ESA section 7 and non-Federal  
11 agency needs for endangered species incidental take authorization approval under ESA, section  
12 10.

13 The Habitat Conservation Plan (HCP) for the LCR MSCP funds projects to maintain existing  
14 habitat for listed species (including the flycatcher), restore 8,132 acres of native riparian/riverine  
15 habitats, implement population enhancement measures, conduct monitoring and research  
16 necessary to assess and improve conservation measure effectiveness, and initiate a variety of  
17 other conservation measures. The planning area encompassed by the HCP consists of over 450  
18 miles of the Colorado River corridor, from the full pool elevation of Lake Mead south to the  
19 International Boundary with Mexico, including the lower reaches of the Virgin River, Muddy  
20 River (Nevada), Bill Williams River (Arizona), and Gila River (Arizona).

21 In addition, there are various other HCPs and habitat management plans in place throughout the  
22 29 proposed Management Units, and a nearly-completed Safe Harbor Agreement. These are  
23 listed in Table 4 of the proposed rule (76 FR 50582), as they are the basis for proposed  
24 exclusions under Alternative B.

25 **LAND USE**

26  
27 In the proposed rule designating critical habitat, the Service describes its methodology for  
28 identifying and mapping land areas that are considered part of the riparian zone for critical  
29 habitat designation. In relevant part the rule states, “Riparian developed areas, as defined below,  
30 are not included in our proposed critical habitat designation since these areas do not contain the  
31 primary constituent elements ... are not considered essential to the conservation of the flycatcher  
32 and, therefore, do not meet the definition of critical habitat” (76 FR 50557). Riparian developed  
33 areas include “all developed areas, such as urban and suburban development, agriculture,  
34 utilities, mining, and extraction” (76 FR 50557). Due to the limits of land use data collection and  
35 mapping, some of the acreages and locations included in summary definitions of critical habitat  
36 may include such developed areas, but the Service further states that “Any such developed lands  
37 left inside critical habitat boundaries shown on the maps of this proposed rule have been  
38 excluded by text in the proposed rule and are not proposed for designation as critical habitat.”  
39 Subject to the caveat expressed above, Table 3.3 provides the approximate acreages for principal  
40 land uses for Alternatives A and B.

**Table 3.3 Approximate Acres (ha) by Land Use Throughout Proposed Designation**

<i>Land Use</i>	<i>Alternative A</i>		<i>Alternative B</i>	
	<i>Acres</i>	<i>Hectares</i>	<i>Acres</i>	<i>Hectares</i>
Developed, Open Space	4,388	1,776	2,684	1,086
Developed, Low Intensity	3,629	1,469	2,030	822
Developed, Medium Intensity	725	294	390	158
Developed, High Intensity	859	347	573	232
Quarries, Mines, Gravel Pits and Oil Wells	13	5	3	1
Cultivated Cropland	77,999	31,565	19,369	7,838
Pasture/Hay	2,444	989	1,214	491
Aquatic (any open water--fresh or brackish--including lakes, streams, canals, ponds, etc.)	92,241	37,329	22,476	9,096
Sparse and Barren	9,758	3,949	6,165	2,495
Forest and Woodland	11,954	4,838	5,884	2,381
Shrubland	127,189	51,472	77,976	31,556
Grassland	5,794	2,345	3,102	1,255
Recently Disturbed or Modified	49,623	20,082	17,899	7,243
Riparian and Wetland	152,957	61,899	81,252	32,881

Source: USGS, National Biological Information Infrastructure, Gap Analysis Program. February 2010. National Land Cover Gap Analysis Data. Accessed Oct 2011:  
<http://dingo.gapanalysisprogram.com/landcoverv2/DownloadData.aspx>

**Definitions for Developed Classifications:**

Developed, Open Space--areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.

Developed, Low Intensity--areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.

Developed, Medium Intensity--areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.

Developed High Intensity--highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.

**Consultations Since Previous Designation**

Since 2005, formal consultations related to proposed land use and management actions with the potential to adversely impact flycatcher critical habitat have occurred with the USACE, BOR, FHWA, USFWS, NPS, and BLM. The states involved included Arizona, California, Colorado, Utah, Nevada, and New Mexico. For example, in 2009 a formal consultation occurred with

1 BLM for the renewal of four livestock grazing permits in southwestern willow flycatcher habitat  
2 in Meadow Valley Wash in Lincoln County, Nevada. USFWS issued a “no jeopardy” decision,  
3 concluding that while the proposed action would likely result in incidental take of the flycatcher,  
4 the proposed project would not jeopardize the flycatcher (Service, 2009).

5 Following a 2007 consultation requested by BLM for the Arizona Strip Resource Management  
6 Plan in the Hoover-to-Parker Management Unit in Arizona, the Service issued a biological  
7 opinion that stated that proposed recreation and vegetation management plans would result in the  
8 failure of one flycatcher nesting attempt every three years (Service 2007).

9 One of the most recent consultations to occur in the areas evaluated in this EA pertained to land  
10 use changes proposed by the U.S. Army Corps of Engineers (USACE) to improve riparian  
11 habitat in the Apache Grove in the Upper Gila Management Unit in Greenlee, Arizona. The  
12 Service stated within the Biological Opinion issued for this project that the proposed activities  
13 would result in an incidental take of all flycatchers within a 28-29 acre span over the five-year  
14 project period (Service 2011b). Conservation measures proposed by the action agency and  
15 included in the Biological Opinion directed vegetation removal activities to occur prior to the  
16 nesting season and directed that the floodplain along which proposed activities would occur be  
17 broadened to ultimately increase flycatcher nesting habitat. The Service concluded that the  
18 proposed project activities would be unlikely to jeopardize the continued existence of the  
19 southwestern willow flycatcher, since the habitat would be restored and again functional within  
20 five years.

### 21 **3.2.2 Environmental Consequences**

22 Federal land management activities subject to formal section 7 consultations that could cause  
23 adverse effects to the flycatcher occur throughout the management units. Activities include  
24 habitat construction, road construction, land management and planning, land exchange, pesticide  
25 and herbicide use, forest management plan activities, and resource management plan activities.  
26 Parts of these lands are also subject to groundwater pumping, surface water diversion; river  
27 damming and water storage; livestock grazing and management; fire suppression; road/bridge  
28 construction and maintenance; mining; agriculture; flood control; vegetation removal; recreation  
29 developments and activities including off-road vehicle use; trail development; campground;  
30 hiking use and other effects.

#### 31 **3.2.2.1 No Action**

32 Under the No Action Alternative, no changes would be made to the 2005 designation of critical  
33 habitat. The section 7 consultation process would continue as presently conducted without the  
34 additional 38 percent increase in Management Units and 44 percent increase in stream miles of  
35 critical habitat. The number of potential consultations would continue to be the same as under  
36 current conditions and these consultations would also encourage conservation measures BMPs  
37 that enhance and maintain healthy and native riparian ecosystems.

38 Section 7 consultations would continue to analyze relevant land, resource and fire management  
39 plans on Federal, state, tribal, private, and unclassified lands currently occupied by the species  
40 and previously designated. These consultations would include, as they do now, analyses of both

1 jeopardy to the species and adverse modification of critical habitat. As they relate to the broad  
2 category of land use and management, such consultations would likely include the entire list of  
3 activities identified in Table 3.1.

4 Flycatcher habitat that is currently included in and protected by HCPs throughout the  
5 management units would not change. Land management protections identified in these HCPs  
6 include conservation measures such as:

- 7 • Annual monitoring of population levels and distributions of the flycatcher;
- 8 • Incorporating survey data into the GIS species distribution database to utilize in  
9 conservation awareness and education programs;
- 10 • Control of exotic vegetation and animals that could impact flycatcher habitat;
- 11 • Programmatic instructions that limit impacts to flycatcher and its habitat; and
- 12 • Monitoring groundwater levels and basin withdrawals managed to avoid degradation and  
13 loss of habitat quality.

14  
15 Therefore, the No Action Alternative would not result in any additional or expanded  
16 consultations and, as such, would not have any incremental impacts on land use and management  
17 beyond those impacts that currently occur from the 2005 critical habitat designations for the  
18 southwestern willow flycatcher and associated requirements of section 7 of the ESA.

### 19 **3.2.2.2 Alternative A**

20 Under Alternative A, additional stream segments have been proposed as critical habitat  
21 compared to the existing 2005 designation (these are identified in section 2.3).

#### 22 *Newly Proposed Land*

23 There is an overall increase in the amount of stream miles proposed in 2011 compared to that  
24 designated in 2005. All new land proposed for critical habitat riparian designation includes  
25 plants species that flycatchers can use for nesting, perching, cover, and foraging. The land uses  
26 of newly designated areas include the following:

- 27 • Santa Clara Management Unit in the Coastal California Recovery Unit (CA), which  
28 contains part of the Los Padres National Forest (managed by the U.S. Forest Service),  
29 and unclassified land;
- 30 • Amargosa Management Unit in the Basin and Mojave Recovery Unit (CA and NV),  
31 which contains the Mojave National Preserve, managed by the U.S. Forest Service, other  
32 Forest Service land, BLM land, and the Ash Meadows National Wildlife Refuge;
- 33 • Hassayampa/Agua Fria, Santa Cruz, and San Francisco Management Units in the Gila  
34 Recovery Unit (AZ and NM), which contains portions of the Gila River and consists  
35 primarily of Forest Service land in the Sitgreaves National Forest, along with private  
36 land, some tribal land, land owned by the State of Arizona, BLM land in the Las  
37 Cienegas National Conservation Area (NCA), and land managed by the Bureau of  
38 Reclamation,
- 39 • Powell and San Juan Management Units in the Upper Colorado Recovery Unit (AZ, UT,  
40 CO, NM), which contains habitat along the Paria and Los Pinos Rivers and consists

1 primarily of private land and tribal land, including the Navajo Indian Reservation and the  
2 Southern Ute Indian Reservation; and

- 3 • Lower Rio Grande Management Unit in the Rio Grande Recovery Unit (NM and CO),  
4 which consists primarily of private land, Federal land, and land managed by the State of  
5 New Mexico within the Leasburg Dam State Park.

6 The streams or portions of streams which are being newly proposed as critical habitat and where  
7 flycatcher territories have been detected from 1991-2010 are the following (this is a subset of  
8 Table 2.4):

- 9 • Santa Ynez (upper segments) (Santa Ynez Management Unit);
- 10 • Piru Creek, San Gabriel River, and Santa Clara River (Santa Clara Management Unit);
- 11 • Bautista Creek (Santa Ana Management Unit);
- 12 • Canada Gobernadora (San Diego Management Unit);
- 13 • Canebrake Creek (Kern Management Unit);
- 14 • Amargosa River, Ash Meadows Riparian Areas, and Carson Slough (Amargosa  
15 Management Unit);
- 16 • Rio Nutria and Zuni River (Little Colorado Management Unit);
- 17 • San Juan River and Los Pinos River (San Juan Management Unit);
- 18 • Pinal Creek (Roosevelt Management Unit);
- 19 • Cienega Creek (Santa Cruz Management Unit);
- 20 • San Francisco River (San Francisco Management Unit);
- 21 • Hassayampa River and the lower Gila River (Hassayampa and Agua Fria Management  
22 Unit);
- 23 • Rio Fernando (Upper Rio Grande Management Unit); and
- 24 • Lower Rio Grande (Lower Rio Grande Management Unit).

25 Lands designated as critical habitat in the 2005 rule but which are not part of the proposed 2011  
26 rule include, but are not limited to, the East Fork Little Colorado River in Arizona and the  
27 northern portion of Middle Rio Grande on Isleta Pueblo in New Mexico. In general, these lands  
28 feature long stretches of canyons or other portions of rivers that are known to lack the physical or  
29 biological features that provide habitat for the southwestern willow flycatcher. Removal of  
30 critical habitat designation in these areas may avoid future consultations.

### 31 *New and Reinitiated Consultations*

32 The same Federal agencies listed in Table 3.1 are also anticipated to be the primary agencies that  
33 would consult with the Service under section 7 on flycatcher critical habitat. Consultation would  
34 continue to primarily involve actions occurring within floodplains that could impact riparian  
35 habitat and stream function (these actions are also listed in the proposed rule (76 FR 50577-  
36 50578)). Activities that are anticipated to undergo evaluation and consultation with the proposed  
37 revision of flycatcher critical habitat are no different than those that have previously occurred  
38 throughout flycatcher consultation history. It is anticipated, however, that some Federal agencies  
39 with responsibilities in specific flycatcher Management Units would now consider consultation  
40 on flycatcher habitat where it may have only been rarely addressed in the past.

1 Because of the similarities between the flycatcher habitat described in the 2011 proposal and the  
2 2005 critical habitat designation, the Service believes that projects already evaluated for critical  
3 habitat effects are not anticipated to need to re-initiate consultation.

4 Because of the current wide distribution of the flycatcher, its ability to move its nesting sites  
5 from one season to the next, the dynamic aspect of its habitat, and its migratory nature, most of  
6 the Management Units and stream segments proposed as critical habitat in 2011 have had  
7 flycatcher territories detected within them since 1991. Flycatcher territories have been detected  
8 in parts of 28 of the 29 Management Units and along 68 of the 80 streams (78 percent) now  
9 proposed as critical habitat. Because of these detections, agencies are more aware of the  
10 presence of the flycatcher, the presence of migratory flycatchers, the ability of habitat to hold  
11 territories, and survey habitat for flycatchers when appropriate in order to evaluate upcoming  
12 projects.

13 Therefore, while flycatchers or flycatcher habitat were known to occur in these areas in the past  
14 and may have undergone some section 7 consultation, they are now being proposed as critical  
15 habitat, which may trigger new consultation efforts for proposed Federal actions or reinitiated  
16 consultation for ongoing Federal actions.

17 In addition to the potential impacts described above on newly designated stream segments,  
18 incremental impacts could also occur if designation causes agencies to be more aware of the  
19 importance of these and other stream segments to flycatcher for recovery. The overall  
20 Management Unit (even streams not proposed or designated as critical habitat) might receive  
21 more agency awareness and therefore consultations with the Service on actions they may have  
22 previously neglected. These additional consultations could constitute a moderate increase. The  
23 Management Units these streams occur within are the Santa Ynez, Santa Clara, Santa Ana, San  
24 Diego, Kern, Amargosa, Little Colorado, San Juan, Roosevelt, Santa Cruz, San Francisco,  
25 Hassayampa/Agua Fria, upper Rio Grande, and lower Rio Grande.

26 Another incremental effect of critical habitat is anticipated when completing consultations for  
27 projects occurring along stream segments where flycatcher territories have not yet been detected.  
28 These stream segments are listed in Table 2.1. Within these particular stream segments  
29 (representing about 4 percent of the total stream miles proposed), unless flycatcher territories are  
30 detected, evaluation of projects for the flycatcher might not occur without the designation of  
31 flycatcher critical habitat. Many of these segments have not been thoroughly surveyed for  
32 flycatcher territories in the past.

33 The Powell Management Unit, where a segment of the Paria River in southeast Utah (Upper  
34 Colorado Recovery Unit) is proposed for critical habitat designation, is the only Management  
35 Unit throughout the flycatcher's range where territories have not yet been detected since recent  
36 monitoring (post-1991). The BLM is the primary land manager in this area. Designation of  
37 critical habitat along the Paria River is expected to result in new consultations. It is anticipated  
38 that land uses such as cattle grazing/management and recreation could be evaluated in this area.  
39 The proposed stream segment is approximately 1.8 km (3 mi) south of another portion of the  
40 river that is being considered for designation as a Wild & Scenic River. Also, as described  
41 above, designation of critical habitat could generate increased awareness (and thus an  
42 incremental effect of additional surveys and project evaluation) for the overall importance of the

1 Powell Management Unit to flycatcher recovery. This increased awareness could also stimulate  
2 surveys and project evaluation in other areas not designated as critical habitat.

### 3 *Addition of Adverse Modification Analysis to Future Consultations*

4 Based on the potential increase in consultations resulting from new areas proposed as critical  
5 habitat (described in the section above), the Service anticipates some increase in overall  
6 consultation workload and administrative efforts. This increase is likely to be moderate,  
7 because a long history of consultation on this species and the existence of a Recovery Plan  
8 provide the Service and Federal action agencies some certainty as to what to expect under  
9 consultations both for analysis and avoidance of jeopardy and adverse modification.

10 The amount of increased administrative effort due to proposed critical habitat is difficult to  
11 foresee and quantify. On a broad scale, based on the overall increase in the amount of  
12 proposed critical habitat, there could be a 35 to 45 percent increase in critical habitat  
13 evaluations included in formal consultations. This effort of course will depend on the nature  
14 and complexity of any future consultation. Overall, the Service does not anticipate a substantial  
15 number of consultations that would result in adverse modification and, therefore, does not  
16 anticipate a substantial increase in administrative effort to work on measures to avoid adverse  
17 modification.

18 However, for those proposed critical habitat areas where the flycatcher is known to have only a  
19 few or no territories and there are few critical habitat areas being proposed in a given  
20 Management Unit, there is some increased likelihood that a proposed action could result in  
21 adverse modification without resulting in jeopardy. This is based on the fact that any  
22 substantial reduction in the conservation value of a proposed critical habitat segment in a  
23 Management Unit with few or no territories could potentially result in an adverse modification  
24 without reaching jeopardy. This would cause an increase in administrative efforts to develop  
25 measures to avoid the adverse modification. Because flycatcher recovery goals are established  
26 by Management Unit, the Management Units with the fewest territories have an increased  
27 possibility of an adverse modification finding where a finding of jeopardy would be unlikely  
28 (Salton, Amargosa, San Juan, PowellPowell, Santa Cruz, San Francisco, Hassayampa/Agua  
29 Fria, and lower Rio Grande Management Units).

30 An incremental effect of the critical habitat designation could occur under the following  
31 scenarios (not all mutually exclusive): (1) an increased workload for action agencies and the  
32 Service to conduct re-initiated consultations for ongoing actions in new designated areas where  
33 flycatchers have been detected; (2) completing consultations for new projects occurring along the  
34 12 stream segments where flycatcher territories have not yet been detected (post-1991); (3) new  
35 consultations from project proponents that previously did not consult due to a lack of awareness  
36 of the recovery goals for some river segments in management units where territories are known;  
37 and (4) possible project modifications to avoid adverse modification of critical habitat in areas  
38 where a significant alteration of habitat is proposed.

39 In summary, the incremental effects of the designated critical habitat for the flycatcher are  
40 expected to be moderate (less than significant). Incremental effects would be limited by the  
41 relatively large overlap this revision has with the existing designation and the current abundance  
42 and broad distribution of nesting and migrating flycatchers. Overall, there is about a 30 percent

1 increase in river miles where an incremental effect of the current revision could occur, compared  
2 to the 2005 flycatcher critical habitat designation. Consultation would primarily involve actions  
3 occurring within floodplains that could impact riparian habitat and stream function.

#### 4 **3.2.2.3 Alternative B**

5 Within the flycatcher proposed critical habitat rule and subsequent revision, there are short  
6 narratives describing about 45 management plans, conservation plans, or conservation  
7 partnerships (76 FR 50584-50594 and **XX FR XXXXXX**) considered for exclusion from critical  
8 habitat. These plans represent HCPs, State Wildlife Areas, Tribal Land Management, private  
9 land easements, and a nearly completed Safe Harbor Agreement that are expected to provide a  
10 conservation benefit to the flycatcher. Alternative B would exclude approximately 1,464 km  
11 (910 mi) of proposed stream segments from critical habitat designation when compared with  
12 Alternative A.

13 Designation of critical habitat under this alternative would decrease the number of re-initiated  
14 section 7 consultations for land management activities and decrease the number of additional  
15 section 7 consultations, when compared to Alternative A. The impacts to flycatcher Physical and  
16 Biological Features and Primary Constituent Elements within designated critical habitat and in  
17 areas managed under HCPs and other plans related to flycatcher protection would be the same as  
18 described under Alternative A, because these areas employ equivalent flycatcher conservation  
19 measures.

20 The exclusions of these lands from the proposed critical habitat designation could reduce the  
21 administrative costs of designation on land management activities in these areas by requiring  
22 fewer consultations. The overall impacts on land management would be less than those in  
23 Alternative A and would be characterized as minor.

24 In summary, the action alternatives would: (1) increase the number of re-initiated ESA section 7  
25 consultations for ongoing projects in newly proposed areas where flycatchers have been  
26 detected; (2) increase the number of additional section 7 consultations for proposed projects  
27 affecting newly designated critical habitat on tribal lands; (3) maintain southwestern willow  
28 flycatcher critical habitat Physical and Biological Features and Primary Constituent Elements on  
29 tribal lands; (4) increase the likelihood of greater expenditures of time and Federal funds of  
30 government agencies to develop measures to prevent both adverse effects and adverse  
31 modification to maintain critical habitat on tribal lands; and (5) increase the likelihood of greater  
32 expenditure of non-Federal funds by project proponents to complete section 7 consultations and  
33 to develop reasonable and prudent alternatives (as a result of adverse modifications) to maintain  
34 designated critical habitat. The revision of the flycatcher critical habitat designation is not  
35 expected to impose land use restrictions or prohibit land use activities. The exception may be  
36 those rare instances of adverse modification that could occur in management units with few  
37 flycatcher territories, where jeopardy is unlikely but adverse modification could occur.

## 1 **3.3 Vegetation**

### 2 **3.3.1 Existing Conditions**

3 Breeding flycatchers require dense, mesic (i.e., moist soil condition), shrub and/or tree  
4 communities 0.25 acres or larger with floodplains large enough to accommodate riparian patches  
5 at least 30 feet wide (Service 2005a). These conditions are required in order to support the insect  
6 populations upon which the flycatcher feeds, and to provide suitable breeding and nesting cover  
7 and habitat structure. These conditions can be met at a wide variety of elevations with  
8 corresponding variations in vegetation and plant species and, due to the variability of  
9 hydrological conditions in the Southwest, water availability at a site may range from flooded to  
10 dry over the course of a breeding season or from year to year (Sogge et al. 2010). Vegetation  
11 structure is very important for Flycatcher breeding habitat and for simplicity, vegetation for  
12 breeding flycatchers can be divided into three broad types: native vegetation-dominated habitat  
13 (native broadleaf), exotic vegetation-dominated habitat, and mixed native/exotic vegetation-  
14 dominated habitat (USFS 2000; Sogge et al. 2010). Since completion of the Recovery Plan,  
15 additional segments of substantial recovery value have been identified through continued survey,  
16 analysis, and habitat evaluation, and are included in this proposal when needed to reach recovery  
17 goals. The distribution and abundance of territories and habitat within each proposed segment  
18 are expected to shift over time as a result of natural disturbance events such as flooding that  
19 reshape floodplains, river channels, and riparian habitat (Service 2005a). It should be noted that  
20 migrating flycatchers are detected in riparian habitats or patches that would be unsuitable for  
21 breeding (e.g., the vegetation structure is too short or sparse, or the patch is too small). Such  
22 migration stopover areas, even though they not used for breeding, are critically important  
23 resources affecting productivity and survival.

24 A summary description of the vegetation of each management unit is found below, and a detailed  
25 description of each management unit location can be found in the proposed rule (76 FR 50542-  
26 50629). More detailed descriptions of vegetation can be found in the U.S. Forest Service  
27 technical report titled “Status, Ecology, and Conservation of the Southwestern Willow  
28 Flycatcher” (USFS 2000).

29 *The Coastal California Recovery Unit* (Santa Ynez, Santa Clara, Santa Ana, and San Diego  
30 Management Units), stretches along the coast of southern California from just north of Point  
31 Conception south to the Mexico border (76 FR 50562). Flycatcher breeding habitat is native or  
32 native-dominated vegetation, typically comprising a low- to mid-elevation mixture of trees and  
33 shrubs. These sites range from single plant species to mixtures of native broadleaf trees and  
34 shrubs including (but not limited to) Goodding’s (*Salix gooddingii*) or other willow species,  
35 cottonwood (*Populus* spp.), boxelder (*Acer negundo*), ash (*Fraxinus* spp.), alder (*Alnus* spp.),  
36 and buttonbush (*Cephalanthus occidentalis*) (Service 2002).

37 *The Basin and Mohave Recovery Unit* (Owens, Kern, Mohave, Amargosa, and Salton  
38 Management Units) forms a broad geographic area that includes the arid interior lands of  
39 southern California and a small portion of extreme southwestern Nevada. All flycatcher  
40 territories are native or native-dominated riparian habitats. This region includes low- to mid-  
41 elevation vegetation similar to the Coastal California Recovery Unit, but surrounded by arid  
42 desert. These riparian areas are somewhat dominated by red willow (*Salix laevigata*) and

1 Goodding willow (*Salix gooddingii*), interspersed with areas dominated by nettles (*Urtica*  
2 *dioica*), cattails (*Typha* spp.), and bulrush (*Scirpus* spp.) (Service 2002).

3 *The Lower Colorado Recovery Unit* (Little Colorado, Middle Colorado, Virgin, Pahranaगत, Bill  
4 Williams, Hoover to Parker, and Parker to Southerly International Border Management Units) is  
5 geographically large and ecologically diverse. It includes the Colorado River and its major  
6 tributaries from Glen Canyon Dam downstream to the Mexican border. Critical habitat  
7 vegetation characteristics range from pure native stands (including high-elevation and low  
8 elevation willow) to exotic-dominated stands that are predominantly tamarisk (*Tamarisk* spp.)  
9 and Russian olive (*Elaeagnus angustifolia*) (Service 2002).

10 *The Upper Colorado Recovery Unit* (San Juan and Powell Management Units) covers much of  
11 the Four Corners area of southeastern Utah and southwestern Colorado, with smaller portions of  
12 northwestern Arizona and northeastern New Mexico. Ecologically, this area may be an  
13 intergradation area between the southwestern willow flycatcher subspecies and the Great Basin  
14 willow flycatcher subspecies (Service 2002; 76 FR 50570). Much willow riparian habitat occurs  
15 along drainages within this Recovery Unit and remains to be surveyed (Service 2002). Most  
16 high elevation sites (1,900m and above) are dominated by a single species of willow, such as  
17 Coyote willow (*Salix exigua*) or Geyer's willow (*Salix geyeriana*) (USFS 2000).

18 *The Gila Recovery Unit* (Verde, Roosevelt, Middle Gila/San Pedro, Upper Gila, Santa Cruz, San  
19 Francisco, Hassayama and Agua Fria Management Units) includes the Gila River watershed,  
20 from its headwaters in southwestern New Mexico downstream to near the confluence with the  
21 Colorado River in southwest Arizona (Service 2002). Critical habitat vegetation within this unit  
22 is composed of approximately 60% native-dominated stands, with exotic-dominated  
23 (predominantly tamarisk) or mixed native-exotic stands in the remaining critical habitat stands.  
24 Within the Gila watershed, flycatcher breeding habitat can be divided into two distinct structural  
25 types: riparian scrub and riparian forest. Riparian scrub is dominated by scrubby willows and  
26 seepwillow (*Baccharis glutinosa*) that grow along the river bank or in old flood channels (USFS  
27 2000). Riparian forest habitat is dominated by Fremont cottonwood (*Populus fremontii*),  
28 tamarisk, Goodding's willow, Arizona sycamore (*Plantanus wrightii*), and boxelder with an  
29 understory of the same tree species (USFS 2000).

30 *The Rio Grande Recovery Unit* (San Luis Valley, Upper Rio Grande, Middle Rio Grande, and  
31 Lower Rio Grande Management Units) encompasses the Rio Grande watershed, from its  
32 headwaters in southwestern Colorado downstream to the Pecos River confluence in southwestern  
33 Texas. Habitat vegetation within this unit is primarily native-dominated, but some exotic-  
34 dominated stands are present, including Russian olive and tamarisk.

### 35 *Exotic Vegetation*

36 Exotic, introduced, or alien plants are those species that have become recently established in a  
37 new ecosystem as a result of human activity or intervention. When these exotic species  
38 naturalize, they spread widely and rapidly and are referred to as invasive; they can have adverse  
39 impacts on native ecosystems. These adverse impacts include a decrease in ecosystem plant  
40 species diversity by replacing or reducing the number of native plant species, and thus reducing  
41 the quality of habitat, as well as a loss or reduction of ecosystem functions when native plant  
42 species are eliminated or reduced. Riparian habitats are typically dynamic ecosystems,

1 characterized by flood flows that sporadically inundate and smother existing plants, redistribute  
2 sediment, and alter stream morphology. As such, they tend to be susceptible to the spread of  
3 invasive, exotic plants, which are often favored by surface disturbances (Service 2005a).

4 While some exotic plants are strongly inferior to native wildlife species, the stands of two non-  
5 native exotic species, tamarisk (aka saltcedar; *Tamarix ramosissima*) and Russian olive  
6 (*Eleagnus angustifolia*), provide the vegetation structure used by breeding flycatchers as well as  
7 habitat used by non-breeding, dispersing, territorial, and migrating flycatchers. Forty-seven  
8 percent of willow flycatcher territories occur in mixed native/exotic habitat (> 10% exotic) and  
9 twenty-five percent are at sites where tamarisk is dominant (Service 2002). Tamarisk is a much  
10 more prevalent invasive than Russian olive within flycatcher habitat, and 86% of nests in mixed  
11 and exotic nest substrates are in tamarisk. It is a native of Eurasia that was introduced as an  
12 ornamental and stream bank stabilizer. While found in most Recovery Units, tamarisk is more  
13 common along the Colorado River and its tributaries, and is especially prevalent in the Upper  
14 Colorado, Lower Colorado and Rio Grande Recovery Units. Although tamarisk can provide  
15 good habitat for the flycatcher, it has replaced native vegetation in many streams in the  
16 Southwest and is generally considered to use more water than native vegetation (Shafroth et al.  
17 2008).

18 Tamarisk also produces dry leaf, stem, and branch litter that do not decay quickly, creating  
19 conditions that can increase fire hazards and alter natural fire regimes (see Section 3.6, Fire  
20 Management). Tamarisk has been hypothesized to cause increased water and soil salinity by  
21 accumulating salt in the leaves, which are shed and form a layer of salty debris. It also uses  
22 more water than comparable native vegetation, which results in decreased amounts of water in  
23 streams. The dry brush litter that does not decay quickly increases fire frequency and severity.  
24 In addition, recent evidence points to altered water regimes from actions such as damming,  
25 diversion, and groundwater pumping that favor tamarisk over native species by creating  
26 landscape conditions that simultaneously allow tamarisk to persist and prevent native trees from  
27 flourishing. This means that anthropogenic factors are creating an environment in which  
28 tamarisk thrives and native vegetation cannot prosper (Stromberg et al. 2009; University of  
29 Arizona, 2008; Shafroth et al. 2008). Recent research shows that the salt-tolerant tamarisk grows  
30 well in high salinity environments, and is incidentally found there because of its salt tolerance  
31 (Glenn & Nagler, 2005), rather than itself increasing the salinity of soils. These saline soils are  
32 caused by land management practices that prevent regular overbank flooding (Glenn & Nagler,  
33 2005).

34 Depending on its prevalence and the management strategy, removal of tamarisk can alter the  
35 current water regime and habitat. Where tamarisk forms a monoculture of vegetation in the  
36 structure and height used by the flycatcher, removal would impact the flycatcher by removing all  
37 available nesting and roosting sites. The Service's 2002 Recovery Plan discusses the invasive  
38 nature of tamarisk and references a study by Sferra et al. (2000) that shows equivalent nest  
39 productivity between tamarisk-dominated and native-dominated sites (Service 2002). A 2005  
40 study by Sogge et al. indicates that habitat structure is more important to the flycatcher than the  
41 tree species composition: flycatchers were found to favor stands with dense structure, high  
42 canopy cover, and tall stature, and to avoid shorter sparser stands, regardless if they were  
43 composed of native or nonnative vegetation. Because the flycatcher breeds across a very diverse  
44 climate range, the vegetation composition of suitable habitat within that range varies greatly and

1 the presence or absence of tamarisk may not be indicative of habitat preference in any given  
2 landscape (Sogge et al. 2005).

3 Tamarisk is considered an invasive plant by the USDA and management plans have been created  
4 by numerous states and agencies, including the NPS, USFS, Colorado State Parks, Colorado  
5 Department of Natural Resources, the Missouri River Watershed Coalition, and the New Mexico  
6 Department of Agriculture, and a multi-agency group was formed called The Saltcedar  
7 Biological Control Consortium. In 2004 a saltcedar conference was held to develop a strategic  
8 regional approach for managing saltcedar and the Salt Cedar and Russian Olive Control  
9 Demonstration Act (7 USC 7781) was passed in 2006 to preserve in-stream water resources and  
10 develop a research and demonstration program to eradicate tamarisk and Russian olive. The bill  
11 directed the Secretary of the Interior to work with other federal agencies and complete an  
12 assessment of the extent of infestations and undertake eradication demonstration projects and  
13 analyze possible beneficial uses of the resulting biomass (USDA, 2005). Subsequently, the  
14 USDA developed an EA reviewing the environmental impacts of releasing the tamarisk  
15 defoliating leaf beetle in the western U.S. (USDA 2005).

16 The U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service  
17 (APHIS) allowed the release the non-native tamarisk-defoliating leaf beetle (*Diorhabda*  
18 *elongata*) as a biological control agent of tamarisk from the years 2005 to 2010. These beetles  
19 were permitted for release after assurances from APHIS that no beetles would be released within  
20 200 miles of flycatcher habitat and that beetles could not become established within the  
21 documented range of the flycatcher (south of the 38°N latitude) (APHIS 2009). The Center for  
22 Biological Diversity brought a lawsuit to APHIS for not reinitiating consultation when research  
23 showed successful adaption of the beetle as far south as 32°N latitude and defoliation of sites  
24 occupied by breeding flycatchers; APHIS responded by re-initiating consultation (APHIS 2009).  
25 In June of 2010 APHIS announced that it would no longer permit the release of the leaf beetle  
26 because of concerns about the potential impacts to the flycatcher (APHIS 2010). However, there  
27 is concern that the previously-released beetle populations will move from their existing locations  
28 at the perimeter of the flycatchers breeding range into the areas where most territories occur.

29 The Recovery Plan states:

30 Tamarisk eradication can be detrimental to willow flycatchers in mixed and exotic  
31 habitats, especially in or near occupied habitat or where restoration is unlikely to be  
32 successful. Risks to the flycatcher increase if the tamarisk control projects are  
33 implemented in the absence of a plan to restore suitable native riparian plant species or if  
34 site conditions preclude the re-establishment of native plant species of equal or higher  
35 functional value. Threats also increase if the eradication projects are large-scale in  
36 nature, thus possibly setting the stage for large-scale habitat loss. (Service 2002).

### 37 *Federal Threatened and Endangered Plant Species*

38 The plant species that are listed as endangered or threatened by the USFWS (or are proposed or  
39 candidates for listing) and that are likely to occur in the proposed critical habitat management  
40 units are listed in Table 3.4.

1 Of the listed species that could occur, 23 wildlife species and 9 plant species have critical habitat  
 2 that overlap with proposed flycatcher critical habitat. This represents about 22.6% of the total  
 3 proposed flycatcher designation, and about 1100 stream miles (1770 km).

4 **Table 3.4 Federally Listed or Candidate Plant Species that Could Occur in**  
 5 **Flycatcher Recovery Units and Proposed Critical Habitat**

Common Name	Scientific Name	Status*	Recovery Units					
			CC	BM	LC	UP	G	RG
Amargosa niterwort	<i>Nitrophila mohavensis</i>	T		X				
Ash Meadows gumplant	<i>Grindelia fraxinopratenensis</i>	T		X				
California Ocutt grass	<i>Ocuttia californica</i>	E	X		X			
California taraxacum	<i>Taraxacum californicum</i>	E	X		X			
Canelo Hills ladies'-tresses	<i>Spiranthes delitescens</i>	E					X	
Gambel's watercress	<i>Rorippa gamellii</i>	E	X		X			
Huachua water-umbel	<i>Lilaeopsis schaffneriana var recurva</i>	E					X	
La Graciosa thistle	<i>Cirsium loncholepis</i>	E	X					
Marsh sandwort	<i>Arenaria paludicola</i>	E	X					
Navajo sedge	<i>Carex specuicola</i>	C				X	X	
Nevin's barberry	<i>Berberis nevinii</i>	E	X		X			
Pecos sunflower	<i>Helianthus paradoxus</i>	T			X			X
Pedate checker-mallow	<i>Sidalcea pedata</i>	E	X		X			
San Diego button-celery	<i>Eryngium aristulatum car parishii</i>	E	X		X	X		
San Diego thornmint	<i>Acanthomintha ilicifolia</i>	T	X					
Slender-petaled mustard	<i>Thelypodium stenopetalum</i>	E	X		X			
Spreading navarretia	<i>Navarretia fossalis</i>	T	X		X			
Spring-loving century	<i>Centaurium namophilum</i>	T		X				
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	T	X		X			
Ute's ladies-tresses	<i>Spiranthes diluvialis</i>	T			X			
Ventura marsh milk-vetch	<i>Astragalus pycnostachyus var. lanosissimus</i>	E	X					
Willow monardella	<i>Mondardella linoides ssp. Viminea</i>	E	X					
Wright's marsh thistle	<i>Cirsium wrightii</i>	C						X

6 \* Federal Status Abbreviations  
 7 E = Endangered; T = Threatened; PE = Proposed Endangered; C = Candidate Taxon, Ready for Proposal; XN =  
 8 Experimental,  
 9 Non-essential Population (may apply in only a portion of a species' range)

10 *Consultations Since Previous Designation*

11 Consultations about the flycatcher regarding vegetation generally occur for fire management  
 12 activities (addressed in Section 3.5), land management plans (such as habitat conservation plans,

1 or grazing management, which is covered in Section 3.11) or for exotic/invasive plant  
2 management. Management of salt cedar (mostly by physical removal and use of herbicides) is a  
3 common task in the Southwest and there have been several biological opinions issued by the  
4 Service regarding specific plans. Bureau of Land Management (BLM) salt cedar control  
5 includes best management practices (BMPs) and consultation on these projects has resulted in a  
6 finding of no jeopardy (Service 2008; Service 2005b). These BMPs include activities such as  
7 only using herbicide treatments outside of the flycatcher breeding season, applying to treatments  
8 outside of known breeding habitat, and by replacing saltcedar with native vegetation for no net  
9 loss of riparian habitat (Service 2008; Service 2005b).

10 In 2005 the Service issued a programmatic Biological Opinion (BO) (Service 2005c) addressing  
11 the potential impacts of continued implementation of Land and Resource Management Plans  
12 (LRMPs) for 11 National Forests. In reviewing all the aspects of each LRMP within each forest,  
13 the Service was most concerned with the use of insecticides (which would adversely affect PCE  
14 2), herbicides, and other chemical agents, and improper grazing practices (addressed in Section  
15 3.11), fire management (addressed in Section 3.6). The BO resulted in findings of no jeopardy  
16 and of not likely to adversely modify existing critical habitat. The BO did note that certain  
17 actions such as maintaining and restoring riparian habitats, and management of invasive species  
18 such as the brown-headed cowbird, would have beneficial impacts to the flycatcher.

### 19 **3.3.2 Environmental Consequences**

#### 20 **3.3.2.1 No Action Alternative**

21 Under the No Action Alternative, no changes would be made to the 2005 designation of critical  
22 habitat. The section 7 consultation process would continue as presently conducted without the  
23 additional 38 percent increase in Management Units and 44 percent increase in stream miles of  
24 critical habitat. The number of potential consultations would continue to be the same as under  
25 current conditions and these consultations would also encourage BMPs that enhance and  
26 maintain healthy and native riparian ecosystems. As they relate to vegetation, such consultations  
27 would likely include:

- 28 • U.S. Army Corps of Engineers--stream restoration and vegetation management;
- 29 • U.S. Bureau of Land Management--for aquatic habitat restoration, fire suppression, fuel  
30 reduction treatments, resource management plans, and livestock grazing and  
31 management;
- 32 • U.S. Fish & Wild Service—for issuance of ESA section 10 permits for enhancement of  
33 survival, Habitat Conservation Plans, and Safe Harbor Agreements; for national wildlife  
34 refuge planning, for exotic and invasive plant management; and
- 35 • U.S. Forest Service—for aquatic habitat restoration, vegetation management, noxious  
36 weed treatments, fire-management plans, fire suppression, fuel-reduction treatments,  
37 forest plans, and livestock-grazing- allotment management plans.

38  
39 Consequently, this alternative would have no impact on vegetation, including candidate,  
40 proposed, or listed species, beyond those of any conservation measures resulting from the  
41 presence of existing critical habitat and associated requirements of section 7 of the ESA.

1 **3.3.2.2 Alternative A**

2 Under Alternative A, additional stream segments have been proposed as critical habitat  
3 compared to the existing 2005 designation (these are identified in section 2.3).

4 Compared to the No Action Alternative, Alternative A (all proposed units, no exclusions) would  
5 result in (1) an increased workload for action agencies and the Service to conduct re-initiated  
6 consultations for ongoing actions in newly proposed areas where flycatchers have been detected;  
7 (2) completing consultations for new projects occurring along the 12 proposed stream segments  
8 where flycatcher territories have not yet been detected (post-1991); (3) new consultations from  
9 project proponents that previously did not consult due to a lack of awareness of the recovery  
10 goals for some river segments in the management units where southwestern flycatcher territories  
11 are known; and (4) possible project modifications to avoid adverse modification of critical  
12 habitat in areas where a significant alteration of habitat is proposed. Designation would result in  
13 a small, but imprecisely known increase in the number of additional section 7 consultations for  
14 proposed exotic plant management projects affecting the new flycatcher critical habitat units.

15 Increased section 7 consultations would likely have beneficial, conservation-related effects to  
16 PCEs and designated critical habitat except in the cases where exotic vegetation control is  
17 limited by flycatcher use of tamarisk and Russian olive.

18 *New and Reinitiated Consultations*

19 Because impacts to PBFs and PCEs that occur within designated critical habitat stream segments  
20 are closely tied to adverse effects to the flycatcher, activities that would require consultation for  
21 critical habitat are primarily the same as those requiring consultation for the species. The  
22 designation of critical habitat raises awareness of the species presence in an area, and therefore  
23 project proponents who have not requested consultations for actions that may affect the species  
24 may decide to do so.

25 Reinitiated consultations are consultations that have been completed for impacts to the species,  
26 but which might need to be re-opened to consider the likelihood of destruction or adverse  
27 modification to critical habitat. As it relates to vegetation, such consultations could include:

- 28 • Fire Management plans which include vegetation management — BLM, USFS;  
29 • River restoration projects, wetland restoration projects — USACE, USFS; and  
30 • Land management plans, conservation management plans and livestock management  
31 plans— BLM, USACE, USFS, USFWS.

32 Because critical habitat was previously designated in 2005 and because of the similarities  
33 between the 2005 and 2011 PCEs and PBFs, it is not anticipated that projects already evaluated  
34 for critical habitat effects would need to re-initiate consultation.

35 *Addition of Adverse Modification Analysis to Future Consultations*

36 Activities proposed in the 12 units of critical habitat where breeding flycatchers are currently not  
37 known to occur could now trigger consultation due to designation of critical habitat. There will  
38 also be additional consultations for adverse modification, and additional time will be required to  
39 complete consultations that would only have considered effects on the species, which would  
40 increase administrative costs to the Service and to the action agencies. Implementing

1 conservation measures resulting from those additional consultations would also increase costs for  
2 action agencies. Outcomes of consultations for critical habitat could also include reasonable and  
3 prudent alternative alternatives and other conservation measures designed to maintain flycatcher  
4 PCEs. These outcomes cannot be specified in advance; however, based on past consultations  
5 types of additional management actions that may be required include, but are not limited to:

- 6 • Revising management plans;
- 7 • Mapping, surveying, and monitoring flycatcher habitat and preparing survey and  
8 monitoring reports;
- 9 • Modifying or converting occupied breeding habitat dominated by exotic vegetation to  
10 habitat dominated by native vegetation; and
- 11 • Avoid high-severity fire affects.

12  
13 In summary, the effects of critical habitat designation on vegetation are expected to be minor  
14 because: (1) few projects would be subject to new consultations based solely on the presence of  
15 newly designated critical habitat, because 21 of 29 of the proposed units are occupied by the  
16 southwestern willow flycatcher and were designated as critical habitat in 2005; (2) few  
17 additional consultations would be necessary for projects affecting unoccupied areas (the 12 such  
18 newly-designated stream segments), leading to conservation measures and potential additional  
19 project costs and delays; (3) it is unlikely that consultations would be reinitiated for projects that  
20 have previously consulted on critical habitat because of the similarities between the PCEs and  
21 PBFs described in the 2011 proposal and the 2005 critical habitat designation; (4) any reasonable  
22 and prudent alternatives developed under jeopardy analysis would not likely be changed  
23 substantially with the addition of adverse modification analysis in areas occupied by the  
24 flycatcher; (5) though some additional conservation measures may be implemented to avoid  
25 adverse modification above those that would be necessary to avoid jeopardy on proposed critical  
26 habitat segments only sparsely occupied by flycatcher territories, this would likely be limited to  
27 portions of 8 of the 29 Management Units, where such conditions exist. Increased section 7  
28 consultations would likely have beneficial, conservation-related effects to PCEs and designated  
29 critical habitat except in the cases where exotic vegetation control is limited by flycatcher use of  
30 tamarisk and Russian olive.

### 31 **3.3.2.3 Alternative B**

32 Alternative B would exclude approximately 1,464 km (910 mi) of proposed stream segments  
33 from critical habitat designation when compared with Alternative A. When compared with  
34 Alternative A, designation of critical habitat under this alternative would decrease the number of  
35 re-initiated section 7 consultations and the number of new section 7 consultations.

36 Effects to PCEs would be generally the same as for Alternative A, as PCE maintenance and  
37 associated benefits to vegetation within exclusion areas is expected from the habitat conservation  
38 plans (HCPs) and other conservation management plans that are the basis for the exclusions.  
39 Those few exclusion areas that do not have an HCP in place include some areas that have a  
40 commitment and history of conservation action. Since including these areas in the designation  
41 could have economic impacts to the extent that activities would require a Federal license, permit  
42 or funding, these exclusions could reduce the economic impacts of designation on vegetation  
43 conservation in these areas overall, by requiring fewer consultations. This would reduce

1 administrative costs as well for the Service. The overall impacts to vegetation would still be  
2 characterized as minor.

### 3 **3.4 Wildlife and Fisheries (Including Threatened & Endangered** 4 **Species)**

#### 5 **3.4.1 Existing Conditions**

6 Hundreds of mammal, bird, amphibian, reptile, and fish species are dependent on riparian  
7 habitats and their associated aquatic habitats in the proposed flycatcher critical habitat area.  
8 Boreal wetlands (see Glossary) are inhabited by tree frogs, salamanders, relict native salmonid  
9 fishes, beaver, mice, and shrews. Montane "canyon bottom" forests support beaver, raccoon,  
10 rodents, migratory songbirds, garter snakes, tree frogs, salamanders, and fish species that include  
11 dace, trout, and sucker (Service 2005a). Great Basin riparian wetlands provide habitat for  
12 numerous minnow and chub species, migratory bats, muskrats, migratory waterfowl, and  
13 shorebirds. Interior and California riparian deciduous woodlands and forests support tree  
14 squirrels, opossums, gophers, bats, and common game species such as white-tailed deer, black  
15 bear, and wild turkey (Service 2005a).

16 Wildlife and aquatic riparian community composition varies widely by state and river reach due  
17 to local and regional conditions such as elevation, climate, stream type, type and extent of  
18 upstream water management activities; proximity of agricultural and urban areas; and grazing  
19 pressure. Of particular importance to wildlife, fisheries, and listed species are the composition,  
20 quality, quantity, and extent of riparian vegetation present. Riparian systems provide numerous  
21 resources for wildlife, including food; cover; water; shady and moist microclimates; woody  
22 structural components for roosting, perching, and breeding; inputs of nutrients and organic  
23 matter; and critical migration corridors (Service 2005a).

#### 24 *Wildlife*

25 The riparian breeding bird community along streams in the Southwest is dominated by  
26 neotropical migrants that live and breed in the area during the spring and summer (i.e., species  
27 that breed in the U.S. and Canada and overwinter in Mexico or farther south). Within the  
28 riparian zone, many of these summer residents are specialists and exhibit narrow habitat  
29 requirements defined by vegetation composition and/or structure. For example, rails (family  
30 Rallidae) and marsh wrens (*Cistothorus palustris*) are largely restricted to marsh habitat  
31 dominated by cattails and other native emergent vegetation. Flycatchers (*Empidonax spp.*),  
32 Bell's vireo (*Vireo bellii*), and yellow warbler (*Dendroica petechia*) are generally dependent  
33 upon dense, early-to- mid-successional stage vegetation. Gray hawk (*Asturina nitida*), common  
34 black-hawk (*Buteogallus anthracinus*), and yellow-billed cuckoo (*Coccyzus americanus*) are  
35 strongly associated with more mature riparian forest and woodland of taller structure. In  
36 contrast, mourning dove (*Zenaida macroura*), ash-throated flycatcher (*Myiarchus cinerascens*),  
37 and blue grosbeak (*Passerina caerulea*) are habitat generalists, making use of a wide variety of  
38 woody riparian vegetation types (Service 2005a).

39 The brown-headed cowbird (*Molothrus ater*) is a species that will lay eggs in nest of other birds,  
40 a tactic called brood parasitism. This brood parasitism by the brown-headed cowbird is a threat

1 to the flycatcher at some sites because in most cases cowbird parasitism causes complete  
2 flycatcher nest failure or the successful rearing of only cowbird chicks (Service 2005a).  
3 Appendix F of the 2002 Recovery Plan provides guidelines for assessing and managing cowbird  
4 parasitism (Service 2002). Although cowbird parasitism may not occur with the flycatcher as  
5 often as other songbird species, or be more damaging than predation of eggs and nestlings by  
6 other species, deterrence of cowbird parasitism is more easily achieved without impacting the  
7 entire ecosystem than managing for other predators (Service 2002).

8 The number of native mammal species using riparian habitats in the Southwest is less diverse  
9 than for birds. Most large, wide-ranging mammals (i.e., ungulates and carnivores) will make use  
10 of riparian areas where available in their home range at some point in their life cycle. Mammals  
11 restricted to riparian and riverine habitats in the Southwest include the river otter (*Lutra*  
12 *canadensis*) and beaver (*Castor canadensis*). Beaver in particular can enhance riparian and  
13 riverine systems by felling mature trees, building dams, and creating more open-water habitat via  
14 beaver ponds. This makes them a cornerstone species for many riparian systems in the  
15 Southwest by initiating succession, preventing erosion, and creating habitats necessary for a  
16 variety of other riparian plants and animals (Service 2005a).

17 Many reptiles and amphibians are also limited to riparian and/or associated riverine habitats in  
18 the southwest. For example, garter snakes (*Thamnophis* spp.), the Sonoran mud turtle  
19 (*Kinosternon sonoriense sonoriense*), leopard frogs (*Rana* spp.), and several species of toad  
20 (*Anaxyrus* spp.) are dependent on riparian/riverine habitats for all or most of their life cycles.  
21 The Mexican garter snake (*Thamnophis eques*) has been petitioned for Federal listing and at  
22 least historically occurred in flycatcher habitat. Other southwest reptiles generally associated  
23 with uplands, including Gila monster (*Heloderma suspectum*), will preferentially use riparian  
24 habitats because of the moderate temperatures and greater abundance of food present in  
25 streamside areas (Service 2005a).

## 26 *Fisheries*

27 The Lower Colorado River typifies river and stream conditions—and by extension, fisheries—  
28 throughout the Southwest. Fisheries habitat in the Lower Colorado River and tributaries was  
29 historically characterized by large seasonal floods that carried large sediment loads. This  
30 seasonal flooding and the associated sediment loads resulted in a unique fisheries community  
31 represented by species adapted to high velocity flows and low visibility. This hydrological  
32 regime also resulted in shifting channels with separate or connected backwaters and oxbows.  
33 These backwaters provided warm, relatively safe nursery habitat for fry and young-of-the-year of  
34 many native fish species (Service 2005a).

35 The current hydrology of the Colorado River system has been substantially altered by the  
36 construction of hydroelectric dams and irrigation diversions, though these changes have not  
37 occurred on all Southwest streams (covered in Section 3.2). Especially on the Lower Colorado  
38 River, these structures have altered the historic flow regime, decreasing the variability of flow  
39 fluctuations and altering flow timing from spring-summer peaks to smaller daily peaks and  
40 reducing overbank flows (Poff et al. 1997). Water releases from dams that take water from the  
41 deepest parts of the reservoirs immediately behind the dam result in clear, cold-water flows  
42 immediately downstream of the dams. These flows favor non-native salmonid, sportfish species  
43 such as rainbow trout (*Onchorhynchus mykiss*) and brown trout (*Salmo trutta*) but do not provide

1 ideal temperature or conditions for native species (Service 2005a). Native fish species are  
2 adapted to the historic temperature regime, which included daytime water temperatures up to 70–  
3 80°F (21–27°C) during the summer, and have not fared well with changes to temperature and  
4 flow regimes (Service 2005a).

5 Ten native fish species were historically found in the Lower Colorado River. These included  
6 three marine/estuarine species: the spotted sleeper (*Eleoteris picta*), the Pacific tenpounder  
7 (*Elops affinis*), and the striped mullet (*Mugil cephalus*). Only one specimen of the spotted  
8 sleeper has ever been catalogued; however, both the Pacific tenpounder and striped mullet are  
9 common. None of these species' ranges extends beyond the current Imperial Dam in California  
10 (Service 2005a).

11 The desert pupfish (*Cyprinodon macularius*) was historically found in the lower reaches of the  
12 Colorado and Gila Rivers in the early 1900s. This species occupied backwaters and springs  
13 along the river margins (Service 2005a). Its present range includes the Lower Colorado River in  
14 Arizona and California, downstream from Needles to the Gulf of California and to the delta in  
15 Sonora and Baja California (Service 2002). Six other species historically occurred in this section  
16 of the river system: bonytail chub (*Gila elegans*), roundtail chub (*G. robusta*), Colorado  
17 pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), flannelmouth  
18 sucker (*Catostomus latipinnis*), and woundfin (*Plagopterus argentissimus*). Roundtail chub  
19 typically inhabited tributary streams such as the Salt, Verde, and Gila Rivers and were not  
20 believed to be abundant in the lower mainstream Colorado River (Service 2005a). Similarly,  
21 woundfin are also rare in the mainstream Colorado River with no fish collections reported since  
22 the turn of the century. Currently, its distribution is limited to the Virgin River (Service 2005a).  
23 Low numbers of flannelmouth suckers historically occupied the Lower Colorado River,  
24 however, this native population was extirpated (Service 2005a). A population of 600 was  
25 transplanted from the Paria River to the mainstem Colorado River below Lake Mead in 1976.  
26 That population still currently exists. The remaining three native fish species, the Colorado  
27 pikeminnow, bonytail chub, and razorback sucker, made up the majority of the historic large fish  
28 assemblage of the lower Colorado and Gila Rivers. All three of these species are currently  
29 Federally listed as endangered.

### 30 *Federal Threatened and Endangered Wildlife Species*

31 The wildlife species that are listed as endangered or threatened by the Service (or are proposed or  
32 candidates for listing) and that are likely to occur in the proposed critical habitat stream segments  
33 are listed in Table 3.5. The number and diversity of these species, including mollusks, fish,  
34 amphibians, reptiles, birds, and mammals, attest to the value of riparian habitats for fish and  
35 wildlife.

36 Of the listed species that might occur, 23 wildlife species and 9 plant species have designated  
37 critical habitat that overlap with the proposed Flycatcher critical habitat. This represents about  
38 22.6% of the total proposed flycatcher designation, and about 1100 stream miles (1770 km).

1 **Table 3.5 Federally Listed Wildlife Species that Could Occur in Flycatcher**  
 2 **Recovery Units and Proposed Critical Habitat**

Common Name	Scientific Name	Status *	Recovery Units					
			CC	BM	LC	UP	G	RG
Apache trout	<i>Oncorhynchus apache</i>	T					X	
Arizona treefrog	<i>Hyla wrightorum</i>	T					X	
Arroyo toad	<i>Bufo californicus</i>	E	X	X	X			
Ash meadows Amargos pupfish	<i>Cyprinodon nevadensis mionectus</i>	E	X					
Ash meadows speckled dave	<i>Rhinichthys osculus nevadensis</i>	E		X				
Beautiful shiner	<i>Cyprinella formosa</i>	T					X	
Big spring spinedace	<i>Lepidomeda mollispinis pratensis</i>	T			X			
Bonytail chub	<i>Gila elegans</i>	E	X		X	X	X	
California red-legged frog	<i>Rana aurora draytoni</i>	T	X	X	X			
California tiger salamander	<i>Ambystoma californiense</i>	E	X	X				
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	E					X	
Colorado pike minnow	<i>Ptychocheilus lucius</i>	E	X		X	X	X	X
Columbia spotted frog	<i>Rana luteiventris</i>	C		X				
Desert pupfish	<i>Cyrinodon macularius</i>	E	X	X	X	X	X	
Giant gartersnake	<i>Thamnophis gigas</i>	T		X				
Gila chub	<i>Gila intermedia</i>	E					X	
Gila topminnow	<i>Poeciliopsis occidentalis</i>	E			X	X	X	
Gila trout	<i>Oncorhynchus gilae</i>	T					X	X
Greenback cutthroat trout	<i>Oncorhynchus clarki stomias</i>	T				X		
Headwater chub	<i>Gila nigra</i>	C					X	
Hiko White River springfish	<i>Crenichthys baileyi grandis</i>	E			X			
Huachuca springsnail	<i>Pyrgulopsis thomsoni</i>	C					X	
Humpback chub	<i>Gila cyoha</i>	E			X	X		
Lahotan cutthroat trout	<i>Oncorhynchus clarki henshai</i>	T		X				
Least Bell's vireo	<i>Vireo belli pusillus</i>	E	X	X	X	X		
Least tern	<i>Sterna antillarum</i>	E	X	X	X	X	X	X
Light footed clapper rail	<i>Rallus longirostris levipes</i>	E	X	X				
Little Colorado spinedace	<i>Lepidomeda vittata</i>	T					X	
Loach minnow	<i>Tiraroga cobitis</i>	T					X	
Mexican spotted owl	<i>Strix occidentalis lucida</i>	T			X	X	X	X
Mohave tui chub	<i>Gila bicolor hovaensis</i>	E	X		X			
Mountain yellow-legged frog	<i>Rana muscosa</i>	E	X	X	X			
Northern Mexican	<i>Thamnophis eques</i>	C					X	

Common Name	Scientific Name	Status*	Recovery Units					
			CC	BM	LC	UP	G	RG
gartersnake	<i>megalops</i>							
Ocelot	<i>Leopardus pardalis</i>	E					X	
Owens pupfish	<i>Cyprinodon radiosus</i>	E		X				
Owens tui chub	<i>Gila bicolor snyderi</i>	E		X				
Page springsnail	<i>Pyrgulopsis morrisoni</i>	C					X	
Pahrnagat Roundtail chub	<i>Gila robusta jordani</i>	E			X			
Piping plover	<i>Charadrius melodus</i>	E						X
Railroad valley springfish	<i>Crenichthys nevadae</i>	T		X				
Razorback sucker	<i>Xyrauchen texanus</i>	E	X		X	X	X	X
Relict leopard frog	<i>Rana onca</i>	C			X			
Rio Grande cutthroat trout	<i>Oncorhynchus clarki virginalis</i>	C						X
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	E						X
Roundtail chub	<i>Gila robusta</i>	C			X	X	X	
Santa Ana sucker	<i>Hybognathus amarus</i>	T	X		X			
Stephen's riffle beetle	<i>Heterelmis stephani</i>	C					X	
Sonoran tiger salamander	<i>Ambystoma tigrinum stebbinsi</i>	E					X	
Spikedace	<i>Oncorhynchus mykiss</i>	T					X	
Unamored threespike stickleback	<i>Gasterosteus aculeatus williamsoni</i>	E	X		X			
Virgin River chub	<i>Gila seminuda</i>	E			X			
White river spinedace	<i>Lepidomeda albivallis</i>	E		X				
White river springfish	<i>Crenichthys baileyi baileyi</i>	E			X			
Woundfin	<i>Plagopterus agentissimus</i>	E			X		X	
Yaqui catfish	<i>Ictalurus pricei</i>	T					X	
Yaqui chub	<i>Gila purpurea</i>	E					X	
Yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	C		X	X	X	X	X
Yosemite toad	<i>Anaxyrus canorus</i>	C		X				
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	E	X	X	X	X	X	
Zuni bluehead sucker	<i>Catostomus discobolus yarrowi</i>	C			X		X	

- 1 \* Federal Status Abbreviations  
2 E = Endangered; T = Threatened; PE = Proposed Endangered; C = Candidate Taxon, Ready for Proposal; XN =  
3 Experimental,  
4 Non-essential Population (may apply in only a portion of a species' range)  
5 2 Recovery Unit Abbreviations  
6 CC = Coastal California; BM = Basin and Mohave; LC = Lower Colorado; UP = Upper Colorado G = Gila; RG =  
7 Rio Grande  
8 (Source: Service 2011b)

1 *Consultations Since Previous Designation*

2 Most activities that would affect wildlife and fisheries would do so indirectly, through habitat  
3 management, water management, and grazing management. However, some activities can  
4 directly impact wildlife species and their habitats, such as nonnative species introduction (like  
5 leaf beetles, or exotic sport fish) or removal and management and lake and river fish stocking.

6 In the 2009 Final Gunnison River Basin Programmatic Biological Opinion, the Service reviewed  
7 water management activities including adjusting flow rates, and removal of nonnative fish  
8 species along the Gunnison River with a “no effect” finding for the flycatcher and associated  
9 critical habitat (Service 2009a). Also in 2009 the Service conducted an intra-agency consultation  
10 for proposed piscicide treatments of the Gila River to remove nonnative fish species that included  
11 a “no effect” finding for the flycatcher and associated critical habitat (Service 2009b).

12 In 2005, section 10 recovery permits were issued to qualified individuals to experimentally hold  
13 water in Horseshoe Reservoir at levels that inundated otherwise-suitable flycatcher habitat for  
14 research and population census purposes, to benefit recovery of the southwestern willow  
15 flycatcher within its historical range (Service 2005d). The Service found that the proposed  
16 action “may affect, and is likely to adversely affect” the flycatcher and its proposed critical  
17 habitat. Recovery permits were issued for the incidental take of southwestern willow flycatcher  
18 resulting from nest searching, nest monitoring, and inundation of habitat resulting from harm  
19 and/or harassment of up to 7 pairs and 17 territorial male flycatchers (Service 2005d).

20 In 2011, the Arizona Game and Fisheries Department proposed 166 stocking sites in the state of  
21 Arizona and 18 species of native and nonnative sportfish to be stocked at one or more of those  
22 sites (Service 2011c). The Service found that with best management practices such as stocking  
23 outside of flycatcher habitat or outside of flycatcher breeding season, it was determined that this  
24 project would not jeopardize the continued existence of the flycatcher, or destroy or adversely  
25 modify designated critical habitat (Service 2011c).

26 **3.4.2 Environmental Consequences**

27 **3.4.2.1 No Action Alternative**

28 Under the No Action Alternative, no changes would be made to the 2005 designation of critical  
29 habitat. The section 7 consultation process would continue as presently conducted without the  
30 additional 38 percent increase in Management Units and 44 percent increase in stream miles of  
31 critical habitat. Consultations may occur in the proposed critical habitat, as currently, if  
32 individuals of the species found there might be affected by agency actions. The number of  
33 potential consultations would be expected to continue at the same rate as under current  
34 conditions and these consultations would also encourage BMPs that enhance and maintain  
35 healthy and riparian ecosystems. As they relate to wildlife, such consultations would likely  
36 include:

- 37 • U.S. Army Corps of Engineers (bridge projects, stream restoration, vegetation  
38 management, urban development);
- 39 • U.S. Bureau of Land Management (fire suppression, fuel-reduction treatments, land and  
40 resource management plans, livestock grazing and management plans);

- 1 • U.S. Department of Transportation (highway and bridge construction and maintenance);
- 2 • U.S. Fish and Wildlife Service (issuance of section 10 enhancement of survival permits,
- 3 habitat conservation plans, and safe harbor agreements; National Wildlife Refuge
- 4 planning; Partners for Fish and Wildlife program projects benefiting the flycatcher,
- 5 Wildlife and Sportfish Restoration program); and
- 6 • U.S. Forest Service (vegetation management, noxious weed treatments, fire-management
- 7 plans, fire suppression, fuel-reduction treatments, forest plans, livestock-grazing-
- 8 allotment management plans).

9 Consequently, this alternative would have no adverse impacts on wildlife, including candidate,  
10 proposed, or listed species. There would likely be positive impacts associated with those  
11 conservation measures resulting from the presence of existing critical habitat) and associated  
12 requirements of section 7 of the ESA.

### 13 **3.4.2.2 Alternative A**

14 Under Alternative A, additional stream segments have been proposed as critical habitat  
15 compared to the existing 2005 designation (these are identified in section 2.3).

16 Compared to the No Action Alternative, Alternative A (all proposed stream segments, no  
17 exclusions) would result in (1) an increased workload for action agencies and the Service to  
18 conduct re-initiated consultations for ongoing actions in newly proposed areas where flycatchers  
19 have been detected; (2) completing consultations for new projects occurring along the 12  
20 proposed stream segments where flycatcher territories have not yet been detected (post-1991);  
21 (3) new consultations from project proponents that previously did not consult due to a lack of  
22 awareness of the recovery goals for some river segments in the management units where  
23 southwestern flycatcher territories are known; and (4) possible project modifications to avoid  
24 adverse modification of critical habitat in areas where a significant alteration of habitat is  
25 proposed.

26 Increased section 7 consultations would likely have beneficial, conservation-related effects on  
27 PBFs and PCEs within designated critical habitat, which would in turn result in beneficial  
28 impacts to wildlife species.

#### 29 *New and Reinitiated Consultations*

30 Wildlife species are dependent on their habitat and those species that use riparian habitats in the  
31 Southwest desert are vulnerable to habitat changes, and affects to the PCEs in flycatcher critical  
32 habitat. Because impacts to PBFs and PCEs that occur within designated critical habitat stream  
33 segment are closely tied to adverse effects to the flycatcher, activities that would require  
34 consultation for critical habitat are primarily the same activities that currently require  
35 consultation for the species. The designation of critical habitat raises awareness of the species  
36 presence in an area, and therefore project proponents who have not requested consultations for  
37 actions that may affect the species may decide to do so.

38 Reinitiated consultations are consultations that have been completed for impacts to the species,  
39 but which might need to be re-opened to consider the likelihood of destruction or adverse  
40 modification to critical habitat. In terms of wildlife, such consultations could include:

- 1 • Fire Management plans — BLM, USFS;
- 2 • River restoration projects, wetland restoration projects — USACE, USFS; and
- 3 • Land management plans, conservation management plans and livestock management
- 4 plans— BLM, USACE, USFS, USFWS.

5 Because critical habitat was previously designated in 2005 and because of the similarities  
6 between the 2005 and 2011 PCEs and PBFs, it is not anticipated that projects already evaluated  
7 for critical habitat effects would need to re-initiate consultation.

#### 8 *Addition of Adverse Modification Analysis to Future Consultations*

9 Proposed actions that adversely affect or may affect flycatcher critical habitat along the 12  
10 stream segments where breeding flycatchers are not known to occur could now trigger  
11 consultation with the Service. These additional consultations for adverse modification would  
12 increase administrative costs to the Service and to the action agencies. Implementing  
13 conservation measures that are taken for actions that now require consultations would also  
14 increase costs for action agencies. Outcomes of consultations for critical habitat could also  
15 include reasonable and prudent measures designed to maintain flycatcher PCEs. These outcomes  
16 cannot be specified in advance; however, based on past consultations types of additional  
17 management actions that may be required include, but are not limited to:

- 18 • Revising management plans;
- 19 • Mapping, surveying, and monitoring flycatcher habitat and preparing survey and
- 20 monitoring reports;
- 21 • Modifying or converting occupied breeding habitat dominated by exotic vegetation to
- 22 habitat dominated by native vegetation; and
- 23 • Adjusting exotic and invasive species management.

24 Section 7 consultations can also benefit a variety of wildlife species through the incremental  
25 conservation of flycatcher PCEs. Birds such as Bell's vireo, blue grosbeak, and yellow warbler  
26 would benefit from conservation of breeding habitat consisting of dense riparian vegetation with  
27 thickets of trees and shrubs interspersed with small areas of open water or marsh or  
28 shorter/sparser vegetation. Breeding raptors such as common black-hawk and gray hawk would  
29 benefit from maintenance of more mature riparian forest stands. Wild turkey would benefit  
30 from the conservation of riparian trees as roosting sites (NWTF, 2010). Insectivorous birds,  
31 mammals, reptiles, and amphibians would all benefit from the conservation of diverse insect  
32 populations that have been identified as a flycatcher PCE. Riparian mammals would primarily  
33 benefit from conservation of riparian habitat that would provide cover, shelter, and foraging  
34 areas.

35 In general, the designation of critical habitat and subsequent conservation or maintenance of  
36 riparian habitat would have beneficial effects on fish by providing valuable refuge habitat for  
37 young-of-the-year native and non-native species. Maintenance of instream flows would have a  
38 generally beneficial, long-term impact for all fish species. Conservation of flycatcher PCEs  
39 would assist in maintaining instream flows because healthy riparian habitat serves to reduce  
40 erosion, increase bank storage of water through maintenance of the riparian water table, reduce  
41 water temperature through shading and evapotranspiration, and provide opportunities for  
42 increased insect prey.

1 Consultation and implementing conservation measures and recommendations would reduce the  
2 potential future effects of federal projects on most listed riparian vertebrates and invertebrates.  
3 If designation of critical habitat resulted in reducing the effects of federal projects, listed  
4 mammals, birds, reptiles, and amphibians would respond positively to the maintenance of  
5 riparian tree and shrub communities, particularly those in close association with open water  
6 or marsh habitat. However, it should be noted that designation of flycatcher critical habitat  
7 would have only minor effects (either beneficial or adverse) on existing populations of  
8 razorback sucker, Colorado pikeminnow, and bonytail. The Colorado pikeminnow is no longer  
9 found in the Lower Colorado River system, and razorback sucker and bonytail appear to be  
10 confined to large reservoirs in a small area that would be not be impacted by critical habitat  
11 designation (Service 2005; Service 2008f). Critical habitat designation would not be expected  
12 to cause agencies to change dam and reservoir operations, and water levels, or water quality  
13 requirements, which are the river characteristics most severely impacting the listed fish species.

14 In summary, the effects of critical habitat designation on vegetation are expected to be minor  
15 because: (1) few projects would be subject to new consultations based solely on the presence of  
16 newly designated critical habitat, because 15 of 29 of the proposed stream segments are occupied  
17 by the southwestern willow flycatcher and were designated as critical habitat in 2005; (2) few  
18 additional consultations would be necessary for projects affecting unoccupied areas (the 12  
19 newly-designated stream segments), leading to conservation measures and potential additional  
20 project costs and delays; (3) it is unlikely that consultations would be reinitiated for projects that  
21 have previously consulted on critical habitat because of the similarities between the PCEs and  
22 PBFs described in the 2011 proposal and the 2005 critical habitat designation; (4) any reasonable  
23 and prudent alternatives developed under jeopardy analysis would not likely be changed  
24 substantially with the addition of adverse modification analysis in areas occupied by the  
25 flycatcher; (5) though some additional conservation measures may be implemented to avoid  
26 adverse modification above those that would be necessary to avoid jeopardy on proposed critical  
27 habitat segments only sparsely occupied by flycatcher territories, this would likely be limited to  
28 portions of 14 of the 29 Management Units, where such conditions exist. Increased section 7  
29 consultations could also have beneficial, conservation-related effects to PBFs, PCEs and  
30 designated critical habitat.

### 31 **3.4.2.3 Alternative B**

32 Alternative B would exclude approximately 1,464 km (910 mi) of proposed stream segments  
33 from critical habitat designation when compared with Alternative A. When compared with  
34 Alternative A, designation of critical habitat under this alternative would decrease the number of  
35 re-initiated section 7 consultations and the number of new section 7 consultations.

36 Effects to PBFs and PCEs would be generally the same as for Alternative A, as PCE  
37 maintenance and associated benefits to wildlife within exclusion areas are expected from the  
38 HCPs and other conservation management plans that are the basis for the exclusions. Those few  
39 exclusion areas that do not have an HCP in place include some areas that have a commitment  
40 and history of conservation action. Since including these areas in the designation could have  
41 economic impacts to the extent that activities would require a Federal license, permit or funding,  
42 these exclusions could reduce the economic impacts of designation on wildlife conservation in

1 these areas overall, by requiring fewer consultations. This would reduce administrative costs as  
2 well for the Service. The overall impacts to wildlife would still be characterized as minor.

### 3 **3.5 Fire Management**

#### 4 **3.5.1 Existing Conditions**

5 Native riparian vegetation is not generally fire-adapted, and evidence suggests that, historically,  
6 fire has not been a major disturbance in the vegetation communities that border southwestern  
7 streams. Wildland fire, however, is becoming a more common form of disturbance in riparian  
8 habitats throughout the Southwest and thus a more common form of disturbance to the riparian  
9 habitat that supports the flycatcher. The increased prevalence of fire disturbance is attributed to  
10 increased fuel loading resulting from control of floods; replacement of native vegetation by  
11 exotic species, many of which are highly flammable (e.g., tamarisk); river dewatering; and  
12 increased ignitions associated with increased human activity (Service 2002).

13 Flood control tends to prevent dead vegetation, litter, and woody debris from being swept away  
14 or redistributed during the scouring actions of normal high water flows and allows woody  
15 material and dead vegetation to accumulate. The replacement of native riparian trees and shrubs  
16 by tamarisk tends to increase fuel loads within flycatcher breeding habitat: dense stands of  
17 tamarisk produce large quantities of dry leaf litter, and dead stems and branches do not decay  
18 quickly. This relatively dense ground material supports intense, fast-moving fires that further  
19 alter the historic fire regime and accelerate the replacement of native riparian vegetation. River  
20 dewatering increases the frequency and intensity of wildland fire by reducing the water content  
21 of riparian vegetation, thereby causing the stress-related death and desiccation of riparian  
22 vegetation, which increases fuel loads. Dewatering also contributes to the replacement of native  
23 vegetation by more flammable exotic species, such as tamarisk. Livestock grazing within  
24 riparian habitat can contribute to establishing exotic vegetation. Increasing recreation along  
25 rivers and stream riparian corridors increases the fire potential and the instances of human-  
26 caused fires within these areas (Service 2002).

27 An additional consequence of the trend toward the increased frequency of riparian fire is that the  
28 fires tend to burn during the flycatcher summer breeding season, causing direct loss of nests,  
29 young, and habitat. Nesting success within a burned breeding area can be lost for several years  
30 after a fire, due to loss of the necessary vegetation structure needed for nesting. Reducing  
31 wildfire risk through hazardous fuel reduction and suppressing wildfire can be beneficial for  
32 flycatchers (Service 2002).

33 Current Federal fire management practices conform to the National Fire Plan, which was  
34 developed by Federal agencies in 2001 to address the causes of changing fire regimes and to  
35 guide wildland fire management (FY 2001 Interior and Related Agencies Appropriations Act  
36 [Public Law 106–291]). The implementation plan for this collaborative effort, called the 10-year  
37 Comprehensive Strategy, outlines a comprehensive approach to the management of wildland  
38 fire, hazardous fuels, and ecosystem restoration and rehabilitation on Federal and adjacent state,  
39 Tribal, and private forest and range lands in the United States.

1 The four primary goals of this strategy are to (1) improve prevention and suppression, (2) reduce  
2 hazardous fuels, (3) restore fire-adapted ecosystems, and (4) promote community assistance.  
3 Possible fire management actions depend on specific circumstances and may include:

- 4 • Reduction of hazardous fuel loads by mechanical, chemical, or biological means;
- 5 • Reduction of hazardous fuel loads or habitat restoration with prescribed fire, which is any  
6 fire ignited by management actions to meet specific objectives;
- 7 • Wildland fire use, which is the management of naturally ignited wildland fires to  
8 accomplish specific restated resource management objectives in predefined geographic  
9 areas; and
- 10 • Wildland fire suppression.

11 These actions could result in potential impacts such as increased water temperatures, fire-  
12 induced changes in pH, and increased ammonium and phosphate levels leached from smoke and  
13 ash. Post-fire effects include increased runoff and heavy sediment loads due to loss of  
14 groundcover and subsequent erosion in the watershed; loss of streamside vegetation that provides  
15 nutrients, shade, bank stabilization, and habitat among roots; altered channel morphology;  
16 degraded water quality; and altered food web.

17 Consistent with national policy, the focus of fire management has increasingly been on the  
18 wildland-urban interface (WUI), which comprises areas where flammable wildland fuels meet or  
19 intermingle with structures and other human development. Very little of the proposed critical  
20 habitat for the flycatcher overlaps WUI areas, because WUI areas are closer to developed areas,  
21 which the Service has tried to avoid in this designation.

22 In 2003, as part of the National Fire Plan, alternative section 7 process regulations were  
23 published to reduce potential delays on concurrence by the USFWS for National Fire Plan  
24 actions that action agencies (e.g., BLM, Forest Service) have determined are "not likely to  
25 adversely affect any listed species or designated critical habitat." The alternative section 7  
26 process allows action agencies to conduct the section 7 process more efficiently in WUI areas  
27 (68 FR 68254).

28 The 2002 Recovery Plan also includes some specific measures for fire management (Service  
29 2002). These include:

- 30 • Increasing water availability through:
  - 31 ▪ Increasing efficiency of groundwater management
  - 32 ▪ Using urban waste water outfall and rural irrigation delivery and tail waters
  - 33 ▪ Providing or reestablishing instream flows
- 34 • Expanding the active channel area that supports currently suitable and potentially suitable  
35 flycatcher habitat by increasing the width of levees and using available flows to mimic  
36 overbank flow
- 37 • Reactivating flood plains to expand native riparian forests
- 38 • Restoring more natural channel geometry (width, depth, bank profiles) where the return  
39 of the natural hydrograph will be insufficient to improve habitat
- 40 • Developing fire risk and management plans
- 41 • Suppressing fires

- 1 • Restoring groundwater, base flows, and flooding
- 2 • Reducing incidence of flammable exotics
- 3     ▪ Managing/reducing exotic species that contribute to increased fire incidence
- 4     ▪ Using water more efficiently and reduce fertilizer applications
- 5 • Reducing recreational fires

6 *Consultations Since Previous Designation*

7 Section 7 consultations regarding fire management are often programmatic in nature, covering  
8 broad-based fire management plans and programs, but consultations may be triggered for  
9 individual burn and rehabilitation plans. Emergency section 7 consultations for wildland fire  
10 suppression are typically conducted “after the fact”.

11 Past impacts of vegetation fire-management activities on flycatchers have been limited. Since  
12 designating the previous critical habitat in 2005, four consultations have been completed for  
13 actions involving fire management planning. Two of these consultations were for amendments  
14 to the same Fire Management Plan at Fallbrook Naval Station and three consultations were for  
15 fuels reduction treatments.

16 In 2006 the Tumacácori National Historical Park proposed to remove, treat, and re-treat tamarisk  
17 year-round for the next 10 years, with efforts to work outside of the April-to-September breeding  
18 season for the flycatcher (Service 2006). Large piles of dead and down woody material would  
19 be pile-burned as determined by the fuels specialist, with these burns expected to be ongoing for  
20 the next ten years, in conjunction with the tamarisk removal. The Service found that the  
21 proposed action was not likely to jeopardize the continued existence of the flycatcher, nor was it  
22 likely to result in adverse modification or destruction of the species’ critical habitat (Service  
23 2006).

24 Conservation measures listed in the Biological and Conference Opinion for the BLM Arizona  
25 Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (Service  
26 2004) exemplify the kinds of conservation measures that might be expected for future section 7  
27 consultations for the flycatcher. These measures are designed to minimize adverse effects of all  
28 fire management activities on Federally-protected species and their habitat. Several measures  
29 are specifically designed to protect and enhance the ecological values and functions of riparian  
30 areas. Conservation efforts for protecting sensitive species and habitat generally include:

- 31 • Using Minimum Impact Suppression Tactics in sensitive habitats;
- 32 • Rehabilitation and restoration of critical habitat if fire management or suppression  
33 activities occur;
- 34 • Restricting prescribed burning within ½ mile of occupied or unsurveyed suitable habitat  
35 to times when weather conditions allow smoke to disperse away from the habitat when  
36 birds may be present;
- 37 • Avoiding the use of fire retardants or chemical foams in riparian habitats or within 300  
38 feet of aquatic habitats, particularly sites occupied by Federally protected species.;
- 39 • Minimizing the use of low flying helicopters, chainsaws and bulldozers, and developing  
40 access roads except where necessary;

- 1 • Incorporating consideration of sensitive species and habitat into all fire management and  
2 rehabilitation plans, programs, and implementation efforts; and
- 3 • Training firefighters and support personnel on the conservation measures designed to  
4 minimize or eliminate take of the species present.

## 5 **3.5.2 Environmental Consequences**

### 6 **3.5.2.1 No Action Alternative**

7 Under the No Action Alternative, no changes would be made to the 2005 designation of critical  
8 habitat. The section 7 consultation process would continue as presently conducted without the  
9 additional 38 percent increase in Management Units and 44 percent increase in stream miles of  
10 critical habitat. Consultations may occur in the proposed critical habitat, as currently, if  
11 individuals of the species found there might be affected by agency actions. The number of  
12 potential consultations would continue to be the same as under current conditions and  
13 these consultations would also encourage BMPs that enhance and maintain healthy and  
14 native riparian ecosystems. As they relate to fire management, such consultations would likely  
15 include:

- 16 • U.S. Bureau of Land Management (fire suppression, fuel-reduction treatments, fire  
17 management plans);
- 18 • U.S. Fish and Wildlife Service (fire-management plans, fire suppression, fuel-reduction  
19 treatments, forest plans); and
- 20 • U.S. Forest Service (fire-management plans, fire suppression, fuel-reduction treatments).

21 Consequently, this alternative would have no impact on fire management, beyond those  
22 conservation measures resulting from the presence of existing critical habitat and associated  
23 requirements of section 7 of the ESA.

### 24 **3.5.2.1 Alternative A**

25 Under Alternative A, additional stream segments have been proposed as critical habitat  
26 compared to the existing 2005 designation (these are identified in section 2.3).

27 Fire management activities could produce short-term, adverse impacts to flycatcher PCEs from  
28 riparian vegetation disturbance or removal, potential loss of breeding sites, harassment, and site  
29 disturbance, but can be expected to produce long-term beneficial impacts to flycatcher habitat by  
30 reducing the risks of critical habitat loss from catastrophic, uncontrolled wildland fire.

31 Compared to the No Action Alternative, Alternative A (all proposed stream segments, no  
32 exclusions) would result in (1) an increased workload for action agencies and the Service to  
33 conduct re-initiated consultations for ongoing actions in newly proposed areas where flycatchers  
34 have been detected; (2) completing consultations for new projects occurring along the 12  
35 proposed stream segments where flycatcher territories have not yet been detected (post-1991);  
36 (3) new consultations from project proponents that previously did not consult due to a lack of  
37 awareness of the recovery goals for some stream segments in the management units where  
38 southwestern flycatcher territories are known; and (4) possible project modifications to avoid

1 adverse modification of critical habitat in areas where a significant alteration of habitat is  
2 proposed.

### 3 *New and Reinitiated Consultations*

4 Because impacts to PBFs and PCEs that occur within designated critical habitat stream segments  
5 are closely tied to adverse effects to the flycatcher, activities that would require consultation for  
6 critical habitat are primarily the same activities that currently require consultation for the species.  
7 However, because the designation of critical habitat raises awareness of the species' presence in  
8 an area or the area's importance to its recovery, project proponents who have not requested  
9 consultations for actions in previously designated areas that may affect the species, its habitat,  
10 and/or its recovery, may decide to do so. Based on previous activity in designated units, such  
11 project proponents would include at least the Forest Service and Bureau of Land Management,  
12 although the specific locations of these types of projects in critical habitat are not known at this  
13 time.

14 Reinitiated consultations are consultations that have been completed for impacts to the species,  
15 but which might need to be re-opened to consider the likelihood of destruction or adverse  
16 modification to critical habitat. As it relates to fire management, such consultations could  
17 include:

- 18 • Fire Management Plans—BLM, USFS, USFWS;
- 19 • Fuels Reduction—BLM, USFS, USFWS; and
- 20 • Fire Suppression—BLM, USFS, USFWS.

21 These reinitiated consultations would include after-the-fact consultations precipitated by  
22 emergency fire response activities.

### 23 *Addition of Adverse Modification Analysis to Future Consultations*

24 Proposed actions that adversely affect or may affect flycatcher critical habitat along the 12  
25 stream segments where breeding flycatchers are not known to occur could now trigger  
26 consultation with the Service. These additional consultations for adverse modification would  
27 increase administrative costs to the Service and to the action agencies. Implementing  
28 conservation measures that are taken for actions that now require consultations would also  
29 increase costs for action agencies. Outcomes of consultations for critical habitat could also  
30 include reasonable and prudent measures designed to maintain flycatcher PBFs and PCEs. While  
31 these outcomes cannot be specified in advance, based on past consultations the types of  
32 additional management actions that may be required include:

- 33 • Revising fire management plans;
- 34 • Mapping, surveying, and monitoring flycatcher habitat and preparing survey and  
35 monitoring reports;
- 36 • Modifying or converting occupied breeding habitat dominated by exotic vegetation to  
37 habitat dominated by native vegetation (during fuels reduction activities that involve the  
38 removal of tamarisk); and
- 39 • Retaining riparian vegetation.

1 Beyond the potential costs in time and money for additional consultations, it is important to note  
2 that actions by agencies in response to listing and as outcomes of section 7 consultations have  
3 not significantly constrained fire management. Conservation activities and measures have  
4 focused on timing and avoiding occupied locations, limitations that allow fire management goals  
5 to be achieved. Also, the alternative section 7 regulations for fire management limit the delays  
6 that fire management projects experience to complete consultations. Because of the above and  
7 the expectation that few fire management projects would be subject to consultation solely  
8 because of the presence of critical habitat and the benefits to flycatchers from reducing risks of  
9 wildfire, designating flycatcher critical habitat is expected to have minimal impacts on fire risk  
10 reduction projects and wildfire suppression.

11 In summary, the effects of critical habitat designation on fire management activities are expected  
12 to be minor because (1) few projects would be subject to new consultations based solely on the  
13 presence of designated critical habitat, because 15 of the 29 proposed units are occupied by the  
14 flycatcher; (2) any reasonable and prudent alternatives developed under jeopardy analysis would  
15 not likely be changed substantially with the addition of adverse modification analysis; (3) very  
16 few if any additional conservation measures would be proposed to address critical habitat,  
17 beyond those already proposed in jeopardy consultations; and (4) actions by agencies in response  
18 to listing and as outcomes of section 7 consultations have not significantly constrained fire  
19 management.

### 20 **3.5.2.2 Alternative B**

21 Compared to Alternative A, designation of critical habitat under this alternative would decrease  
22 the number of re-initiated section 7 consultations for ongoing fire management projects and  
23 reduce the number of additional section 7 consultations for proposed fire management projects.  
24 Alternative B would exclude approximately 1,464 km (910 mi) from critical habitat designation.  
25 Constraints and costs to fire management activities resulting from section 7 requirements in the  
26 excluded areas, while minor, would not occur. Effects to PBFs and PCEs would be generally the  
27 same as for Alternative A, as maintenance of these is expected as a result of the HCPs and other  
28 conservation management plans that are the basis for the exclusions.

29 Effects to fire management activities would be generally the same as for Alternative A, as fire  
30 management activities within exclusion areas are incorporated into the existing land management  
31 plans that are the basis for the exclusions. Since including these areas in the designation could  
32 have economic impacts to the extent that activities would require a Federal license, permit or  
33 funding, these exclusions could reduce the economic impacts of designation on wildlife in these  
34 areas overall, by requiring fewer consultations. This would reduce administrative costs as well  
35 for the Service. The overall impacts to fire management would still be characterized as minor.

## 36 **3.6 Water Resources**

### 37 **3.6.1 Existing Conditions**

38 Continuing threats to the southwestern willow flycatcher include the reduction and elimination of  
39 available water in, and changes to water quality of, the flycatcher's breeding habitat, as well as  
40 changes in the natural flow of rivers and streams from human activities. The flycatcher is

1 dependent on riparian environments for breeding and nesting, and breeding habitat includes  
2 dense riparian tree and shrub communities along rivers, swamps, and other wetlands, including  
3 lakes and reservoirs. Current river and stream hydrology, as well as the geomorphology, now  
4 reflect a combination of both natural and artificial processes. These changes include dams and  
5 reservoirs, flood control and diversion structures, canals, groundwater management, wastewater  
6 discharges, stream channelization, and levees (Service 2002). These activities could be impacted  
7 by critical habitat designation for the southwestern willow flycatcher.

8 Operation of dams can modify, reduce, destroy, or increase riparian habitats both downstream  
9 and upstream of a dam site. The natural stream cycles below a dam are modified; all stages of  
10 high, medium and low flow can be altered, with high flows typically being reduced or shifted to  
11 manage for downstream water supply. A lack of flooding can cause a buildup of debris,  
12 resulting in less substrate available for seed germination, reduction of water in the aquifer and  
13 the lateral extent of vegetation, increase in salt in the soil, transport of fine soils, and increased  
14 frequency of fires. These events can also change the levels of soil and water chemistry, affecting  
15 the plant community along the dammed stream (Service 2002). Appendix B lists the major dams  
16 located in 2005 proposed critical habitat and on 2011 newly proposed critical habitat stream  
17 segments. "Major" dams are those with a height of 50 ft. or more and with 5,000 acre-feet or  
18 more in storage.

19 Within the conservation space of a reservoir, riparian habitat that becomes established on  
20 exposed lake bottoms can be affected by how dam operations alter lake levels. Impacts of  
21 inundation can be mitigated by temporary development of riparian habitats where source streams  
22 enter the reservoir. These areas tend to be vulnerable due to reservoir management (raising and  
23 lowering the water level), resulting in increased instability of flycatcher populations. Although  
24 large flycatcher populations do occupy reservoir habitat, they may not be as numerous or as  
25 persistent as those that occupied miles of pre-dammed rivers (Service 2002).

26 Diversion and groundwater pumping occur from agricultural, industrial, and municipal uses and  
27 have been a major factor in the deterioration of southwestern willow flycatcher habitats.  
28 Flycatcher habitat is affected by the reduction of water in riparian ecosystems and associated  
29 subsurface water tables (Service 2002). In addition, channelization, bank stabilization, levees,  
30 and other forms of flow control projects are typically used for flood control and can result in the  
31 separation of streams from their floodplain. Channelization and bank stabilization modify  
32 flycatcher habitat by physically manipulating the stream courses, while levees and other flood  
33 control projects prevent overbank flooding, reduce the extent of alluvial-influenced floodplain,  
34 reduce water tables adjacent to streams, increase stream velocity, increase the intensity of floods,  
35 and generally reduce the volume and width of wooded riparian habitats (Service 2005a).

36 Within the counties containing flycatcher critical habitat, mining is a large industry, as discussed  
37 in Section 3.10 and in the Economic Analysis (IEc 2012). Several mines, primarily located  
38 outside of the proposed critical habitat, draw surface water or utilize groundwater wells located  
39 in the vicinity of critical habitat for industrial purposes. Reductions in water availability to  
40 mining companies could delay or curtail production at mine facilities adversely affecting these  
41 companies.

42 Designation of flycatcher critical habitat may affect water use for mining projects on both  
43 Bureau of Land Management and Forest Service land. There are currently no data that indicate

1 whether existing or future diversions of water for mining activities (including groundwater  
2 pumping) reduce stream flow or modify hydrologic conditions to the degree that adversely  
3 impacts flycatcher and its riparian habitat. Also there are no hydrologic models available that  
4 assess the role of any specific mining facility’s groundwater pumping or surface water diversions  
5 in determining stream flow or other hydrologic conditions within critical habitat. Therefore,  
6 because data on the effects of diversions of water for mining activities on the flycatcher and  
7 flycatcher habitat are limited, the potential impacts of flycatcher critical habitat on mining-  
8 related water resources are difficult to project (IEc 2012).

9 Other activities that could be impacted by critical habitat designation in relation to water  
10 resource projects include habitat restoration projects to protect water quality and maintain,  
11 enhance, and restore rivers and streams as well as associated riparian habitats. These projects  
12 could have both beneficial and adverse impacts to the flycatcher. Projects that enhance  
13 flycatcher specific habitat may help the recovery of the species, while enhancement projects for  
14 other species and water quality improvements may degrade suitable habitat for the flycatcher.

#### 15 *Gila River Basin*

16 Surface water resources in the Gila River are fully appropriated and subject to ongoing  
17 adjudication. Consumptive uses in the Gila River Basin total over 3 million acre-feet per year,  
18 with about 72 percent for irrigation and livestock uses, 25 percent for municipal and industrial  
19 uses, and 3 percent for mining operations (U.S. Bureau of Reclamation 2004). To facilitate  
20 consumptive use, numerous water storage and diversion structures have been constructed in the  
21 mainstem Gila River and its major tributaries.

22 In order to understand current surface water issues for the Gila River, it is necessary to explain  
23 several historical events. In 1952, Arizona sued California over water supplied by the Colorado  
24 River. The dispute grew to include the settlement of water rights of and between New Mexico  
25 and Arizona on the Gila River system. In 1964, the U.S. Supreme Court (*Arizona v. California*)  
26 allocated water to California and Arizona based on future growth projections, but limited New  
27 Mexico’s allocation to its “present use” developed as of 1957. New Mexico protested this  
28 allocation, and its State Engineer entered into negotiations with Arizona to improve its position.  
29 The State Engineer saw an opportunity to secure water for New Mexico as part of the Central  
30 Arizona Project (CAP).

31 The Colorado River Basin Project Act of 1968 (CRBPA) authorized the CAP. The CAP delivers  
32 water from the Colorado River near Lake Havasu across Arizona through Phoenix and Tucson.  
33 Section 304(f) of the original CRBPA authorized an exchange of waters from the Gila River and  
34 its tributaries and underground water sources for CAP water in amounts that permit consumptive  
35 use of water in New Mexico not to exceed an annual average in any period of 10 consecutive  
36 years of 18,000 acre-feet over and above the consumptive uses provided for by Article IV of the  
37 decree of the U.S. Supreme Court in *Arizona v. California*.

38 The Arizona Water Settlements Act (AWSA) of 2004, in addition to settling several outstanding  
39 Indian water claims, authorizes water exchanges between the Gila River Indian Community and  
40 various parties in the State of Arizona, including mining companies and several municipalities in  
41 the upper Gila River watershed. Section 212(d) of the AWSA modified Section 304(f) of the  
42 CRBPA to allow the Secretary of Interior to contract with New Mexico water users or the State

1 of New Mexico, with the approval of its Interstate Stream Commission, for water from the Gila  
2 River, its tributaries, and underground water sources in amounts that will permit consumptive  
3 use of water in New Mexico not to exceed an annual average in any period of 10 consecutive  
4 years of 14,000 acre-feet, over and above the consumptive uses provided for by Article IV of the  
5 decree of the U.S. Supreme Court in *Arizona v. California*. Such increased consumptive uses  
6 shall continue only so long as delivery of Colorado River water to downstream Gila River users  
7 in Arizona is being accomplished in accordance with the AWSA, in quantities sufficient to  
8 replace any diminution of their supply resulting from such diversion from the Gila River, its  
9 tributaries, and underground water sources.

10 Title I Section 107 and Title II Section 212 of the AWSA (Public Law 108–451) provides  
11 between \$66 and \$128 million in non-reimbursable funds for New Mexico to develop water  
12 supply alternatives, including a New Mexico Unit of the CAP if desired to accomplish the  
13 exchange. Funds will be deposited into the New Mexico Unit Fund, a State of New Mexico  
14 Fund established and administered by the New Mexico Interstate Stream Commission.  
15 Beginning in 2012, \$66 million, indexed to reflect changes since 2004 in the construction cost  
16 indices, will be deposited into the New Mexico Unit Fund in 10 equal annual payments.  
17 Following notification by December 31, 2014 that the State of New Mexico intends to have the  
18 New Mexico Unit constructed or developed, an additional \$34 to \$62 million may be available.  
19 A Record of Decision is to be issued in the *Federal Register* by the Secretary of Interior no later  
20 than the end of 2019 (unless extended by the Secretary for reasons outside the control of the  
21 State of New Mexico) regarding the decision.

## 22 *Wetlands and Floodplains*

23 Under the Clean Water Act (CWA), wetlands are defined as “areas that are inundate or saturated  
24 by surface or groundwater at a frequency and duration sufficient to support, and under normal  
25 circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil  
26 conditions (EPA 2011).” Wetlands typically include swamps, marshes, and bogs. Breeding  
27 habitat of the flycatcher includes vegetation alongside rivers, streams, or other wetlands. The  
28 flycatcher’s nesting territories, nests, and forage areas occur in relatively dense and expansive  
29 growth of trees and shrubs, near or adjacent to surface water or in areas underlain by saturated  
30 soils (76 FR 50544). Wetlands are often located along buffer zones of perennial and intermittent  
31 surface streams. Critical habitat designations around river segments include the riparian zone  
32 that is directly influenced by river functions. In fact, the Service used National Wetlands  
33 Inventory (NWI) data to help delineate critical habitat for the flycatcher (76 FR 50557).

34 The southwestern flycatcher is reliant upon the existing habitat conditions to live and breed. As  
35 part of the primary constituent elements (PCE), riparian vegetation for the flycatcher is  
36 characterized by a mosaic of dense patches of riparian forests interspersed with small openings  
37 of open water, marsh, or areas with shorter and sparser vegetation that creates a variety of habitat  
38 that is not uniformly dense. Another PCE is the flycatcher’s insect prey population, which is  
39 found within or adjacent to riparian floodplains or moist environments (76 FR 50551). It can be  
40 assumed that floodplains exist along all river and stream miles designated as critical habitat.

1 *Watershed (Surface and groundwater)*

2 Table 2.4 of the document includes a list of streams and stream portions not designated as critical  
3 habitat in 2005 that are now being proposed for designation.

4 The Management Units with proposed critical habitat are distributed between 17 different  
5 watersheds within California, Nevada, Colorado, Utah, Arizona, and New Mexico (USGS 2006).  
6 Surface and groundwater rights in New Mexico, Arizona, Nevada, Colorado, and Utah follow  
7 the doctrine of prior appropriation: first in time, first in right. Prior appropriations are typically  
8 based on date of appropriation and beneficial use. The state entities responsible for managing  
9 surface and ground water management in these states are:

- 10 • Utah Division of Water – Office of State Engineer;
- 11 • Nevada Division of Water Resources;
- 12 • New Mexico Office of the State Engineer;
- 13 • Colorado Office of the State Engineer; and
- 14 • Arizona Department of Water Resources.

15 Many of these state agencies also oversee dam projects and floodplain management in their  
16 respective states as well as review and grant permits for new and changed water rights (ADWR,  
17 2011; NMOSE 2011; NDWR 2011; CODWR No Date; UDWR 2010).

18 The State of California does not have an entity that manages both surface and groundwater.  
19 Instead, it follows a “dual system” of both the riparian doctrine and the prior appropriation  
20 doctrine. All waters are the property of the State and private property rights allow the use of  
21 water but not the ownership (CADWR 1994). The State of California is not authorized under the  
22 California State Water code to manage groundwater. Groundwater in the state can either be  
23 managed by local agencies under authority granted in the California Water Code or other  
24 statutes, local government groundwater ordinances or joint powers agreements, and court  
25 adjudications (CADWR 2011). The State entity that oversees surface water rights and water  
26 quality in California is the State Water Resources Control Board..

27 Representative water use and water withdrawals within these states that potentially affect critical  
28 habitat are depicted in Table 3.6 (below).

29 *Consultations Since Previous Designation*

30 Because the vegetation that flycatchers rely upon for cover, food, shelter, and reproduction is  
31 typically dependent on a combination of a stream’s ground and surface water, several types of  
32 water related projects have the potential to affect the flycatcher’s habitat and thereby trigger  
33 consultations if there is a Federal nexus, including:

1 **Table 3.6 Water Use and Water Withdrawals, by State--2005**

	<i>Water Use</i>		<i>Water Withdrawals*</i>					
	<b>Pop. Served (1000s)</b>	<b>Total withdrawals* (Surface and Groundwater)</b>	<b>Public</b>	<b>Irrigation</b>	<b>Livestock</b>	<b>Industrial</b>	<b>Mining</b>	<b>Thermal Power**</b>
AZ	5,940	6,240	1,170	4,810	12.6	22.4	103	89.9
CA	36,100	45,700	6,900	24,400	197	95.7	308	12,600
CO	4,670	13,600	864	12,300	33.1	142	21.4	123
NV	2,410	2,380	676	1,500	8.51	5.9	99.1	36.8
NM	1,930	3,330	286	2,810	50.7	13.2	58.7	55.9
UT	2,550	5,120	607	4,000	17.8	163	167	62.2

Source: USGS Estimated water use in the United States (USGS 2009)

\* Withdrawals reported in million gallons per day

\*\*Water converted to steam for electricity-generation

- 2 • Maintenance, construction, and operation of dams and stream channelization;
- 3 • Flood control;
- 4 • Section 404 permitting under the CWA;
- 5 • Wastewater management; and
- 6 • River restoration and enhancement projects.

7 Since critical habitat was designated in 2005, approximately 16 section 7 consultations for water  
 8 and wetland related projects have been conducted by several Federal agencies and departments:  
 9 the U.S. Army Corps of Engineers (USACE), The Natural Resource Conservation Service  
 10 (NRCS), The U.S. Bureau of Reclamation (USBR), the Service, and the U.S. International  
 11 Boundary and Water Commission (USIBC), Bureau of Land Management (BLM), and the U.S.  
 12 Department of Agriculture (USDA). Fewer than 10 of these consultations dealt with 2005  
 13 designated critical habitat, and none of these consultations ended with the Service determining  
 14 that the project was likely to adversely modify critical habitat. These projects included: water  
 15 delivery, diversion, and hydropower generation; flood control; dam operations; channel  
 16 maintenance; and 404 permits and riparian enhancement projects. An example of each of these  
 17 consultations is provided below. Consultations on wastewater projects have not occurred for  
 18 2005 designated critical habitat.

19 The Service conducted an intra-Service section 7 consultation for the issuance of an incidental  
 20 take permit, for the Lower Colorado River Multi-Species Conservation Program (LCR MSCP).  
 21 The LCR MSCP was designed as a joint effort by Federal and non-Federal (state, local, and  
 22 private) entities with management authority for storage, delivery, and diversion of water;  
 23 hydropower generation, marketing, and delivery; and land management or Native American  
 24 Trust responsibilities along the LCR. Federal agencies involved in the LCR MSCP include  
 25 Bureau of Indian Affairs (BIA), BLM, the Service, NPS, and USBR, which was the lead Federal  
 26 agency. During the 10-year development of the Conservation Plan, the Service evaluated the

1 effects of these agencies actions on the LCR and its historical floodplain including activities  
2 related to water delivery and diversion. At the time that consultation took place, 2004 proposed  
3 critical habitat existed in the project area. The Service found that the proposed project was not  
4 likely to destroy or adversely modify proposed critical habitat.

5 In 2005 the USACE, along with NRCS, consulted with the Service in a re-initiation of  
6 consultation for the City of Mesquite's Post-Flood Actions and 2005 Runoff Season Flood  
7 Control Measures, Virgin River, Clark County, Nevada and Mohave County, Arizona. A flood  
8 event occurred in the action area during January 11<sup>th</sup> to the 13<sup>th</sup>, 2005. NRCS was involved in  
9 funding part of the mitigation efforts. Actions taken by the City in the Virgin River to prevent  
10 and repair damage from this flood event and actions proposed to reduce the high potential of  
11 incurring additional flood damage from spring runoff were addressed.

12 The Service determined that the post-flood project would affect 2005 proposed critical habitat  
13 but that the project was not likely to result in adverse modification. This determination was  
14 reached because even though previous actions had affected riparian vegetation of critical habitat,  
15 the golf course and the USACE proposed measures to avoid, substantially minimize, or  
16 compensate for the effects of the previously completed actions and proposed actions to the  
17 flycatcher (Service 2005b).

18 In 2006, the USACE conducted section 7 consultation for the X Diamond Ranch Little Colorado  
19 River Riparian Enhancement Project. The proposed action included a section 404 CWA permit  
20 for a riparian and aquatic enhancement project along a 1-mile reach of the Little Colorado River.  
21 Funding for the project was through an Arizona Department of Water Resources Water  
22 Protection Fund Grant for the development and implementation of measures to protect water of  
23 sufficient quality and quantity to maintain, enhance, and restore rivers and streams and  
24 associated riparian habitats. 2005 critical habit occurs throughout the action area of this project.  
25 The Service determined that the restoration work should have a long-term beneficial effect to the  
26 constituent elements of the flycatcher's critical habitat. The project would establish willows on  
27 vertical banks currently lacking a willow component, stabilize eroding river banks, and occur  
28 outside of the flycatcher breeding and migration season. The Service determined that the project  
29 would not adversely modify this critical habitat because only one mile of critical habitat would  
30 be affected, and effects to PCEs would not reduce the value of critical habitat (Service 2006).

31 The Service conducted an intra-Service section 7 consultation in 2008 for the issuance of a  
32 section 10 incidental take permit of threatened and endangered species associated with  
33 operations of Horseshoe and Bartlett dams and reservoirs by Salt River Project in Maricopa and  
34 Yavapai counties, Arizona. The permit would cover the operation of the dams as proposed with  
35 implementation of proposed minimization, mitigation, and monitoring measures. Both dams  
36 would continue to be operated in a manner consistent with their purpose of water storage  
37 reservoirs and to minimizing spills of water past Granite Reef Dam with two added objectives:  
38 maintaining tall dense vegetation in Horseshoe and managing Horseshoe water levels to  
39 minimize impacts to covered aquatic species.

40 The Service determined that the effects of the proposed action were unlikely to result in adverse  
41 modification of designated critical habitat (Service 2008a)

1 The Service also conducted an intra-service section 7 consultation on the issuance of a section 10  
2 incidental take permit for an Enhancement of Survival Permit to the Arizona Game and Fish  
3 Department (AZGFD) for the reestablishment of endangered Gila and Yaqui topminnow and  
4 endangered desert and Quitobaquito pupfish. The proposed action was to authorize incidental  
5 take, including possible habitat modification on lands controlled by the AZGFD and landowners  
6 enrolled in a Safe Harbor Agreement (SHA). Habitat of the pupfish and topminnow occur in  
7 retention basins; water treatment facilities; groundwater recharge basins; natural or artificial  
8 wetlands; springs, marshes, or streams; residential waters; natural or artificial ponds, lakes, other  
9 catchments; and golf course ponds or other artificial water features. 2005 designated critical  
10 habitat for the flycatcher within the project area included portions of the Roosevelt and Verde  
11 River management unit along the upper half of Tonto Creek, the upstream tip of the Salt River at  
12 Cherry Creek, section of the upper segment along the Verde River south of Camp Verde, and a  
13 section of the middle segment of the Verde River. The Service concluded that the project was  
14 unlikely to result in adverse modification of proposed 2005 critical habitat because all designated  
15 critical habitat is within stream systems and the SHA cannot be used on sites that have the  
16 potential for fish to move from them unless downstream landowners also sign a Certificate of  
17 Inclusion (Service 2008b).

18 Also in 2008, the USBR conducted a section 7 consultation for the Elephant Butte Reservoir  
19 Temporary Channel Maintenance Project and the effects it would have on the flycatcher and  
20 2005 critical habitat. The USBR along with the New Mexico Interstate Stream Commission  
21 sought to construct and maintain a temporary channel that facilitates delivery of water and  
22 sediment from the Rio Grande to Elephant Butte Reservoir. The proposed action included  
23 maintenance of the temporary channel for five and a half years and new construction of a lower  
24 channel. Enhancement features include maintenance operations, future temporary channel  
25 construction, and widening and realignment of the existing temporary channel.

26 The Service found that channel degradation could occur in the project area and may result in the  
27 following: reduction in the quantity and quality of suitable habitat; reduction in the overall  
28 functionality of habitat; and reduction of the extent and density of the habitat, opening up habitat  
29 to predators. Nests could also be more vulnerable to nest parasitism by brown-headed cowbirds.  
30 Lowering of the lake and continued drought conditions could contribute to additional channel  
31 incision upstream into areas with critical habitat.

32 The Service determined that even though there would be an effect to critical habitat it would not  
33 result in adverse modification. They made this determination because the temporary channel  
34 represents a small part of the flycatcher's occupied range and provides marginal habitat. The  
35 Service concluded that while critical habitat for the flycatcher may be adversely affected,  
36 flycatcher habitat is ephemeral and areas that are not currently suitable habitat may become  
37 habitat in the future. Even though the habitat was found marginal, it was determined that it  
38 would still serve the intended conservation for the species with implementation of the proposed  
39 project.

40 Three biological opinions with the mining industry have been conducted by the Service prior to  
41 the 2005 critical habitat designation. Mitigation efforts taken by the mining industry include  
42 agreeing to both protect sensitive habitat areas and monitor the flycatcher populations occurring  
43 on their land (IEc 2012).

1 Typical conservation or mitigation measures recommended in these and other consultations on  
2 water projects include:

- 3 • Reducing land management stressors to help native vegetation to flourish;
- 4 • Continuing directing irrigation runoff into the southwestern willow flycatcher nesting  
5 site;
- 6 • Implementing Long-term Flood Control measures in coordination with the proponent;
- 7 • A city-directed development of a Long-term Flood Control Measures and Restoration  
8 Implementation Plan for the original action area and the expanded action area;
- 9 • Creation or protection of riparian areas composed of dense riparian woodlands;
- 10 • Riparian woodlands should be at least 10 acres in size;
- 11 • Riparian woodlands should be provided in blocks rather than in strips;
- 12 • Riparian habitats should be located in areas that favor a natural succession of vegetation;
- 13 • Modification of reservoir operations to make riparian habitat available earlier in the  
14 nesting season;
- 15 • Maintaining riparian vegetation at higher elevations in the reservoir whenever possible;
- 16 • Earlier and more rapid drawdown of reservoir whenever feasible in the spring to make  
17 more habitat available early in the breeding season;
- 18 • Acquiring and managing sufficient acreage of mitigation habitat in perpetuity to provide  
19 permanent habitat;
- 20 • Use of adaptive management to acquire addition habitat if impacts are predicted to  
21 exceed a specified threshold, additional management measures on mitigation properties  
22 in response to changed circumstances, and brown-headed cowbird management;
- 23 • Use current flycatcher monitoring data and avoid work within 0.25 miles of an active  
24 nest;
- 25 • Monitoring vegetation health and incorporate vegetation mapping;
- 26 • Monitoring ground water levels along certain boundaries of the project area;
- 27 • Monitoring the riverbed and movement of the headcut (see Glossary); and
- 28 • Working with the Service to plan and implement a specific restoration project that will  
29 establish flycatcher habitat on the Rio Grande, outside of the San Marcial Reach.

30 (Service 2005a; Service 2005b, Service 2006; Service 2008a, Service 2008b; Service 2008c).

### 31 **3.6.2 Environmental Consequences**

32 Critical habitat designation has the potential to affect water supply operations if it causes the  
33 following:

- 34 • Limits on reservoir capacity to avoid impacts on designated habitat;
- 35 • Requiring the release of otherwise stored and delivered water;
- 36 • Requirements to purchase replacement water at greatly increased cost; or
- 37 • Disruption of established water contracts and water rights.

1 **3.6.2.1 No Action**

2 Under the No Action Alternative, southwestern willow flycatcher critical habitat would remain  
3 the same as that designated in 2005. The section 7 consultation process would continue as  
4 presently conducted without the additional 38 percent increase in Management Units and 44  
5 percent increase in stream miles of critical habitat.

6 Section 7 consultations would be initiated when projects “may affect” the southwestern willow  
7 flycatcher or adversely modify or destroy 2005 critical habitat. As they relate to water resource  
8 projects, such consultations would likely include:

- 9 • U.S. Army Corps of Engineers – stream restoration, urban development requiring section  
10 404 permits under the Clean Water Act;
- 11 • U.S. Bureau of Land Management — fire suppression, fuel reduction treatments, mining  
12 permits and claims, and renewable energy and development;
- 13 • U.S. Bureau of Reclamation –transportation, storage, and delivery of water;
- 14 • U.S. Fish and Wildlife Service -issuance of section 10 permits for enhancement of  
15 survival, habitat conservation plans, wildlife and sport fish restoration projects, and safe  
16 harbor agreements; and
- 17 • U.S. Forest Service - fire management plans, fire suppression, fuel reduction treatments,  
18 and mining permits and claims.

19 Specifically, several water projects with a Bureau of Reclamation nexus could trigger section 7  
20 consultation, among which are those being considered under the Arizona Water Settlement Act  
21 (AWSA), which is described above in section 3.6.1.

22 Designation of flycatcher critical habitat may affect water use and management in New Mexico  
23 relative to the proposed New Mexico Unit of the Central Arizona Project (CAP). It is not clear  
24 how water will be delivered; however, the New Mexico Interstate Stream Commission states that  
25 building a dam on the Gila River is not foreseeable. During the Service’s 2012 designation for  
26 the spikedace and loach minnow, the New Mexico Interstate Stream Commission noted that the  
27 State of New Mexico may divert but has not committed to diverting water, and that its planning  
28 process to date has not evaluated proposals for a New Mexico Unit of the CAP. At this point, no  
29 additional studies are planned to address the type of storage facility needed to complete the New  
30 Mexico Unit of the CAP. Therefore, because there are no specific plans, the potential impacts of  
31 flycatcher habitat on the New Mexico CAP unit are unknown, and further study of the issue  
32 during the time frame for completion of the decisions regarding the critical habitat designation  
33 would not provide any useful information.

34 Consultations could also take place for operational changes or emergencies within a floodplain,  
35 between the Service and private individuals, a local municipality, or state governments  
36 requesting assistance from the Federal Emergency Management Agency (FEMA). Under  
37 FEMA’s Procedure Memorandum 64, private individuals, local municipalities, or state  
38 governments are required to comply with the ESA independently of the FEMA process for  
39 floodplain activities that have already occurred. For floodplain activities under development,  
40 FEMA will not approve projects until the private, local government, or state government has  
41 complied with the ESA (FEMA 2010).

1 However, these consultations would occur under any of the alternatives, including No Action.  
2 Therefore, this alternative would not have any impacts on water resource management projects  
3 beyond any conservation measures or project modifications resulting from the listing of the  
4 southwestern flycatcher, designation of the 2005 critical habitat, and associated requirements of  
5 section 7 of the ESA.

### 6 **3.6.2.2 Alternative A**

7 Under Alternative A, additional stream segments have been proposed as critical habitat  
8 compared to the existing designation (these are identified in Table 2.4).

9 Therefore, compared to the No Action Alternative, Alternative A (all proposed units, no  
10 exclusions) would result in (1) an increased workload for action agencies and the Service to  
11 conduct re-initiated consultations for ongoing actions in newly proposed areas where flycatchers  
12 have been detected; (2) completing consultations for new projects occurring along the 12  
13 proposed stream segments where flycatcher territories have not yet been detected (post-1991);  
14 (3) new consultations from project proponents that previously did not consult due to a lack of  
15 awareness of the recovery goals for some river segments in the 14 Management Units where  
16 southwestern flycatcher territories are known; and (4) possible project modifications to avoid  
17 adverse modification of critical habitat in areas where a significant alteration of habitat is  
18 proposed.

#### 19 *New and Reinitiated Consultations*

20 Because impacts to PBFs and PCEs that occur within designated critical habitat stream segments  
21 are closely tied to adverse effects to the flycatcher, activities that would require consultation for  
22 critical habitat are primarily the same activities that currently require consultation for the species.  
23 Thus, an increase in the number of section 7 consultations would not come from consideration of  
24 additional activities, but only from the addition of specific geographic areas to the designation.

25 Because critical habitat was previously designated in 2005 and because of the similarities  
26 between the 2005 and 2011 PCEs and PBFs it is not anticipated that projects already evaluated  
27 for critical habitat effects would need to re-initiate consultation.

28 The designation of critical habitat raises awareness of the species presence in an area, and  
29 therefore project proponents who have not requested consultations for actions that may affect the  
30 species may decide to do so in newly proposed critical habitat.

31 In addition, water resource management projects with a Federal nexus on land proposed for  
32 critical habitat in the Powell Management Unit, where breeding flycatchers are currently not  
33 known to occur, could now trigger consultation due to designation of critical habitat. Overall,  
34 there are 12 river segments proposed as critical habitat in seven different Management Units  
35 (totaling about 86 river miles) where flycatcher territories have not been detected since 1991.  
36 These are listed in Table 2.1. The additional consultations would increase administrative costs to  
37 the Service, the action agencies, and any project proponent involved in the consultation process.  
38 As it relates to water resource management projects, such consultations could include:

- 39 • U.S. Army Corps of Engineers – stream restoration, urban development;

- 1 • U.S. Bureau of Land Management — fire suppression, fuel reduction treatments, and  
2 renewable energy and development;
- 3 • U.S. Bureau of Reclamation –transportation, storage, and delivery of water;
- 4 • U.S. Fish and Wildlife Service -issuance of section 10 permits for enhancement of  
5 survival, habitat conservation plans, and safe harbor agreements; and
- 6 • U.S. Forest Service - fire management plans, fire suppression, fuel reduction treatments.

7 Reinitiated consultations are consultations that have been completed to analyze jeopardy to the  
8 species, but which might need to be re-opened to consider the likelihood of destruction or  
9 adverse modification to critical habitat. Consultations on water resource management projects  
10 have occurred for critical habitat areas designated in 2005, but have not occurred for new areas  
11 being proposed as critical habitat. The streams or portions of streams where the southwestern  
12 willow flycatcher has been detected but were not designated as critical habitat in 2005 are listed  
13 in section 3.2.2.2 (Land Use). The types of consultations that could be reinitiated for these areas  
14 are the same as those that could be initiated for stream segments where flycatcher territories have  
15 not been detected since 1991.

#### 16 *Addition of Adverse Modification Analysis to Future Consultations*

17 The consultation analyses for effects on a listed species and effects on critical habitat are similar  
18 in many respects and are parallel processes because the health of a species cannot be  
19 disassociated from the health of its habitat. The analyses are distinct, however, in that the  
20 standard for determining jeopardy concerns only survival of the species, while the standard for  
21 determining adverse modification must also take into account habitat values essential for the  
22 recovery of the species. Adverse modification is considered a higher standard of preventing  
23 substantial loss of the conservation value of the critical habitat segment to allow for flycatcher  
24 recovery goals to be met in a given Management Unit. As a result, there could be some limited  
25 instances where a proposed Federal action could result in adverse modification without resulting  
26 in jeopardy. This could result in additional or more restrictive conservation measures than those  
27 that would be otherwise applied.

28 The additional consultations, and the additional time required to complete consultations that  
29 would only have considered effects on the species, would increase administrative costs to the  
30 Service and to the action agencies. Implementing conservation measures resulting from those  
31 additional consultations could delay water resource projects and would also increase costs for  
32 action agencies. The outcomes cannot be predicted precisely; however, based on past  
33 consultations, types of additional management actions or project modifications that may be  
34 required would include, but not be limited to, the list of measures from previous consultations,  
35 listed in section 3.6.1.

36 As mentioned above, actions that are found not likely to jeopardize the species would in most  
37 cases not destroy or adversely modify critical habitat, because of the close relationship between  
38 the species and its habitat. However, where there are fewer flycatcher territories within a  
39 designated segment, a finding of adverse modification without a finding of jeopardy is possible.  
40 This is based on the fact that any substantial reduction in the conservation value of a proposed  
41 critical habitat segment in a Management Unit with few or no territories could potentially result  
42 in an adverse modification without reaching jeopardy. This would cause an increase in  
43 administrative efforts to develop measures to avoid the adverse modification. Because flycatcher

1 recovery goals are established by Management Unit, the Management Units with the fewest  
2 territories have an increased possibility of an adverse modification finding where a finding of  
3 jeopardy would be unlikely (Salton, Amargosa, San Juan, Powell, Santa Cruz, San Francisco,  
4 Hassayampa/Agua Fria, and lower Rio Grande Management Units).

5 The following are possible project modifications to water resource management projects that  
6 could be sought to avoid adverse modification:

- 7 • Altering dam operations to more closely mimic the natural hydrograph;
- 8 • Altering dam operations to improve the overall longevity of habitat within the  
9 conservation space of a reservoir;
- 10 • Reducing or retiring other water consumptive stressors (such as water diversion or  
11 groundwater pumping) to offset impacts;
- 12 • Increase the width between levees;
- 13 • Improve the abundance and distribution of native riparian vegetation through reducing  
14 land and water management stressors; and
- 15 • Retain riparian vegetation.

16 These project modifications and conservation measures would help conserve PBFs and PCEs and  
17 natural stream hydrology and geomorphology, and would have minor beneficial effects on water  
18 resources and water quality, including floodplains and wetlands.

19 The Service's Economic Analysis projects that the present value of incremental impacts to water  
20 management activities could range from \$1.4 to \$9.6 million assuming a seven percent real  
21 discount rate over 30 years. This figure represents an impact from designation of ALL critical  
22 habitat of approximately \$110,000 to \$720,000 on an annualized basis. These impacts include  
23 the costs of conservation efforts associated with section 7 consultations or the development of  
24 HCPs, as well as administrative efforts to consider potential adverse modification of habitat in  
25 unoccupied units, and to address jeopardy and adverse modification in the San Francisco  
26 management unit, as part of future section 7 consultations

27 Overall, the effects of critical habitat designation on water resource projects can be characterized  
28 as moderate because: (1) additional consultations would be necessary for projects affecting areas  
29 where flycatcher territories have not been detected since 1991 (the 12 such newly-designated  
30 stream segments), leading to conservation measures and potential additional project costs and  
31 delays; (2) additional conservation measures may be implemented to avoid adverse modification  
32 above those that would be necessary to avoid jeopardy on proposed critical habitat segments only  
33 sparsely occupied by flycatcher territories. These would likely be limited to portions of 8 of the  
34 29 Management Units, where such conditions exist; (3) it is unlikely that consultations would be  
35 reinitiated for projects that have previously consulted on critical habitat because of the  
36 similarities between the PCEs and PBFs described in the 2011 proposal and the 2005 critical  
37 habitat designation; (4) any reasonable and prudent alternatives developed under jeopardy  
38 analysis would not likely be changed substantially with the addition of adverse modification  
39 analysis in areas occupied by the flycatcher; (5) few projects would be subject to new  
40 consultations based solely on the presence of newly designated critical habitat, because 15 of 29  
41 of the proposed units are occupied by the southwestern willow flycatcher and were designated as  
42 critical habitat in 2005.

1 **3.6.2.3 Alternative B**

2 For Alternative B (proposed units minus exclusions), the impacts associated with the designation  
3 of critical habitat would be similar to those identified for Alternative A. However, the  
4 exclusions are primarily private and Federal lands associated with the existing Habitat  
5 Conservation Plans (HCPs) and other conservation or management plans for the area. These  
6 exclusions could reduce the economic impacts of designation on water resource management  
7 projects in these areas by requiring fewer consultations overall. This would reduce  
8 administrative costs as well for the Service.

9 In addition, the Pinal Creek Group, represented by Freeport McMoRan, is actively implementing  
10 the Water Quality Assurance Revolving Fund Remedial Action Program required by the Arizona  
11 Department of Environmental Quality Consent Order, issued in April 1998, along lower Pinal  
12 Creek in Gila County, Arizona (Roosevelt Management Unit). These actions occur throughout  
13 the proposed 5.7 km (3.5 mi) of proposed flycatcher critical habitat. The primary purpose of this  
14 Remedial Action Program is the monitoring, extraction, and treatment of contaminated Pinal  
15 Creek groundwater. Implementation of these remedial projects has resulted in improved  
16 abundance, distribution, and quality of riparian habitat for flycatchers.

17 The extraction, treatment, and discharge of Pinal Creek groundwater onto the surface of the Pinal  
18 Creek bed and associated land management actions have been the primary actions which have  
19 helped establish and maintain increased abundance of riparian vegetation. The goal of the  
20 habitat mitigation and monitoring plan associated with the Remedial Action Program is the  
21 maintenance and long-term restoration of riparian habitat, dominated by native tree species.  
22 Exotic plant management has limited the occurrence of flammable plants and reduced the  
23 potential impacts of wildfire. Much of these lands are also fenced properties with limited public  
24 access and actions that could impact vegetation. From 1999 to 2007, these actions have resulted  
25 in a 130 percent increase in total riparian vegetation volume within the 117-ha (290-ac)  
26 mitigation area. We will coordinate with the Pinal Group and Freeport-McMoRan and examine  
27 what flycatcher conservation actions, management plans, and commitments and assurances occur  
28 on these lands to consider Pinal Creek for exclusion from the final designation of flycatcher  
29 critical habitat under section 4(b)(2) of the Act.

30 However, modifications would still be sufficient in number, range, and duration to characterize  
31 the impacts as moderate, for the reasons given for Alternative A.

32 **3.7 Livestock Grazing**

33 **3.7.1 Existing Conditions**

34 The proposed rule and the flycatcher Recovery Plan list improper livestock grazing as a threat to  
35 the existence of the southwestern willow flycatcher and the flycatcher's habitat. The main threat  
36 from livestock grazing occurs when grazing effects flycatcher habitat availability and suitability.  
37 Improper livestock management could reduce the volume and composition of riparian  
38 vegetation; prevent regeneration of riparian plant species; physically disturb nests; alter  
39 floodplain dynamics; facilitate brood parasitism by brown-headed cowbirds; alter watersheds and  
40 soil characteristics; alter stream morphology; dry riparian areas; soil compaction; and facilitate

1 the growth of flammable invasive plant species. In addition, livestock grazing activities in  
2 uplands contribute to surface runoff quantity and intensity, sediment transport, soil chemistry,  
3 and infiltration and water holding capabilities of the watershed; flood flows may increase in  
4 volume while decreasing in duration, and low flows may decrease in volume and increase in  
5 duration. Riparian habitat downstream of upland grazing can become reduced and degraded.  
6 Improper livestock management that could negatively affect flycatcher habitat includes  
7 unrestricted ungulate access and use of riparian vegetation; excessive ungulate use of riparian  
8 vegetation during the non-growing season; overuse of riparian habitat and upland vegetation due  
9 to insufficient herbaceous vegetation available to ungulates; and improper herding, water  
10 development, or other livestock management actions (76 FR 50578; Service 2002).

11 Federal land makes up 32 percent of the proposed critical habitat. Livestock grazing on Federal  
12 land primarily takes place on both U.S. Bureau of Land Management (BLM) and U.S. Forest  
13 Service (USFS) lands, but can also take place on land owned by other Federal agencies including  
14 the Department of Defense. Historically, lands in this region were heavily overgrazed, degrading  
15 watersheds and altering fire regimes. To address overgrazing, Federal grazing permits were  
16 established on both USFS and BLM lands in the early 20th century. The USFS established a  
17 system of range regulation between 1906 and 1907 that included limits on herd sizes, grazing  
18 seasons, areas of use and grazing fees (Lester 2002). The BLM established grazing permits in  
19 1934 with the Taylor Grazing Act of 1934 (BLM 2011). In general, livestock grazing has been  
20 on the decline on BLM- and Forest Service-managed lands in the Southwest. For example,  
21 Animal Unit Months (AUMs) have gone from 18.2 million in 1954 to 8.2 million AUMs in  
22 2010. Drought and market fluctuations are also contributing to declines in livestock grazing.

23 According to the flycatcher Recovery Plan, evidence in the literature and field examples have  
24 indicated that the flycatcher's recovery would be most assured and achieved in the shortest time  
25 by excluding livestock grazing from riparian areas deemed necessary for the recovery of this  
26 species where grazing has been identified as a principal stressor. There is also evidence that  
27 suggests certain types of grazing can be compatible with recovery; however, the data on  
28 livestock grazing and the flycatcher's existence are insufficient to identify what specific grazing  
29 systems are compatible and in which specific circumstances (Service 2002). Exploring the level  
30 of grazing that is compatible with maintenance of suitable flycatcher habitat, including critical  
31 habitat is needed. The Service believes that carefully managed and closely monitored light-to-  
32 moderate levels of grazing within critical habitat during the non-growing season may be  
33 compatible with flycatcher recovery (Service 2002).

34 The Recovery Plan sets forth guidelines for managing livestock grazing for southwestern willow  
35 flycatcher conservation. Guidelines include:

- 36 • Identifying the most important riparian areas for recovery of the flycatcher;
- 37 • Identifying the most appropriate areas for permitting livestock grazing given the  
38 biodiversity concerns in a specific area;
- 39 • Reconfiguring grazing pasture boundaries allowing different management techniques  
40 with varying ecological sensitivity within important flycatcher areas; and
- 41 • Excluding livestock from sites where exclusion would result in the greatest ecological  
42 improvement and least economic loss.

1 Monitoring grazing in flycatcher habitat is an important component to maintaining its suitability.  
2 Guidelines specific to monitoring include:

- 3 • Establishing livestock use numbers based on drought years if monitoring is not annual;
- 4 • With annual monitoring, adjust livestock levels in response to reduced forage availability,  
5 poor vigor and physiological stress on forage plants, and/or decreased cover brought on  
6 by drought conditions; and
- 7 • Institute and/or improve record-keeping and documentation of grazing practices; work  
8 with state universities, private colleges, and research institutions to fund and facilitate  
9 research that better defines the ecological and hydrological effects and sustainability of  
10 livestock grazing in southwestern ecosystem (Service 2002).

11 Additional management techniques that could be used to help increase flycatcher habitat and  
12 quality in livestock grazing include: determining appropriate areas, seasons, and use consistent  
13 within the natural historical norm and tolerances; reducing grazing in upland areas; improving  
14 conditions of upland areas (revegetation); reconfigure grazing units, improve fencing, and  
15 improve monitoring and documentation of grazing practices; manage wild and feral hoofed-  
16 mammals (ungulates) (e.g., elk, horses, burros) to increase flycatcher habitat quality and quantity  
17 (76 FR 50578).

18 The USFS adopted a policy of rangeland adaptive management in 2005. This policy sets limits  
19 on the timing, intensity, frequency, and duration of livestock grazing. These limits are analyzed  
20 in Environmental Assessments that reflect Allotment Management Plans (AMP). In addition,  
21 documents including restocking guidelines and drought policies will be incorporated into  
22 adaptive management strategies. Land and resource management plans (RMPs), which included  
23 Rangeland Management Programs, for 11 National Forests and National Grasslands in the  
24 Southwestern Region were analyzed in a Biological Opinion in 2005. While some LRMPs were  
25 found to have an overall positive effect on the flycatcher, others were found to have adverse  
26 effects on the 2005 listed PCEs or lethal and sublethal Rangeland Standards and Guidelines. An  
27 overall finding of not likely to jeopardize the flycatcher was made for the LRMPs (Service  
28 2005a).

29 To minimize effects to the flycatcher, action agencies have excluded grazing from riparian areas  
30 during certain seasons to avoid impacting the critical growing season of the vegetation.  
31 Exclusion of riparian areas from grazing could result in a reduction in the number of livestock  
32 grazing permits, though action agencies do not always exclude grazing during certain seasons  
33 and there has never been an adverse modification determination for grazing projects. (Service  
34 2009a).

### 35 *Consultations Since Previous Designation*

36 Since 2005, several formal section 7 consultations involving grazing on BLM- and USFS  
37 administered Federal land in the Southwest have occurred. These consultations involved grazing  
38 allotments on several of the Management Units including the Little Colorado, Pahranaagat,  
39 Roosevelt, and San Diego units. At least two of these formal consultations have resulted in  
40 incidental take statements, but no adverse modification to critical habitat was found.

41 In 2009 the USFS conducted section 7 consultations for ongoing grazing on three allotments in  
42 the Tonto National Forest, along the Salt River, which is part of the 2005 critical habitat

1 designation. The Forest Service's proposed action was to provide grazing opportunities and  
2 improve or maintain range and watershed conditions on the three grazing allotments by  
3 employing conservative use and deferred or rest-rotation strategies. Management actions of the  
4 proposed project included but were not limited to adjustments of timing, intensity, frequency,  
5 and duration of grazing. Monitoring was also included in the project design to provide for  
6 adaptive management. The Service determined that critical habitat would not be adversely  
7 affected because the land management strategies under the proposed action were anticipated to  
8 help sustain existing habitat and potentially improve habitat quality and abundance (Service  
9 2009d).

10 In 2010, BLM conducted a section 7 consultation for the proposed Greenwood community  
11 grazing allotment permit renewal, along 3.9 km (2.3 mi.) of critical habitat along the Big Sandy  
12 River. The proposed action included renewal of a 10-year grazing permit, construction of range  
13 improvements needed to implement the grazing plan, and construction of a five-acre enclosure.  
14 3.9 miles of 2005 critical habitat is located within the project area. The Service determined that  
15 renewing the grazing permit would not adversely modify designated southwestern willow  
16 flycatcher critical habitat, based on the following: grazing on critical habit would occur for only  
17 four months outside of the breeding, migration, and nesting period of the flycatcher; the number  
18 of cattle and season of use would be reduced; range improvement construction would occur  
19 outside of riparian habitat; monitoring measures would be implemented; and there would be low  
20 restocking rates (Service 2010a).

21 The USFS and BLM have implemented a variety of land management strategies to improve  
22 habitat conservation on rangeland. Several of these measures serve to minimize impacts to the  
23 southwestern willow flycatcher and 2005 critical habitat. These measures have included:

- 24 • Monitoring seasonal utilization on key forage during the grazing period;
- 25 • Optimizing watershed conditions and vegetative ground cover;
- 26 • Working with permittees to assist in fixing control features such as fencing;
- 27 • Monitoring management approaches and species response including adjusting the timing,  
28 intensity, frequency, and duration of grazing to reach resource objectives;
- 29 • Implementing a rest-rotation grazing system, emphasizing full season rest in pastures  
30 with unsatisfactory riparian conditions;
- 31 • Conducting flycatcher surveys at occupied and/or potential flycatcher locations;
- 32 • Considering acquisition of lands or interests in lands with at-risk or high resource values  
33 or those characteristics that contribute to restoration, healthy watersheds, or other  
34 resource goals in the planning area;
- 35 • Developing and implementing an interagency inventory and monitoring program for  
36 special status plant and animal species;
- 37 • Limiting livestock grazing in sensitive areas through terms and conditions and/or season-  
38 of use restrictions on grazing permits in accordance with a site-specific plan;
- 39 • Implementing range improvements through a range improvement permit between the  
40 permittee and the Service's Partners for Fish and Wildlife Program (PFW); and
- 41 • Conducting monitoring every two to four years during livestock use (Service 2008;  
42 Service 2010a).

43 (Service 2009e; Service 2005a; Service 2005b)

1 According to USFS and BLM staff, range managers can sometimes avoid AUM reductions when  
2 grazing restrictions are put in place for flycatcher through changes in grazing management  
3 practices. For example, in the Apache-Sitgreaves forest, three flycatcher nesting sites were  
4 identified on allotments along the Little Colorado River. Grazing was restricted within a two-  
5 mile radius around these sites during the flycatcher breeding season. Due to the small number of  
6 acres excluded relative to the entire allotment, USFS range managers were able to alter grazing  
7 patterns to avoid these areas during the summer without reducing AUMs. Another example of  
8 this type occurred with the exclusion of grazing during the flycatcher breeding season on the  
9 Bruton River allotment, administered by New Mexico BLM. Initially this allotment was  
10 authorized for 1800 AUMs for 150 head year-round. To avoid reducing AUMs, after the  
11 exclusion of grazing during the flycatcher breeding season, BLM increased the number of head  
12 authorized during rest of the year from 150 to 198 cows, thereby maintaining an authorization of  
13 1800 AUMs (IEc 2012).

### 14 **3.7.2 Environmental Consequences**

15 Proposed activities or conservation measures that affect livestock grazing on critical habitat  
16 include, but are not limited to, permanent or temporary fencing, rest rotation plans, and seasonal  
17 variations in livestock grazing. Actions that would alter the permanence of a breeding site,  
18 including soil erosion or siltation, prescribed fires, groundwater pumping, road and bridge  
19 construction, and destruction of riparian or wetland vegetation, may also affect critical habitat for  
20 the southwestern willow flycatcher thus triggering a section 7 consultation.

#### 21 **3.7.2.1 No Action**

22 Under the No Action Alternative, southwestern willow flycatcher critical habitat would remain  
23 the same as that designated in 2005. The section 7 consultation process would continue as  
24 presently conducted without considerations of the additional 38 percent increase in Management  
25 Units and 44 percent increase in stream miles of critical habitat.

26 Section 7 consultations would be initiated when projects “may affect” the southwestern willow  
27 flycatcher or adversely modify or destroy 2005 critical habitat. Such consultations would  
28 analyze relevant programmatic grazing plans, Livestock Grazing Management Plans, and  
29 Livestock Permits on Federal lands currently occupied by the species and the 2005 critical  
30 habitat. As they relate to livestock grazing, such consultations would likely include:

- 31 • U.S. Bureau of Land Management—Programmatic Livestock Grazing Programs and  
32 management plans, and resource management plans; and
- 33 • U.S. Forest Service— forest plans, grazing allotment management plans, and livestock  
34 grazing and management.

35 Therefore, the No Action Alternative would not have any impacts on livestock grazing beyond  
36 those of any conservation measures or project modifications resulting from the listing of the  
37 southwestern flycatcher, designation of the 2005 critical habitat, and associated requirements of  
38 section 7 of the ESA.

1 **3.7.2.2 Alternative A**

2 Under Alternative A, additional stream segments have been proposed as critical habitat  
3 compared to the existing designation (these are identified in section 2.3).

4 Compared to the No Action Alternative, Alternative A (all proposed units, no exclusions) would  
5 result in (1) an increased workload for action agencies and the Service to conduct re-initiated  
6 consultations for ongoing actions in newly proposed areas where flycatchers have been detected;  
7 (2) completing consultations for new projects occurring along the 12 proposed stream segments  
8 where flycatcher territories have not yet been detected (post-1991); (3) new consultations from  
9 project proponents that previously did not consult due to a lack of awareness of the recovery  
10 goals for some river segments in the 14 Management Units where southwestern flycatcher  
11 territories are known; and (4) possible project modifications to avoid adverse modification of  
12 critical habitat in areas where a significant alteration of habitat is proposed.

13 *New and Reinitiated Consultations*

14 Because impacts to PBFs and PCEs that occur within designated critical habitat stream segments  
15 are closely tied to adverse effects to the flycatcher, activities that could trigger consultation for  
16 critical habitat are primarily the same activities that currently trigger consultation for the species.  
17 Thus, an increase in the number of section 7 consultations would not come from expanding the  
18 list of impact-causing activities, but only from the addition of specific geographic areas to the  
19 designation.

20 Because critical habitat was previously designated in 2005 and because of the similarities  
21 between the 2005 and 2011 PCEs and PBFs it is not anticipated that projects already evaluated  
22 for critical habitat effects would need to re-initiate consultation.

23 The designation of critical habitat raises awareness of the species presence in an area, and  
24 therefore project proponents who have not requested consultations for actions that may affect the  
25 species may decide to do so in newly proposed critical habitat.

26 In addition, Federal agencies permitting livestock grazing on Federal land proposed for critical  
27 habitat, where breeding flycatchers are currently not known to occur, may now decide to  
28 complete consultation due to designation of critical habitat. Overall, there are 12 river segments  
29 proposed as critical habitat in seven different Management Units (totaling about 86 river miles)  
30 where flycatcher territories have not been detected. These are listed in Table 2.1. A portion of  
31 the Paria River is under consideration for designation as a Wild and Scenic River, but this  
32 portion is approximately 1.8km (3 mi.) south of the segment proposed as critical habitat.

33 Federal lands in these areas are primarily managed by the BLM and could trigger consultation  
34 for proposed actions relating to livestock grazing. The additional consultations would increase  
35 administrative costs to the Service, the action agencies, and any project proponent involved in  
36 the consultation process.

37 Reinitiated consultations are consultations that have been completed for impacts to the species,  
38 but which might need to be re-opened to consider the likelihood of destruction or adverse  
39 modification to critical habitat. Since critical habitat was designated in 2005, consultations on  
40 grazing projects have occurred for adverse modification in these areas, but have not occurred for  
41 new areas being proposed as critical habitat. The streams or portions of streams where the

1 southwestern willow flycatcher has been detected but were not designated as critical habitat in  
2 2005 are listed in section 3.2.2.2 (Land Use). As it relates to livestock grazing, such  
3 consultations could include:

- 4 • U.S. Bureau of Land Management—programmatic livestock grazing programs and  
5 management plans, and resource management plans; and
- 6 • U.S. Forest Service— forest plans, grazing allotment management plans, and livestock  
7 grazing and management.

#### 8 *Addition of Adverse Modification Analysis to Future Consultations*

9 The consultation analyses for effects on a listed species and effects on critical habitat are similar  
10 in many respects and are parallel processes because the health of a species cannot be  
11 disassociated from the health of its habitat. The analyses are distinct, however, in that the  
12 standard for determining jeopardy concerns only survival of the species, while the standard for  
13 determining adverse modification must also take into account habitat values essential for the  
14 recovery of the species. Adverse modification is considered a higher standard of preventing  
15 substantial loss of the conservation value of the critical habitat segment to allow for flycatcher  
16 recovery goals to be met in a given Management Unit. As a result, there could be some limited  
17 instances where a proposed Federal action could result in adverse modification without resulting  
18 in jeopardy. This could result in additional or more restrictive conservation measures than those  
19 that would be otherwise applied.

20 The additional consultations, and the additional time required to complete consultations that  
21 would only have considered effects on the species, would increase administrative costs to the  
22 Service and to the action agencies. Implementing conservation measures resulting from those  
23 additional consultations would also increase costs for action agencies. The outcomes cannot be  
24 predicted precisely; however, based on past consultations types of additional management  
25 actions that may be required include, but are not limited to, are:

- 26 • Implement forest-specific actions from the southwestern willow flycatcher Recovery Plan  
27 for grazing management; and
- 28 • Implement a monitoring plan to determine when the actual growing season occurs in the  
29 grazing area to help limit the overuse of riparian areas by livestock (Service 2005b;  
30 Service 2007).

31 Outcomes of consultations for critical habitat could also include reasonable and prudent  
32 alternatives and other conservation measures designed to maintain southwestern willow  
33 flycatcher PBFs and PCEs.

34 Actions that are found not likely to jeopardize the species would in most cases not destroy or  
35 adversely modify critical habitat, because of the close relationship between the species and its  
36 habitat. However, where there are fewer flycatcher territories within a designated segment, a  
37 finding of adverse modification without a finding of jeopardy is possible. This is based on the  
38 fact that any substantial reduction in the conservation value of a proposed critical habitat  
39 segment in a Management Unit with few or no territories could potentially result in an adverse  
40 modification without reaching jeopardy. This would cause an increase in administrative efforts  
41 to develop measures to avoid the adverse modification. Because flycatcher recovery goals are

1 established by Management Unit, the Management Units with the fewest territories have an  
2 increased possibility of an adverse modification finding where a finding of jeopardy would be  
3 unlikely (Salton, Amargosa, San Juan, Powell, Santa Cruz, San Francisco, Hassayampa/Agua  
4 Fria, and lower Rio Grande Management Units).

5 The most prominent possible project modification to livestock grazing that could be sought to  
6 avoid adverse modification is to modify grazing operations through fencing, reconfiguration of  
7 AUMs, off-site water development, and reducing grazing intensity by restricting season of use  
8 and size of grazing herds. The Recovery Plan states that removing stressors, including grazing,  
9 would be the easiest and quickest way to improve habitat conditions, though it also states that  
10 scientists believe grazing can be managed to be compatible with flycatcher recovery. In  
11 addition, Federal agencies have already limited grazing in certain riparian areas –but Biological  
12 Opinions conducted on grazing in existing critical habitat have not always led to excluding  
13 grazing in these areas (Service 2007; Service 2005b). The BLM and USFS have also tried to  
14 avoid reduction in grazing AUMs for private ranchers on Federal land by increasing the number  
15 of head during non-flycatcher breeding months, or by changing grazing management schemes to  
16 avoid excluded riparian corridors (Service 2005c). Therefore, it is not anticipated that flycatcher  
17 conservation activities from designating critical habitat would result in significant further  
18 reductions in permitted or authorized AUMs on Federal lands.

19 Impacts to grazing will result from designation of critical habitat because: (1) additional  
20 consultations would be necessary for projects affecting unoccupied areas (the 12 such newly-  
21 designated stream segments), leading to conservation measures and potential additional project  
22 costs and delays; (2) additional conservation measures may be implemented to avoid adverse  
23 modification above those that would be necessary to avoid jeopardy on proposed critical habitat  
24 segments only sparsely occupied by flycatcher territories. These would likely be limited to  
25 portions of 8 of the 29 Management Units, where such conditions exist; (3) it is unlikely that  
26 consultations would be reinitiated for projects that have previously consulted on critical habitat  
27 because of the similarities between the PCEs and PBFs described in the 2011 proposal and the  
28 2005 critical habitat designation; (4) any reasonable and prudent alternatives developed under  
29 jeopardy analysis would not likely be changed substantially with the addition of adverse  
30 modification analysis in areas occupied by the flycatcher; (5) few projects would be subject to  
31 new consultations based solely on the presence of newly designated critical habitat, because 15  
32 of 29 of the proposed units are occupied by the southwestern willow flycatcher and were  
33 designated as critical habitat in 2005.

34 The Service's Economic Analysis estimates that the present value of incremental impacts to  
35 grazing activities could range from \$2.2 million to \$3.5 million, assuming a seven percent real  
36 discount rate over 20 years, from 2012 through 2031. This figure corresponds to an annualized  
37 impact of approximately \$190,000 to \$310,000. These impacts include the costs associated with  
38 reductions in grazing allowances and riparian fencing, as well as administrative efforts to  
39 consider potential adverse modification of habitat as part of future formal and informal section 7  
40 consultations, and technical assistance, related to grazing allotments in critical habitat areas.  
41 Because grazing activities occur in 27 of the 29 critical habitat units, future administrative costs  
42 are anticipated in most units (IEc 2012).

1 Overall, these effects on livestock grazing can be characterized as moderate because:

- 2 1. Impacts to livestock grazing are unavoidable in these areas. Although these projects can  
3 continue in flycatcher critical habitat, they could trigger project modifications and/or  
4 conservation measures.
- 5 2. Many project modifications to livestock grazing management will produce permanent  
6 adjustments. Grazing may take place outside of the breeding habitat or away from  
7 riparian areas. Riparian vegetation may need to be placed along riparian areas after  
8 grazing, and monitoring for vegetation for several years may take place.
- 9 3. Some of the project modifications, mitigation, and/or conservation measure may take  
10 place after the project has been implemented. For example, monitoring of livestock  
11 grazing within critical habitat would occur throughout the use of the grazing area.

### 12 **3.7.2.3 Alternative B**

13 For Alternative B (proposed units minus exclusions), the impacts associated with the designation  
14 of critical habitat would be similar to those identified for Alternative A, but lesser overall. The  
15 exclusions are primarily non-Federal, tribal, and Federal lands associated with the following:  
16 existing Habitat Conservation Plans (HCPs), Safe Harbor Agreements, and other conservation or  
17 management plans for the area. These exclusions could reduce the economic impacts of  
18 designation on livestock grazing activities in these areas overall, by requiring fewer consultations  
19 overall, and by fewer resulting reductions in grazing permits or AUMs. This would reduce  
20 administrative costs as well for the Service.

21 For example, as referenced in section 3.6.2.3, 5.7km (3.5 mi) of Pinal Creek in Roosevelt  
22 Management Unit is proposed for exclusion under this Alternative, owing to the Water Quality  
23 Assurance Revolving Fund Remedial Action Program required by the Arizona Department of  
24 Environmental Quality Consent Order issued in April 1998 along lower Pinal Creek in Gila  
25 County, Arizona. In addition to providing a more constant surface water and elevated  
26 groundwater table available to grow riparian plants, activities implemented under this Agreement  
27 have limited cattle grazing pressure on vegetation within the Pinal Creek area through fencing  
28 and modification of previous grazing strategies. Cattle grazing is now eliminated during the  
29 growing season (April through October).

30 While exclusions reduce the number of consultations and modifications triggered by section 7  
31 consultations, modifications would still be of sufficient number and permanence to produce  
32 moderate impacts, for the reasons given for Alternative A.

## 33 **3.8 Construction/Development—Roads, Bridges, Dams, 34 Infrastructure, Residential**

### 35 **3.8.1 Existing Conditions**

36 Construction projects such as roads, dams, ponds, bridges, discharge pipes, stormwater detention  
37 basins, dikes, residential units, and levees could cause impacts to southwestern willow flycatcher  
38 critical habitat. During delineation of the proposed critical habitat, the Service made efforts to  
39 avoid heavily developed areas such as lands covered by buildings, pavement, and other

1 structures because these areas lack the physical and/or biological features needed by the  
2 flycatcher. The proposed revision also states that critical habitat does not include manmade  
3 structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on  
4 which they are located. While the Service tried to avoid these areas, these types of developments  
5 are not often found adjacent to rivers within floodplains, and may not be found on recent maps.  
6 Additionally, the scale of the maps the Service prepared under the parameters for publication  
7 within the Code of Federal Regulations may not reflect the removal of such developed lands.  
8 Any such developed lands left inside critical habitat boundaries shown on the maps of this  
9 proposed rule have been excluded by text in the proposed rule and are not proposed for  
10 designation as critical habitat (76 FR 50597).

11 The Recovery Plan states that the primary factor contributing to the decline of the flycatcher is  
12 the loss and modification of flycatcher breeding habitat. Construction through urban  
13 development is one activity that has resulted in the loss and modification of flycatcher habitat in  
14 the Southwest (Service 2002).

#### 15 *Consultations Since Previous Designation*

16 Formal consultations to analyze the effects of construction or maintenance projects on the  
17 southwestern willow flycatcher and 2005 critical habitat have previously been conducted by:

- 18 • U.S. Army Corps of Engineers (USACE);
- 19 • U.S. Forest Service (USFS);
- 20 • U.S. International Boundary and Water Commission (USIBC);
- 21 • U.S. Air Force (USAF);
- 22 • Bureau of Land Management (BLM);
- 23 • U.S. Fish & Wildlife Service (intraService consultations);
- 24 • U.S. Bureau of Reclamation; and
- 25 • Federal Highway Administration (FHWA).

26 For example, the USIBC addressed the southwestern willow flycatcher for the Morelos  
27 Diversion Dam Channel Capacity Restoration Project in 2006. The USIBC incorporated  
28 conservation efforts into the project that included:

- 29 • Not removing willows and cottonwood trees from certain sites within the proposed  
30 project;
- 31 • Limiting construction activities to seasons outside of the migration and breeding season  
32 of the flycatcher;
- 33 • Fencing and signage around sensitive habitat;
- 34 • Monitoring construction activities to help develop mitigation measures;
- 35 • Use of best management practices (BMPs) to avoid storm water pollution issues and  
36 erosion;
- 37 • Avoiding sensitive habitats in staging areas; and
- 38 • Replacing habitat.

39 The Service found the project was not likely to jeopardize the continued existence of the  
40 flycatcher (Service 2006a).

1 In 2006 the FHWA addressed the flycatcher in consultation for the proposed replacement of the  
2 8th Avenue Bridge over the Gila River in Safford, Graham County, Arizona. FHWA developed  
3 several conservation measures to address the effects to the flycatcher and its habitat. These  
4 measures include:

- 5 • Avoiding the breeding season during removal of riparian vegetation; and
- 6 • Planting cottonwood poles or other vegetation as part of the mitigation under the Section  
7 404 Nationwide Permit that Graham County would obtain (Service 2006b).

8 The Service concluded that the project was not likely to jeopardize the flycatcher nor was critical  
9 habitat in the area likely to be adversely modified or destroyed. This determination was based on  
10 the conservation efforts incorporated into the project and the size and duration of the project  
11 (Service 2006b).

12 Also in 2006, the USACE conducted consultation for the Cotton Lane Bridge, Bank  
13 Stabilization, and Habitat Modification at the Gila River. The Maricopa County Department of  
14 Transportation (MCDOT) had applied for a permit under Section 404 of the Clean Water Act to  
15 construct the proposed project. Conservation measures developed by the USACE and MCDOT  
16 to address the effects to the flycatcher and its habitat were developed in a mitigation plan and  
17 they included:

- 18 • On-site habitat enhancement and creation of wetlands in three separate areas;
- 19 • Soil tests to determine that soil salinity levels are within levels need by desired  
20 vegetation;
- 21 • Use of hand or mechanized planting techniques;
- 22 • Mimicking natural densities and patterns observed in and around breeding flycatcher sites  
23 for restored cottonwood/willow galleries;
- 24 • Implementation of flood irrigation in the appropriate season;
- 25 • Directing any flood irrigation will be through various canals during the breeding season  
26 to help create moist soil conditions;
- 27 • Implementation of pre-construction surveys;
- 28 • Use of locally obtained pole plantings for cottonwood and willow plantings;
- 29 • Monitoring the mitigation site quarterly for five years following completion unless after  
30 two years the area meets the 80 percent survivorship requirement; and
- 31 • Quarterly monitoring reports to the USACE by the MCDOT.

32 The Service concluded that the project was not likely to jeopardize the flycatcher and critical  
33 habitat would not be adversely modified (Service 2006c).

### 34 **3.8.2 Environmental Consequences**

35 Construction or development near or next to flycatcher habitat causes both direct and indirect  
36 impacts to flycatcher habitat, including alteration of natural river functions; additional stress to  
37 riparian areas; removal of suitable habitat through removal of brush and/or other mid-story or  
38 shrub-canopy vegetation; increased species mortality from automobiles; introduction and  
39 facilitation of the spread of invasive plant species; and increased run-off, waste, and other  
40 chemicals (Service 2002). Additionally, residential development in flycatcher habitat can  
41 increase the presence of predators such as cowbirds and house cats. Real estate development

1 also increases demand for domestic, commercial, and industrial water use, transportation  
2 infrastructure, and recreational opportunities.

3 Nearly all impacts to residential development activities occur in California management units,  
4 with the majority of incremental costs stemming from impacts in the Santa Clara Management  
5 Unit, where flycatcher critical habitat has not been previously designated. The majority of all  
6 impacts to development activities are due to lost land value due to set-asides of otherwise  
7 developable land.

### 8 **3.8.2.1 No Action**

9 Under the No Action Alternative, southwestern willow flycatcher critical habitat would remain  
10 the same as that designated in 2005. The section 7 consultation process would continue as  
11 presently conducted without the additional 38 percent increase in Management Units and 44  
12 percent increase in stream miles of critical habitat.

13 Section 7 consultations would be initiated when projects “may affect” the southwestern willow  
14 flycatcher or adversely modify 2005 critical habitat. As they relate to construction, such  
15 consultations would likely include:

- 16 • U.S. Bureau of Land Management — land and resource management plans;
- 17 • U.S. Bureau of Reclamation –transportation, storage, and delivery of water;
- 18 • U.S. Department of Homeland Security – border security infrastructure and operations;
- 19 • U.S. Department of Transportation – highway and bridge construction and maintenance;
- 20 • U.S. Fish and Wildlife Service – habitat conservation plans, and National Wildlife  
21 Refuge planning; and
- 22 • U.S. Forest Service — travel-management plans.

23 Therefore, this alternative would not have any impacts on construction projects beyond those of  
24 any conservation measures or project modifications resulting from the listing of the southwestern  
25 flycatcher, designation of the 2005 critical habitat, and associated requirements of section 7 of  
26 the ESA.

### 27 **3.8.2.2 Alternative A**

28 Under Alternative A, additional stream segments have been proposed as critical habitat  
29 compared to the existing designation (these are identified in section 2.3).

30 Compared to the No Action Alternative, Alternative A (all proposed units, no exclusions) would  
31 result in (1) an increased workload for action agencies and the Service to conduct re-initiated  
32 consultations for ongoing actions in newly proposed areas where flycatchers have been detected;  
33 (2) completing consultations for new projects occurring along the 12 proposed stream segments  
34 where flycatcher territories have not yet been detected (post-1991); (3) new consultations from  
35 project proponents that previously did not consult due to a lack of awareness of the recovery  
36 goals for some river segments in the 14 Management Units where southwestern flycatcher  
37 territories are known; and (4) possible project modifications to avoid adverse modification of  
38 critical habitat in areas where a significant alteration of habitat is proposed.

1 *New and Reinitiated Consultations*

2 Because impacts to PBFs and PCEs that occur within designated critical habitat stream segments  
3 are closely tied to adverse effects to the flycatcher, activities that could trigger consultation for  
4 critical habitat are primarily the same activities that currently trigger consultation for the species.  
5 Thus, an increase in the number of section 7 consultations would not come from expanding the  
6 list of impact-causing activities, but only from the addition of specific geographic areas to the  
7 designation.

8 Because critical habitat was previously designated in 2005 and because of the similarities  
9 between the 2005 and 2011 PCEs and PBFs it is not anticipated that projects already evaluated  
10 for critical habitat effects would need to re-initiate consultation.

11 The designation of critical habitat raises awareness of the species presence in an area, and  
12 therefore project proponents who have not requested consultations for actions that may affect the  
13 species may decide to do so in newly proposed critical habitat.

14 In addition, construction projects with a Federal nexus on land proposed for critical habitat in the  
15 Powell Management Unit where breeding flycatchers are currently not known to occur could  
16 now trigger consultation due to designation of critical habitat. Overall, there are 12 river  
17 segments proposed as critical habitat in seven different Management Units (totaling about 86  
18 river miles) where flycatcher territories have not been detected since. These are listed in Table  
19 2.1. Construction projects with a Federal nexus in these areas could now decide to engage in  
20 consultation. The additional consultations would increase administrative costs to the Service, the  
21 action agencies, and any project proponent involved in the consultation process.

22 Reinitiated consultations are consultations that have been completed to analyze jeopardy to the  
23 species, but which might need to be re-opened to consider the likelihood of destruction or  
24 adverse modification to critical habitat. Since critical habitat was designated in 2005,  
25 consultations on construction projects have occurred for adverse modification in these areas, but  
26 have not occurred for new areas being proposed as critical habitat. The streams or portions of  
27 streams where the southwestern willow flycatcher has been detected but were not designated as  
28 critical habitat in 2005 are listed in section 3.2.2.2 (Land Use). As it relates to construction and  
29 development, such reinitiated consultations could include:

- 30 • U.S. Bureau of Land Management — land and resource management plans, mining  
31 permits, and energy development;
- 32 • U.S. Bureau of Reclamation –transportation, storage, and delivery of water;
- 33 • U.S. Department of Homeland Security – border security infrastructure and operations;
- 34 • U.S. Department of Transportation – highway and bridge construction and maintenance;
- 35 • U.S. Fish and Wildlife Service – section 10 enhancement of survival permits, habitat  
36 conservation plans, safe harbor agreements, and National Wildlife Refuge planning; and
- 37 • U.S. Forest Service — travel-management plans.

38 *Addition of Adverse Modification Analysis to Future Consultations*

39 The consultation analyses for effects on a listed species and effects on critical habitat are similar  
40 in many respects and are parallel processes because the health of a species cannot be  
41 disassociated from the health of its habitat. The analyses are distinct, however, in that the

1 standard for determining jeopardy concerns only survival of the species, while the standard for  
2 determining adverse modification must also take into account habitat values essential for the  
3 recovery of the species. Adverse modification is considered a higher standard of preventing  
4 substantial loss of the conservation value of the critical habitat segment to allow for flycatcher  
5 recovery goals to be met in a given Management Unit. As a result, there could be some limited  
6 instances where a proposed Federal action could result in adverse modification without resulting  
7 in jeopardy. This could result in additional or more restrictive conservation recommendations  
8 than those that would be otherwise applied.

9 The additional consultations, and the additional time required to complete consultations that  
10 would only have considered effects on the species, would increase administrative costs to the  
11 Service and to the action agencies. Implementing conservation measures and recommendations  
12 resulting from those additional consultations could delay construction projects and would also  
13 increase costs for action agencies. The outcomes cannot be predicted precisely; however, based  
14 on past consultations, types of additional management actions that may be required include, but  
15 are not limited to, those measures resulting from previous consultations, as identified above.

16 Actions that are found to not jeopardize the species would in most cases not destroy or adversely  
17 modify critical habitat, because of the close relationship between the species and its habitat.  
18 However, where there are fewer flycatcher territories within a designated segment, a finding of  
19 adverse modification without a jeopardy finding is possible. This is based on the fact that any  
20 substantial reduction in the conservation value of a proposed critical habitat segment in a  
21 Management Unit with few or no territories could potentially result in an adverse modification  
22 without reaching jeopardy. This would cause an increase in administrative efforts to develop  
23 measures to avoid the adverse modification. Because flycatcher recovery goals are established  
24 by Management Unit, the Management Units with the fewest territories have an increased  
25 possibility of an adverse modification finding where a finding of jeopardy would be unlikely  
26 (Salton, Amargosa, San Juan, Powell, Santa Cruz, San Francisco, Hassayampa/Agua Fria, and  
27 lower Rio Grande Management Units). In these cases, potential project modifications are similar  
28 to project modifications taken to avoid jeopardy to the species and are listed above.

29 The Service's Economic Analysis projects that:

- 30 • Construction projects such as roads, dams, bridges, or other transportation infrastructure  
31 could produce incremental impacts ranging from \$5.8 million over 20 years (or \$510,000  
32 on an annualized basis, assuming a seven percent discount rate). This estimate includes  
33 the administrative and project modification costs associated with eight road and bridge  
34 construction and maintenance projects expected to occur in stream reaches that are not  
35 occupied by flycatcher, or areas where flycatcher presence is not well known and not  
36 currently addressed. It also includes the cost of administrative effort for 88 informal  
37 consultations and two technical assistances that may occur in these areas over the next 20  
38 years. Finally, the total includes the additional, incremental cost of considering adverse  
39 modification in 71 formal consultations, 759 informal consultations, and 51 technical  
40 assistance calls anticipated in areas that are occupied, and where the species' presence is  
41 currently addressed (IEc 2012).
- 42 • Residential development could produce incremental impacts of \$810,000 over 20 years.  
43 This total impact estimate includes the following project modification costs potentially

1 incurred on the unoccupied Little Tujunga Canyon stream segment: \$37,000 in lost land  
2 value due to set-asides of otherwise developable land; conservation efforts associated  
3 with the projects at a cost of \$140,000 over 20 year, and regulatory time delay impacts  
4 associated with a two-year delay that may occur if the designation triggers review under  
5 CEQA, estimated at \$4,100 in present value terms. Future administrative costs  
6 associated with this project, and those associated with addressing adverse modification  
7 for an additional 37 projects in stream reaches that were previously designated as  
8 flycatcher habitat, are also included. Finally additional incremental administrative costs  
9 stem from the effort associated with addressing adverse modification for an estimated  
10 344 informal and 104 technical assistances. In total, the estimated incremental  
11 administrative costs are \$630,000 in present value terms. On an annualized basis, total  
12 incremental impacts are estimated to be \$71,000 (IEc 2012).

13 Overall, the effects of critical habitat designation on construction projects can be characterized as  
14 moderate because:

- 15 1. Impacts to some construction projects are unavoidable in these areas. Although these  
16 projects can continue in flycatcher critical habitat, they could be subject to project  
17 modifications and/or conservation measures.
- 18 2. Many project modifications to construction projects will produce permanent adjustments.  
19 Additional measures may take place, such as placing riparian vegetation along riparian  
20 areas after construction and monitoring vegetation for several years. Construction  
21 projects may also require additional funds for conservation activities benefiting the  
22 flycatcher.
- 23 3. Some conservation measures may take place after the project has been implemented. For  
24 example, buying and maintaining lands that offset impacts to the flycatcher would also  
25 take place after the project has been implemented.

26 These impacts result because: (1) additional consultations would be necessary for projects  
27 affecting unoccupied areas (the 12 such newly-designated stream segments), leading to  
28 conservation measures and potential additional project costs and delays; (2) additional  
29 conservation measures may be implemented to avoid adverse modification above those that  
30 would be necessary to avoid jeopardy on proposed critical habitat segments only sparsely  
31 occupied by flycatcher territories. These would likely be limited to portions of 14 of the 29  
32 Management Units, where such conditions exist; (3) it is unlikely that consultations would be  
33 reinitiated for projects that have previously consulted on critical habitat because of the  
34 similarities between the PCEs and PBFs described in the 2011 proposal and the 2005 critical  
35 habitat designation; (4) any reasonable and prudent alternatives developed under jeopardy  
36 analysis would not likely be changed substantially with the addition of adverse modification  
37 analysis in areas occupied by the flycatcher; (5) few projects would be subject to new  
38 consultations based solely on the presence of newly designated critical habitat, because 15 of the  
39 29 Management Units designated as critical habitat in 2005 are also known to have the  
40 occurrence of breeding flycatchers.

### 41 **3.8.2.2 Alternative B**

42 For Alternative B (proposed units minus exclusions), the impacts associated with the designation  
43 of critical habitat would be similar to those identified for Alternative A. The exclusions are

1 primarily private, tribal, and Federal lands associated with existing Habitat Conservation Plans  
 2 (HCPs), Safe Harbor Agreements, conservation easements, or other conservation or management  
 3 plans for the area. These exclusions could reduce the economic impacts of designation on  
 4 construction and development activities in these areas by requiring fewer consultations overall.  
 5 This would reduce administrative costs as well for the Service. However, modifications would  
 6 still be of sufficient number and permanence to produce moderate impacts, for the reasons given  
 7 for Alternative A.

### 8 **3.9 Tribal Trust Resources**

#### 9 **3.9.1 Existing Conditions**

10 Tribal trust resources are natural resources retained by or reserved for Indian tribes through  
 11 treaties, statutes, judicial decisions, and executive orders. Indian lands are not Federal public  
 12 lands or part of the public domain, and thus are not subject to public Federal land laws. Indian  
 13 tribes manage Indian land in accordance with tribal goals and objectives, within the framework  
 14 of applicable laws; however, the U.S. is entrusted with Tribal trust resources for the benefit of  
 15 Indian tribes. Secretarial Order #3206 outlines the responsibilities of the USFWS when actions  
 16 taken under the authority of the Endangered Species Act may affect Indian lands and tribal trust  
 17 resources. The agency’s responsibilities include ensuring that Indian tribes do not bear a  
 18 disproportionate burden for the conservation of listed species.

19 Under the existing 2005 rule, 537 acres (217 ha) of tribal areas were designated as flycatcher  
 20 critical habitat, after exclusions were adopted from the 2004 proposal.

21 Table 3.7 shows the census-based socioeconomic information for affected tribes in 2010.

22 **Table 3.7 Census Socioeconomic Information for Affected Tribes (2010)**

<i>Area/Tribal Land Area</i>	<i>Population</i>	<i>Unemployment Rate<sup>(1)</sup></i>	<i>Per Capita Income</i>	<i>Poverty Rate<sup>(2)</sup></i>
<b>National Level Information</b>				
USA	308,745,538	7.9%	\$27,334	13.8%
<b>State Level Information</b>				
Arizona	6,392,017	7.7%	\$25,680	15.3%
California	37,253,956	9.0%	\$29,188	13.7%
Colorado	5,029,196	6.8%	\$30,151	12.2%
Nevada	2,700,551	9.0%	\$27,589	11.9%
New Mexico	2,059,179	7.2%	\$22,966	18.4%
Utah	2,763,885	5.9%	\$23,139	10.8%
<b>Tribal Level Information</b>				
Barona Reservation, CA	640	13.6%	\$43,396	10.5%
Chemehuevi Reservation, CA	308	13.0%	\$17,001	50.2%
Colorado River Indian Reservation, AZ, CA	8,764	5.1%	\$17,432	26.3%
Fort Mojave Reservation and Off-	1,477	11.3%	\$21,661	28.6%

<i>Area/Tribal Land Area</i>	<i>Population</i>	<i>Unemployment Rate</i> <sup>(1)</sup>	<i>Per Capita Income</i>	<i>Poverty Rate</i> <sup>(2)</sup>
Reservation Trust Land, AZ, CA, NV				
Fort Yuma Indian Reservation, CA, AZ	2,197	18.9%	\$9,512	36.6%
Hualapai Indian Reservation and Off-Reservation Trust Land, AZ	1,335	15.1%	\$12,209	41.2%
La Jolla Reservation, CA	476	13.2%	\$24,167	9.4%
Navajo Nation Reservation and Off-Reservation Trust Land, AZ, NM, UT	173,667	15.6%	\$10,547	37.7%
Ohkay Owingeh, NM	6,309	13.6%	\$18,034	24.3%
Pala Reservation, CA	1,315	6.6%	\$19,549	32.4%
Ramona Village, CA <sup>(3)</sup>	13	NA	NA	NA
Rincon Reservation, CA	1,215	9.7%	\$24,840	20.9%
San Carlos Reservation, AZ	10,068	19.8% <sup>(5)</sup>	\$10,222	46.0%
San Ildefonso Pueblo and Off-Reservation Trust Land, NM	1,752	12.9%	\$26,131	9.0%
Santa Clara Pueblo, NM	11,021	7.4%	\$22,182	22.8%
Santa Ysabel Reservation, CA	330	30.9%	\$14,684	15.0%
Southern Ute Reservation, CO	12,153	5.4%	\$27,714	8.4%
Viejas Reservation, CA	520	8.5%	\$27,158	22.1%
Yavapai-Apache Nation Reservation, AZ	2,290 <sup>(4)</sup>	12.3% <sup>(5)</sup>	\$10,275	42.4%
Zuni Reservation, NM, AZ	7,891	8.8%	\$10,081	37.0%

**Notes:**

- (1) Unemployment rate provided by the Census is the number of unemployed persons, age 16 and over, as a percent of the total civilian labor force.
- (2) Poverty rate represents the percent of individuals whose income in a 12 month period was below the poverty level. Poverty thresholds are the same for all parts of the country, but vary depending on the applicable family size, age of householder, and number of related children under 18. Poverty thresholds are shown at <http://www.census.gov/hhes/www/poverty/data/threshld/>.
- (3) 2010 Census data are not available for the Ramona Reservation, beyond a population estimate of 13.
- (4) Public comment of Susan B. Montgomery, Special Legal Counsel to the Yavapai-Apache Nation, in response to the Proposed Rule for designation of flycatcher critical habitat. October 14, 2011.
- (5) The Arizona Unemployment Statistics Program reports 2010 unemployment for the tribes as 23.1 percent and 26.8 percent for the Yavapai-Apache and San Carlos Apache, respectively. The San Carlos Apache Tribe has stated that they believe that this estimate is low. A study by the San Carlos Apache Tribe found that the unemployment rate is 76 percent. Letter from Joe Sparks, Sparks, Tehan & Ryley, P.C. re: Request for Information Regarding Possible Designation of Critical Habitat for the Southwestern Willow Flycatcher, dated September 7, 2004.

**Sources:** U.S. Census Bureau, 2010 American Community Surveys.

1 *Consultations Since Previous Designation*

- 2 Since 2005, the total number of tribal activities subject to formal section 7 consultations
- 3 involving potential effects to the flycatcher is difficult to completely determine because tribal
- 4 lands may be impacted by projects conducted by other agencies, and typically, other Federal

1 agencies consult on behalf of tribes. However, at least two linked projects on tribal lands have  
2 led to consultations since 2005.

3 In 2010, the Federal Highway Administration (FHWA) entered into formal consultation with the  
4 Service on improvements proposed by the Arizona Department of Transportation (ADOT) along  
5 US Highway 70 on the San Carlos Apache Reservation, at two different locations near where  
6 nesting flycatchers were known to occur: the Gila River Bridge and the San Carlos River Bridge.  
7 In both locations the action consisted of bridge replacement with associated improvements. As  
8 part of each proposed action, ADOT developed conservation measures to avoid or minimize  
9 impacts to the flycatcher, and offered to provide funding through an Intergovernmental  
10 agreement with the San Carlos Apache Tribe, for flycatcher surveys and development of a site  
11 restoration plan. Both consultations resulted in incidental take statements, findings of no  
12 jeopardy, and reasonable and prudent measures consisting of reproductive monitoring,  
13 documentation of cowbird trapping, and other habitat use and changes (Service 2010b; Service  
14 2010c).

### 15 **3.9.2 Environmental Consequences**

16 Activities that may affect critical habitat, when carried out, funded, or authorized on tribal lands,  
17 should result in consultation for the flycatcher. These activities are described in section 3.1.1.

#### 18 **3.9.2.1 No Action**

19 Under the No Action Alternative, impacts on Tribal Trust resources within and along riparian  
20 corridors containing flycatcher habitat would not change. The section 7 consultation process  
21 would continue as presently on the 72,000+ acres of critical habitat located on tribal lands,  
22 without the additional tribal currently proposed. The number of potential consultations would  
23 continue to be the same as under current conditions. The USFWS would continue to conform to  
24 Secretarial Order #3206 through collaboration and communication with tribal sovereignties with  
25 all potential consultations.

#### 26 **3.9.2.2 Alternative A**

27 The proposed designation of critical habitat under Alternative A would include approximately  
28 66,963 acres (27,100 hectares) of tribal lands, or approximately 13 percent of all land proposed  
29 for critical habitat designation.

30 The 14 tribal areas where new critical habitat is proposed—beyond that designated in 2005--are  
31 shown in Table 3.8. New PCH on tribal areas spans approximately 66,963 acres (27,100  
32 hectares). Many of these proposed areas were proposed originally in 2004, but then excluded  
33 from the final designation, and many are similarly being considered for exclusion in Alternative  
34 B. The full table of tribal areas where critical habitat is designated (including existing critical  
35 habitat from the 2005 designation) is given in Appendix C.

36

1  
2

**Table 3.8 Tribal Areas in Newly Proposed Critical Habitat Segments  
(not designated in 2005)**

<i>Management Unit</i>	<i>Water Body</i>	<i>County</i>	<i>State</i>	<i>Indian Reservation Name</i>	<i>PCH Area within Reservation</i>	
					<i>Acres</i>	<i>Hectares</i>
Parker-Southerly International Boundary	Colorado River	La Paz/San Bernadino / Riverside	AZ/CA	Colorado River Indian Reservation	14,052	5,687
Hoover-Parker	Colorado River	Mohave/ Clark/ San Bernadino	AZ/NV/ CA	Fort Mojave Indian Reservation	6,556	2,653
Parker-Southerly International Boundary	Colorado River	Yuma/ Imperial	AZ/CA	Quechan (Fort Yuma) Indian Reservation	1,400	567
Middle Colorado	Lake Mead - Colorado River	Mohave	AZ	Hualapai Indian Reservation	1,752	709
San Juan	San Juan River	San Juan	NM	Navajo Indian Reservation	525	212
San Juan	San Juan River	San Juan	UT	Navajo Indian Reservation	5,098	2,063
Little Colorado	Zuni River	Cibola	NM	Ramah Navajo Indian Reservation	543	220
Upper Gila	San Carlos Reservoir - Gila River	Pinal	AZ	San Carlos Indian Reservation	21,845	8,840
San Juan	Los Pinos River	La Plata	CO	Southern Ute Reservation	2,629	1,064
Little Colorado	Zuni River	McKinley	NM	Zuni Indian Reservation	3,571	1,445
Little Colorado	Rio Nutria	McKinley	NM	Zuni Indian Reservation	2,969	1,202
San Diego	San Diego River	San Diego	CA	Capitan Grande Band of Diegueno Mission Indians	204	83
Hoover-Parker	Lake Havasu - Colorado River	San Bernadino/ Mohave	CA/AZ	Chemehuevi Indian Reservation	5,815	2,353
Santa Ana	Bautista Creek	Riverside	CA	Ramona Indian Reservation	4	2
<b>Total</b>					<b>66,963</b>	<b>27,100</b>

3

1 Compared to the No Action Alternative, Alternative A (all proposed units, no exclusions) would  
2 result in (1) an increased workload for action agencies and the Service to conduct re-initiated  
3 consultations for ongoing actions in newly proposed areas where flycatchers have been detected;  
4 (2) an increased number of additional section 7 consultations for new projects affecting newly  
5 designated critical habitat on tribal lands. Additional consultations would be conducted, beyond  
6 those that would be conducted without critical habitat designation, because Federal agencies  
7 would consult on activities in areas designated as critical habitat that previously they may not  
8 have considered to be occupied and/or because of the additional information, guidance, or  
9 clarification in the critical habitat revision; and (3) possible project modifications to avoid  
10 adverse modification of critical habitat in areas where a significant alteration of habitat is  
11 proposed.

12 The likely effect of increasing the number of section 7 consultations would be the conservation  
13 or maintenance of flycatcher PBFs and PCEs. Indirect, potentially adverse impacts that could  
14 result from critical habitat designation on Tribal Trust lands would be: (1) increased Federal  
15 control and involvement in tribal land management by the tribes and pueblos whose lands would  
16 contain designated critical habitat stream segments; and (2) decreased control or ability by the  
17 tribes and pueblos to manage their lands for their own benefit.

18 Activities that currently occur or are anticipated to occur on Tribal lands within designated  
19 critical habitat for the flycatcher include, but are not limited to, the following:

- 20 • Hunting;
- 21 • Cultural uses;
- 22 • Development (housing, roads, infrastructure associated with tourism and recreation,  
23 utility transmission lines, gas wells and pipelines, etc.);
- 24 • Vegetation management (exotic/invasive plant removal and prescribed burns);
- 25 • Wildlife conservation activities;
- 26 • Wetland/riparian restoration activities;
- 27 • Agricultural and water use;
- 28 • Livestock grazing; and
- 29 • Flood control-related infrastructure and activities;

30 Additionally, the economies of tribes within the areas proposed as flycatcher critical habitat are  
31 poorer than their respective regional economies, making these communities particularly  
32 vulnerable to economic impacts associated with increased regulatory burden, where such burden  
33 truly exists. Future impacts resulting from flycatcher conservation efforts on tribal lands include  
34 administrative costs of section 7 consultations, surveys and monitoring of habitat, development  
35 and implementation of flycatcher management plans, modifications to development activities,  
36 and potential additional costs in time and money to implement project modifications to  
37 restoration activities and water projects.

38 The Service's Economic Analysis projects that the incremental economic impacts of critical  
39 habitat designation for the flycatcher on activities conducted on tribal lands is estimated at  
40 \$660,000 over 20 years (or \$59,000 on an annualized basis, assuming a 7 percent discount rate).  
41 All of these costs are administrative in nature. **This figure represents the impact from  
42 designation of ALL critical habitat** (IEc 2012).

1 **3.9.2.3 Alternative B**

2 Alternative B would exclude the following tribal land segments from the final designation of  
3 flycatcher critical habitat under section 4(b)(2) of the Act. For a complete discussion of the basis  
4 for excluding each area, consult the proposed critical habitat designation (76 FR 50542-50629).

5 *Santa Ana Management Unit*

6 Ramona Band of Cahuilla, California

7 The Ramona Band of Cahuilla, California, occurs within the Santa Ana Management Unit,  
8 California. A proposed essential segment of Bautista Creek occurs on lands managed by the  
9 Ramona Band of Cahuilla.

10 *San Diego Management Unit*

11 La Jolla Band of Luiseno Indians

12 The La Jolla Band of Luiseno Indians has a segment of proposed flycatcher critical habitat along  
13 the San Luis Rey River within the San Diego Management Unit, in northern San Diego County,  
14 California. The La Jolla Tribe has developed a Southwestern Willow Flycatcher Management  
15 Plan (SWFMP).

16 Rincon Band of Luiseno Mission Indians of the Rincon Reservation

17 The Rincon Band of Luiseno Mission Indians land contains a proposed segment of flycatcher  
18 critical habitat along the San Luis Rey River within the San Diego Management Unit, in northern  
19 San Diego County, California. The Rincon Band of Luiseno Mission Indians has developed a  
20 SWFMP that addresses implementation of a variety of protective flycatcher habitat measures.

21 Pala Band of Luiseno Mission Indians and the Capitan Grande Band of Diegueno Mission  
22 Indians of California

23 The Pala Band of Luiseno Mission Indians and the Capitan Grande Band of Diegueno Mission  
24 Indians of California occur within the San Diego Management Unit, San Diego County,  
25 California. The Pala Band of Luiseno Mission Indian's Tribal Land occurs along a segment of  
26 proposed flycatcher critical habitat on the San Luis Rey River. A proposed essential segment of  
27 the San Diego River occurs on the land of the Capitan Grande Band of Diegueno Mission  
28 Indians of California (jointly managed by the Barona Group of Capitan Grande Band of Mission  
29 Indians and the Viejas [Baron Long] Group of Capitan Grande Band of Mission Indians).

30 *Salton Management Unit*

31 Iipay Nation of Santa Ysabel

32 The Iipay Nation of Santa Ysabel, California (formerly the Santa Ysabel Band of Diegueno  
33 Mission Indians of the Santa Ysabel Reservation), occurs along an essential segment of proposed  
34 flycatcher critical habitat on San Felipe Creek in the Salton Management Unit, San Diego  
35 County, California.

1 *Little Colorado River Management Unit*

2 Navajo Nation and Zuni Pueblo

3 The Navajo Nation and Zuni Pueblo contain segments of the Rio Nutria and Zuni River proposed  
4 as flycatcher critical habitat in McKinley County, New Mexico. Both river segments occur  
5 within the Little Colorado River Management Unit.

6 *Middle Colorado Management Unit*

7 Hualapai Tribe

8 Hualapai Tribal land contains a proposed flycatcher critical habitat segment of the Colorado  
9 River on the south side of the channel in the Middle Colorado Management Unit above Lake  
10 Mead in Mohave County, Arizona. The Hualapai Tribe has finalized a SWFMP that was  
11 adopted by the Hualapai Tribal Council.

12 *Hoover to Parker Dam Management Unit*

13 Fort Mojave Tribe

14 Fort Mojave Tribal land contains a proposed Colorado River segment of flycatcher critical  
15 habitat in the Hoover to Parker Dam Management Unit above Lake Havasu in Mohave County,  
16 Arizona. The Fort Mojave Tribe has finalized a SWFMP. In addition, flycatcher management  
17 on Tribal Land may work in conjunction with additional flycatcher management associated with  
18 the LCR MSCP.

19 Chemehuevi Tribe

20 Chemehuevi Tribal land contains a proposed Colorado River segment of flycatcher critical  
21 habitat along the west side of the channel in the Hoover to Parker Dam Management Unit  
22 adjacent to the Colorado River and Lake Havasu in Mohave County, Arizona. The Chemehuevi  
23 Tribe has finalized a SWFMP.

24 *Parker Dam to Southerly International Border Management Unit*

25 Colorado River Indian Tribes (CRIT)

26 The CRIT contains a proposed Colorado River segment of flycatcher habitat in the Parker Dam  
27 to Southerly International Border Management Unit in La Paz County, Arizona. The Colorado  
28 River Indian Tribes have finalized a SWFMP.

29 Quechan (Fort Yuma) Indian Tribe

30 Quechan Tribal land contains a proposed Colorado River segment of flycatcher critical habitat in  
31 the Parker Dam to Southerly International Border Management Unit near the City of Yuma in  
32 Yuma County, Arizona. The Quechan Tribe has completed a SWFMP.

33 *San Juan Management Unit*

34 Navajo Nation and Southern Ute Tribe

35 The Navajo Nation contains two different essential segments of the San Juan River in San Juan  
36 County, Utah, and San Juan County, New Mexico. Additionally, the Southern Ute Tribe

1 contains an essential segment of the Los Pinos River in La Plata County, Colorado. All three of  
2 these river segments occur within the San Juan Management Unit.

3 *Verde Management Unit*

4 Yavapai Apache Nation

5 The Yavapai Apache Nation contains Verde River segments of proposed flycatcher critical  
6 habitat in the Verde Management Unit in Yavapai County, Arizona. The Yavapai Apache  
7 Nation has completed a SWFMP, which addresses and presents assurances for flycatcher habitat  
8 conservation.

9 *Upper Gila Management Unit*

10 San Carlos Apache Tribe

11 San Carlos Apache Tribe land contain proposed flycatcher critical habitat within the  
12 conservation space of San Carlos Lake and the Gila River upstream from San Carlos Lake, all  
13 within the Upper Gila Management Unit in Gila County, Arizona. The San Carlos Apache Tribe  
14 has finalized a SWFMP.

15 *Upper Rio Grande Management Unit*

16 San Ildefonso Pueblo

17 The San Ildefonso Pueblo contains proposed flycatcher habitat along the Rio Grande within the  
18 Upper Rio Grande Management Unit in Santa Fe County, New Mexico. The San Ildefonso  
19 Pueblo has conducted a variety of voluntary measures, restoration projects, and management  
20 actions to conserve the flycatcher and its habitat on their lands. Multiple-use practices of the  
21 river and riparian habitat resources are an important component of Tribal activities and culture,  
22 and as a result, the Pueblo has taken steps to manage all the components of the riparian habitat.

23 Santa Clara Pueblo

24 The Santa Clara Pueblo contains proposed flycatcher critical habitat along the Rio Grande within  
25 the Upper Rio Grande Management Unit in Rio Arriba County, New Mexico. The Santa Clara  
26 Pueblo has conducted a variety of voluntary measures, restoration projects, and management  
27 actions to conserve the flycatcher and its habitat on their lands. Santa Clara Pueblo made a  
28 commitment to develop an integrated resources management plan to address multi-use,  
29 enhancement, and management of their natural resources.

30 San Juan Pueblo (Ohkay Owingue)

31 The San Juan Pueblo contains proposed flycatcher critical habitat along the Rio Grande within  
32 the Upper Rio Grande Management Unit in Rio Arriba County, New Mexico. The San Juan  
33 Pueblo has conducted a variety of voluntary measures, restoration projects, and management  
34 actions to conserve the flycatcher and its habitat on their lands.

35 Designation of critical habitat under Alternative B would decrease the number of re-initiated  
36 section 7 consultations on tribal lands and decrease the number of additional section 7  
37 consultations on tribal lands, when compared to Alternative A. The impacts to PCEs would be  
38 the same under Alternative B as Alternative A, as exclusion areas would include those areas  
39 containing critical habitat stream segments that are managed under Tribal Conservation Plans

1 after completion, review, and implementation of flycatcher-specific management plans. The  
2 potential for the indirect adverse impacts described under Alternative A would be lower under  
3 Alternative B because of the fewer acres of critical habitat within Tribal Trust lands that are  
4 Federally managed. It is important to note that the USFWS policy regarding critical habitat on  
5 tribal lands is that natural resources are better managed under tribal authorities, policies, and  
6 programs than through Federal regulation.

7 In summary, the action alternatives would: (1) increase the number of re-initiated ESA section 7  
8 consultations for ongoing projects in newly proposed areas where flycatchers have been  
9 detected; (2) increase the number of additional section 7 consultations for proposed projects  
10 affecting newly designated critical habitat on tribal lands; (3) maintain southwestern willow  
11 flycatcher critical habitat primary constituent elements (PCEs) on tribal lands; (4) increase the  
12 likelihood of greater expenditures of time and Federal funds of government agencies to develop  
13 measures to prevent both adverse effects and adverse modification to maintain critical habitat on  
14 tribal lands; and (5) increase the likelihood of greater expenditure of non-Federal funds by  
15 project proponents to complete section 7 consultations and to develop reasonable and prudent  
16 alternatives (as a result of adverse modifications) to maintain designated critical habitat.

17 The USFWS is presently receiving habitat management plans for the conservation of the  
18 flycatcher from tribes and pueblos. Based upon the evaluation of the habitat management plans  
19 developed by the tribes and pueblos and/or their partnership with the USFWS, tribal lands could  
20 be excluded from the final rule. The effects of designating additional exclusion areas on tribal  
21 lands would be similar to those described above, but to a greater degree. If agreed upon by the  
22 USFWS and tribes within the recovery area, excluding more acres of stream segments from  
23 critical habitat designation through tribal and pueblo habitat management and conservation plans  
24 would further reduce the numbers of re-initiated section 7 consultations for ongoing projects and  
25 new section 7 consultations for new projects and further reduce the potential for adverse  
26 economic impacts to tribes described under Alternative A.

## 27 **3.10 Soil and Mineral Resources**

### 28 **3.10.1 Existing Conditions**

29 Soils in the areas proposed for flycatcher critical habitat are mostly of alluvial origin, meaning  
30 they were formed by sediments deposited by flowing water. The soils are of mixed particle size,  
31 ranging from sandy to coarse loamy to fine silt. The critical habitat areas generally have gradual  
32 slopes and lie within the floodplain, allowing for fine sediment deposits during floods from the  
33 streams within it (USDA 2011; USDA 2006).

34 Mineral resources that are present within the proposed critical habitat designation are varied  
35 across the region, occurring at past, current, or potential mining sites. The most common  
36 mineral resource occurrences include sand and gravel, copper, geothermal, gold, silica, and stone  
37 (USGS 2005). Mining operations contribute significantly to the economies of all states in which  
38 designated flycatcher critical habitat occurs (see the Economic Analysis for specific discussion).  
39 Sand and gravel mining operations occur or have occurred in some of the units in all six states  
40 containing proposed critical habitat. Copper and geothermal mining operations occur or have  
41 occurred in some of the Arizona units. Gold mining has occurred in some of the critical habitat

1 areas in Arizona and Colorado. Silica and stone mining occurs or has occurred in some of the  
2 critical habitat areas in Arizona and California (USGS 2005).

### 3 *Consultations Since Previous Designation*

4 The Bureau of Land Management (BLM) requested consultation in 2007 for the flycatcher and a  
5 number of other species regarding the Arizona Strip Resource Management Plan. The Arizona  
6 Strip project included designated flycatcher habitat in the Bill Williams and Virgin Management  
7 Units. The resulting Biological Opinion (BO) advised in discretionary conservation  
8 recommendations that mineral resource exploration and development adjacent to occupied  
9 habitat could disturb the flycatcher from breeding, feeding, and/or sheltering activities.  
10 Disturbances could lead to reduced reproductive success, nest abandonment, failure to hatch or  
11 fledge young, and/or reduced fitness from loss of foraging efficiency. The Service  
12 recommended that the BLM encourage seasonal restrictions (April 1 to September 30) on mining  
13 operations within or adjacent to occupied flycatcher breeding habitat (Service 2007).

14 In the 2005 flycatcher critical habitat rule, degradation of watershed and soil characteristics are  
15 described as an example of possible effects of grazing to critical habitat. Flycatcher critical  
16 habitat on the Salt River within the Roosevelt Management Unit lies within the Tonto National  
17 Forest. The US Forest Service (USFS) initiated consultation with the Service in 2007 on three  
18 grazing allotments in Tonto National Forest. Grazing potentially degrades the soil, therefore  
19 would likely cause adverse impacts to flycatcher critical habitat. The USFS attempted to avoid  
20 these impacts by including in their proposed action that cattle will not be allowed to graze in  
21 potential, suitable, or occupied habitat flycatcher habitat along the Salt River (Service 2009e).

### 22 **3.10.2 Environmental Consequences**

23 Activities that could occur on or near critical habitat units that affect soil and mineral resources  
24 include: groundwater pumping, surface water diversion, river damming and water storage;  
25 livestock grazing and management; mining; agriculture; flood control; recreation developments  
26 and activities including off-road vehicle use, trail development, campground, and hiking use.  
27 The activities involving changes to water flow or availability including groundwater pumping,  
28 surface water diversion, river damming and water storage would impact the soils by changing  
29 their moisture and nutrient levels which are critical for the development, abundance, distribution,  
30 maintenance, and germination of the plants that grow into flycatcher habitat. Specifically regarding the  
31 operation of dams, natural levels of salt and other minerals are often artificially elevated in  
32 downstream flow and in downstream alluvial soils. At the dam site, the slowing of the water and  
33 increased surface area leads to an increase in evaporation of water, leaving the remaining water  
34 with higher concentrations salt and other minerals. These changes in soil chemistry can then  
35 affect plant community makeup. Dams also trap sediments, causing less sediments to be  
36 available for deposition in downstream areas. As described earlier, fine sediments are important  
37 to seed germination. Livestock grazing and management, off-road vehicle use, trail  
38 development, campground use, and hiking impact soils by compaction leading to decreased  
39 water infiltration, increased runoff, prevention of seedling germination, and removal of the fine  
40 sediment soil surface which is critical to the flycatcher habitat (Service 2002).

41 Several mines, primarily located outside of proposed critical habitat, draw surface water or  
42 utilize groundwater wells located in the vicinity of critical habitat for industrial purposes. In

1 some areas, mining infrastructure crosses Federal lands in the vicinity of proposed critical  
2 habitat, and thus has a potential Federal nexus for section 7 consultation. In addition, mining  
3 facilities can require a variety of Federal permits, potentially generating a Federal nexus for  
4 consultation.

5 There are no hydrologic models available that assess the role of any specific mining facility's  
6 groundwater pumping or surface water diversions in determining stream flow or other hydrologic  
7 conditions within critical habitat. Therefore, because data on the effects of diversions of water  
8 for mining activities on the flycatcher and flycatcher habitat are limited, the potential impacts of  
9 flycatcher critical habitat on mining activities are difficult to project (IEc 2012).

### 10 **3.10.2.1 No Action**

11 Under the No Action Alternative, no changes would be made to the 2005 designation of critical  
12 habitat. The section 7 consultation process would continue as presently conducted without the  
13 additional 38 percent increase in Management Units and 44 percent increase in stream miles of  
14 critical habitat. The number of potential consultations would continue to be the same as under  
15 current conditions and these consultations would also encourage conservation measures that  
16 develop, enhance and/or maintain healthy riverine and riparian environments. As they relate to  
17 soils and minerals, such actions would likely include:

- 18 • U.S. Army Corps of Engineers—Bridge projects, stream restoration, vegetation  
19 management, urban development
- 20 • U.S. Bureau of Land Management—Fire suppression, land and resource management  
21 plans, livestock grazing and management plans, mining permits, renewable energy  
22 development
- 23 • U.S. Forest Service—Vegetation management, noxious weed treatments, fire-  
24 management plans, fire suppression, forest plans, livestock-grazing allotment  
25 management plans, mining permits
- 26 • U.S. Bureau of Reclamation—Transportation, storage, and delivery of water
- 27 • U.S. Department of Homeland Security—Border security operations
- 28 • U.S. Department of Transportation—Highway and bridge construction and maintenance
- 29 • U.S. Fish and Wildlife Service—Habitat conservation plans, safe harbor agreements, and  
30 National Wildlife Refuge planning (Service 2011a)

31 Consequently, the No Action Alternative would have no impact on soils and mineral resources,  
32 beyond those of any conservation measures resulting from the presence of existing critical  
33 habitat and associated requirements of section 7 of the ESA.

### 34 **3.10.2.2 Alternative A**

35 Compared to the No Action Alternative, Alternative A would likely increase the number of  
36 section 7 consultations proportionally with the increase in stream miles to the critical habitat  
37 designation. The proposed designation under Alternative A is for 2,162 stream miles in 29  
38 management units.

39 Overall, 51 mine sites fall within proposed critical habitat—24 in AZ, 11, in NM, 6 in CO, 7 in  
40 CA, and 3 in UT; more than half of these are sand and gravel operations (IEc 2012). The

1 Arizona Department of Mines and Mineral Resources (ADMMR) reports that these sand and  
2 gravel mines are typically small operations that extract streambed material in or near river  
3 channels with perennially low water levels. This type of mining activity does not utilize large  
4 volumes of surface water. The Service maintains that although sand and gravel operations may  
5 disturb habitat over relatively small areas, they are unlikely to pose a major threat to the species.  
6 As a result, it is unlikely that sand and gravel mines will face significant constraints on their  
7 operations, despite their location within critical habitat.

8 Only six mine sites within proposed critical habitat are active producer sites. As described in  
9 more detail in the Economic Analysis, none of the sites is likely to encounter constraints on  
10 operations—particularly, water usage—due to designation of critical habitat (IEc 2012).  
11 Proposed stream reaches that are located adjacent to or which provide water to mining operations  
12 include the San Francisco, Gila, San Pedro, Big Sandy, and Verde Rivers, and Pinal Creek, all of  
13 which are considered to be occupied by the flycatcher. Of these segments, the San Francisco  
14 River, Lower Gila River, and Pinal Creek are proposed as critical habitat for the first time.

15 Some mining operations located outside of critical habitat use water that located within such  
16 habitat. The active mining operations that are known to utilize water drawn from proposed  
17 critical habitat are the Bagdad mine (Bill Williams MU), Tyrone Mine (Upper Gila MU), and  
18 Morenci Mine (San Francisco MU).

19 Actions in those areas considered to be occupied by the flycatcher would be subject to section 7  
20 consultations even without the additional proposed critical habitat. However there are 12 river  
21 segments proposed as critical habitat within 7 different Management Units where flycatcher  
22 territories have not been detected since 1991 and therefore have not been the focus of section 7  
23 consultations. These streams are listed in Table 2.1.

24 The effects of critical habitat designation on soil and mineral resources are expected to be  
25 beneficial. While the exact number of projects that may be subject to new or re-initiated  
26 consultations are unknown, any projects that do occur in the newly proposed area will be subject  
27 to conservation measures developed to reduce and minimize impacts to the PBFs and PCEs.  
28 Additional conservation efforts resulting from the increase in section 7 consultations will help  
29 reduce and minimize the effects to natural soil and mineral substrates.

30 Compared to the No Action Alternative, Alternative A (all proposed units, no exclusions) would  
31 result in an increased workload for action agencies and the Service to (1) conduct re-initiated  
32 consultations for ongoing actions in newly proposed areas where flycatchers have been detected;  
33 (2) complete consultations for projects occurring along the 12 proposed habitat river segments  
34 where flycatcher territories have not been detected; (3) initiate new consultations for projects that  
35 did not consult previously because they were unaware of the recovery goals for river segments  
36 where territories are known; and (4) possible project modifications to avoid adverse modification  
37 of critical habitat in areas where a significant alteration of habitat is proposed.

### 38 *New and Reinitiated Consultations*

39 Actions which could initiate new consultation include the following:

- 1 • U.S. Bureau of Land Management—Fire suppression, land and resource management  
2 plans, livestock grazing and management plans, mining permits, renewable energy  
3 development; and
- 4 • U.S. Forest Service—Vegetation management, noxious weed treatments, fire-  
5 management plans, fire suppression, forest plans, livestock-grazing allotment  
6 management plans, mining permits.

7 Projects on Federal land or requiring Federal permits along the 12 proposed habitat river  
8 segments where flycatcher territories have not been detected could now trigger consultation due  
9 to designation of critical habitat. The Paria River in UT is in the Powell Management Unit  
10 which currently does not have any critical habitat designated. This area is likely to be the subject  
11 of increased consultations. The main landowner in the Powell Unit is the Bureau of Land  
12 Management (BLM) so actions involving cattle grazing and recreation on their lands could  
13 initiate consultation and affect soil resources in this newly designated Management Unit. The  
14 Paria River area also includes sand and gravel deposits which have been mined in the past  
15 (USGS 2005). Any new mining activities on BLM land would be subject to section 7  
16 consultation. The additional consultations would increase administrative costs to the Service, the  
17 action agencies, and any project proponent involved in the consultation process.

18 Reinitiated consultations are consultations that have been completed to analyze jeopardy to a  
19 listed species, but are re-opened to consider adverse modification to newly designated critical  
20 habitat. This would occur in areas where the flycatcher had been detected but which have not  
21 been designated as critical habitat. These streams are listed in section 3.2.2.2 (Land Use). The  
22 reinitiated consultations would increase administrative costs to the Service, the action agencies,  
23 and any project proponent involved in the consultation process. These streams include Federal  
24 lands managed by USFS, BLM, and USFWS; therefore, the same actions as mentioned above on  
25 these areas could result in reinitiated consultations. In addition, USFWS actions in the Ash  
26 Meadows Riparian Areas on the Ash Meadows National Wildlife Refuge could result in  
27 reinitiated consultations.

28 In addition there are certain stream segments that have enlarged critical habit areas, so  
29 consultation that has been conducted for one portion of a stream may need to be reinitiated to  
30 incorporate the larger critical habitat. The Tonto National Forest Grazing Plan, as discussed  
31 previously, initiated consultation for critical habitat on the Salt River. The Roosevelt Lake  
32 critical habitat area that is proposed under Alternative A includes new areas within the Tonto  
33 National Forest that were excluded in the 2005 designation; therefore, Alternative A could cause  
34 consultation on this plan to be re-initiated.

### 35 *Addition of Adverse Modification Analysis to Future Consultations*

36 The consultation analyses for impacts on a listed species and impacts on critical habitat are  
37 similar in most respects because the health of a species is strongly linked to the health of its  
38 habitat. Where consideration of adverse modification is added to consultations on jeopardy to  
39 the species, the additional time required to complete consultations that previously did not have to  
40 consider habitat would increase administrative costs to the Service and to the action agencies.  
41 Implementing conservation measures resulting from those expanded consultations would also  
42 increase costs for action agencies. The outcomes cannot be specified in advance; however, based

1 on past consultations, types of project modifications that may be required include, but are not  
2 limited to, are:

- 3 • Altering dam operations to more closely mimic the natural hydrograph;
- 4 • Reducing or retiring of other water consumptive stressors (such as water diversion or  
5 groundwater pumping) to offset impacts;
- 6 • Modify grazing operations through fencing, reconfiguration of grazing units, off-site  
7 water development, and seasons of use;
- 8 • Modify ORV management through fencing, signage, education, areas and timing of use;
- 9 • Improve the development of native riparian vegetation through reducing land-and  
10 water-management stressors; and
- 11 • Retain riparian vegetation. (Service 2011a)

12 In most cases, actions that are found not likely to jeopardize the species would also be found not  
13 likely to destroy or adversely modify critical habitat. However, where there are fewer flycatcher  
14 territories within a designated river segment, such a finding is possible. In these cases, potential  
15 project modifications would be similar to the above list.

16 In summary, the effects of critical habitat designation on soils and mineral resources are  
17 expected to be beneficial because increased section 7 consultations would likely reduce or  
18 minimize adverse impacts to PBFs, PCEs and designated critical habitat. Adverse impacts  
19 would likely be minor, because: (1) few projects would be subject to new consultations based  
20 solely on the presence of newly designated critical habitat, because 21 of 29 of the proposed  
21 units are occupied by the southwestern willow flycatcher and were designated as critical habitat  
22 in 2005; (2) few additional consultations would be necessary for projects affecting unoccupied  
23 areas (the 12 such newly-designated stream segments), leading to conservation measures and  
24 potential additional project costs and delays; (3) it is unlikely that consultations would be  
25 reinitiated for projects that have previously consulted on critical habitat because of the  
26 similarities between the PCEs and PBFs described in the 2011 proposal and the 2005 critical  
27 habitat designation; (4) any reasonable and prudent alternatives developed under jeopardy  
28 analysis would not likely be changed substantially with the addition of adverse modification  
29 analysis in areas occupied by the flycatcher; (5) though some additional conservation measures  
30 may be implemented to avoid adverse modification above those that would be necessary to avoid  
31 jeopardy on proposed critical habitat segments only sparsely occupied by flycatcher territories,  
32 this would likely be limited to portions of 8 of the 29 Management Units, where such conditions  
33 exist.

### 34 **3.10.2.3 Alternative B**

35 For Alternative B (proposed units minus exclusions), the impacts associated with the designation  
36 of critical habitat would be similar to those identified for Alternative A. The exclusions are  
37 primarily private, Federal, and tribal lands associated with existing Habitat Conservation Plans  
38 (HCPs), conservation easements, other management plans for the area, and conservation  
39 partnerships that would be encouraged by designation of, or exclusion from, critical habitat.  
40 These exclusions could reduce the economic impacts of designation in these areas by requiring  
41 fewer consultations overall. This would reduce administrative costs for the Service and the  
42 action agencies. For example, the Roosevelt Lake critical habitat, discussed in Alternative A as

1 being expanded, would not be expanded in Alternative B. This is because the area is covered  
 2 under the Salt River Project Roosevelt HCP. Therefore under Alternative B, the Tonto National  
 3 Forest Grazing Plan would not require reinitiation of consultation. The areas that are excluded  
 4 are expected to have protections already in place for the PCEs, which would reduce and  
 5 minimize effects to soil and mineral resource. The overall impacts on soil and mineral resources  
 6 would therefore still be characterized as beneficial.

7 **3.11 Recreation**

8 **3.11.1 Existing Conditions**

9 Recreational use is concentrated on Federal lands managed by the BLM, Forest Service, NPS,  
 10 and BOR, as well as state and tribal lands. Water- and land-based recreational activities within  
 11 the flycatcher recovery area include, but are not limited to, camping, swimming, bicycling,  
 12 horseback-riding, hiking, sport-fishing, rock climbing, off-highway vehicle (OHV) use, hunting,  
 13 bird watching, sightseeing, bicycling, river rafting, and personal watercraft use.

14 Table 3.9 displays recreational areas on public lands (Federal and non-Federal) included in  
 15 existing critical habitat. All segments are also proposed in the new designation except the Little  
 16 Colorado—East Fork. All Recreation areas containing existing critical habitat are included in  
 17 the 2011 proposed designation.

18 **Table 3.9 Recreational Areas that contain Existing (2005) Critical Habitat**

<i>Critical Habitat Stream Segment</i>	<i>Recreational Area</i>	<i>Federal and/or State landowners</i>
<b>California</b>		
Bear Creek	San Bernardino NF	USFS
Santa Ynez River-Mono Creek	Los Padres NF	USFS
Isabella Lake	Sequoia NF	USFS
Santa Ysabel Creek	Cleveland NF; San Dieguito River Park	USFS; San Diego County
<b>Nevada</b>		
Muddy River	Overton State WMA	BLM; NV Fish & Game Commission
Virgin River	Overton State WMA**	BLM ; NV Fish & Game Commission
<b>Arizona</b>		
Lake Havasu-Bill Williams River	Rawhide Mountains Wilderness**	BLM
Little Colorado – East Fork (not proposed in 2011)	Apache-Sitgreaves NF	USFS
Little Colorado River	Apache-Sitgreaves NF	USFS
San Pedro River		BLM; State of AZ
Verde River	Prescott, Coconino, & Tonto NFs; Tuzigoot National Monument;	USFS; NPS; Arizona State Parks;

<i>Critical Habitat Stream Segment</i>	<i>Recreational Area</i>	<i>Federal and/or State landowners</i>
	Dead Horse Ranch State Park	
Salt River	Tonto NF	USFS
<b>New Mexico</b>		
Rio Grande	Rio Grande Wild and Scenic River; Leasburg Dam, Percha Dam, and Caballo Lake State Parks, Wild River & Orilla Verded Rec. Areas, La Jolla and Bernalillo Waterfowl Management Areas	FWS; BLM, BOR; NM Dept of Game & Fish;
Rio Grande del Rancho	Carson National Forest	USFS
Elephant Butte Reservoir (full pool) – Rio Grande		NM Energy, Minerals, and Natural Resources Department, BLM

1  
2 Riparian areas receive disproportionately high recreational use in the arid Southwest because of  
3 the shade, water, and/or aesthetic value(s). Riparian areas near urban areas receive even greater  
4 use than those in more remote locales. Increasing human populations, coupled with the  
5 attraction of limited riparian areas in the Southwest for recreation, make flycatcher habitat  
6 vulnerable to this activity. Table 3.10 displays the population growth from 2000 to 2010 in the  
7 six-state study area; and projected population growth for 2030.

8 **Table 3.10 Past and Projected Population Growth in States with Proposed**  
9 **Critical Habitat, 2000-2030**

<i>State</i>	<i>2000</i>	<i>2010</i>	<i>2030 Projections Population</i>	<i>Percent Change, 2000-2010</i>	<i>Projected Percent Change, 2000-2030</i>
Arizona	5,130,632	6,392,017	10,712,397	24.5	108.7
California	33,871,648	37,253,956	46,444,861	9.98	37.1
Colorado	4,301,261	5,029,196	5,792,357	16.9	34.6
Nevada	1,998,257	2,700,551	4,282,102	35.1	114.3
New Mexico	1,819,046	2,059,179	2,099,708	13.2	15.4
Utah	2,233,169	2,763,885	3,485,367	23.7	54.8
<b>Total</b>	<b>49,354,013</b>	<b>56,198,784</b>	<b>72,789,792</b>	<b>13.8</b>	<b>47.4</b>

10 Source: U.S. Census Bureau, 2000, 2005, and 2010.

11 Table 3.11 illustrates recreational visitor use for 2000 through 2010 in national parks with both  
12 existing and proposed critical habitats. As with Table 3.8, new national parks located in  
13 proposed critical habitat but not in the existing designation are indicated with an asterisk. While  
14 population increases often correspond with increased demand of access to public lands for

1 recreational purposes, the trend does not apply here: the populations of Arizona and Nevada  
 2 grew fastest from 2000-2010 compared to the other four states in the study area; however Grand  
 3 Canyon National Park, Tuzigoot National Monument, and Tumacacori National Historic Park in  
 4 Arizona all experienced a decrease in annual visits from 2000-2010. Similarly, Lake Mead  
 5 National Recreation Area in Nevada also experienced a decrease during this same ten-year  
 6 interval. While annual visits to National Parks in the flycatcher critical habitat decreased slightly  
 7 overall, annual visits did increase at Mesa Verde National Park in Colorado.

8 **Table 3.11 Annual Visits to National Park Lands Located in Existing and**  
 9 **Proposed Critical Habitat, 2000-2010.**

<i>National Park</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>Percent Change, 2000-2005</i>	<i>Percent Change, 2005-2010</i>	<i>Percent Change, 2000-2010</i>
<b>Arizona</b>						
Grand Canyon NP	4,460,228	4,401,522	4,388,386	-1.3	-1.4	-1.61
Tuzigoot NM	113,525	108,262	103,274	-4.6	-4.6	-9.0
Tumacacori NHP*	53,706	44,022	39,866	-18.0	-9.4	-25.7
Lake Mead NRA	8,755,005	7,692,438	7,080,758	-12.1	-7.9	-19.1
<b>Colorado</b>						
Mesa Verde NP	452,287	498,333	559,712	10.1	12.3	23.7
<b>Total</b>	<b>13,834,751</b>	<b>12,744,577</b>	<b>12,171,996</b>	<b>-0.1</b>	<b>0</b>	<b>-0.1</b>

10 Source: NPS 2011b.

11 Below-average water levels in lakes and reservoirs could reduce the number or limit the  
 12 projected number of boaters and water-based tourism. Statistical analysis of tourism at Lake  
 13 Powell on the Colorado River suggests that for every 1 percent drop in reservoir levels, visits fall  
 14 by 5 percent. If numbers are comparable for other reservoirs in the Southwest, such as Lake  
 15 Mead (NV) or Elephant Butte (NM), dry conditions would magnify decreases in tourism and  
 16 economic impacts on local communities (Ponnalaru, 2005).

17 The National Visitor Use Monitoring (NVUM) program provides science-based estimates of the  
 18 volume and characteristics of recreation visitation to the National Forest System. A National  
 19 Forest Visit is defined as the entry of one person upon a national forest to participate in  
 20 recreation activities for an unspecified period of time. The most recent annual visitation data is  
 21 presented in the Table 3.12 below.

1 **Table 3.12 Annual National Forest Visitation Estimates in Existing Critical**  
 2 **Habitat**

<i>National Forest</i>	<i>National Forest Visits</i>
Gila (2005)	360,000
Cleveland (2009)	480,000
Tonto (2008)	4,801,000
Prescott (2007)	1,187,000
Rio Grande (2005)	613,000
Carson (2008)	901,000
Coronado (2007)	2,453,000
Angeles (2006)	3,181,000
Sequoia (2006)	686,000
Apache-Sitgreaves (2007)	1,521,000
Los Padres (2009)	924,000
San Bernardino (2009)	2,443,000
<b>Total</b>	<b>18,363,000</b>

3 Source: USFS 2005-2009.

4 Table 3.13 displays annual use for all BLM-administered recreation lands in each of the six  
 5 states in which critical habitat has been designated. Visitor use increased from 2000-2010 on  
 6 BLM-administered lands in all states except Utah, where the number of visitor days decreased by  
 7 31 percent. However, from 2005-2010 the number of visitor days decreased in California,  
 8 Nevada, New Mexico, and Utah. The number of visitor days did not change from 2005 to 2010  
 9 for the six states combined. This visitor data suggests that recreational use has intensified on  
 10 public lands in the Southwest, but has plateaued since 2005.

11 **Table 3.13 Annual Use of Recreational Sites on BLM-administered Public**  
 12 **Lands in Each State, in Visitor Days<sup>1</sup>, 2000–2010**

<i>State</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>Percent Change, 2000-2005</i>	<i>Percent Change, 2005-2010</i>	<i>Percent Change, 2000-2010</i>
Arizona	1,076,000	13,958,000	14,204,000	11.9	1.7	<b>12.2</b>
California	10,610,000	17,246,000	17,181,000	62.5	-.37	<b>61.9</b>

<i>State</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>Percent Change, 2000-2005</i>	<i>Percent Change, 2005-2010</i>	<i>Percent Change, 2000-2010</i>
Colorado	3,206,000	4,776,000	6,139,000	48.9	28.5	<b>91.4</b>
Nevada	4,110,000	5,560,000	4,571,000	35.2	-17.7	<b>11.2</b>
New Mexico	1,667,000	1,997,000	1,825,000	19.7	-8.6	<b>9.4</b>
Utah	7,812,000	5,757,000	5,363,000	-26.3	-6.8	<b>-31.3</b>
<b>Total</b>	<b>28,481,000</b>	<b>49,294,000</b>	<b>49,283,000</b>	<b>73.0</b>	<b>0.00</b>	<b>73.0</b>

1 Source: BLM 2000-2010.

2 <sup>1</sup>One Visitor Day represents an aggregate of twelve visitor hours to a site or an area.

3 Past impacts on recreational opportunities within the recovery area resulting from flycatcher  
4 conservation actions include: potential periodic inundation of the South Fork Wildlife Area  
5 (SFWA; less than 1,100 acres inundated upstream from Isabella Lake) by Isabella Lake and a  
6 prohibition on overnight camping and motorized vehicle travel in the SFWA in the Kern  
7 Management Unit, and closures within the Tonto National Forest that limit vehicle use and fires  
8 on both the Salt River and on Theodore Roosevelt Lake at the Tonto Creek end (Roosevelt  
9 Management Unit).

10 *Consultations Since Previous Designation*

11 During 1994–2004, section 7 formal consultations involving recreation activities on effects to the  
12 flycatcher have occurred for two actions, involving the NPS at Lake Mead NRA in  
13 Arizona/Nevada and the USACE in Los Angeles, California. An incidental take of the  
14 subspecies was anticipated at Lake Mead, with harm and loss of greater than 5% of  
15 occupied/suitable habitat due to harassment of breeding and migrating birds by recreationists.

16 Since the 2005 designation, there have been at least four formal consultations on recreation-  
17 related actions involving effects to the flycatcher. Two of the formal consultations were with the  
18 Forest Service, and the other two were with BLM.

19 In 2007 BLM requested consultation for the Arizona Strip Resource Management Plan in the  
20 Hoover-to-Parker Management Unit in Arizona, including the Lake Mead NRA on the Colorado  
21 River which is part of the proposed 2011 critical habitat. The Service issued a Biological  
22 Opinion (BO) stating that the proposed recreation (and vegetation) management plans would  
23 result in the failure of one nesting attempt every three years due to habitat loss and disturbance  
24 (Service 2007c). Specifically, noise and disturbance from OHVs creating or using undesignated  
25 routes in or near flycatcher habitat may disrupt breeding activities.

26 As such, the BO included the following reasonable and prudent measures and terms and  
27 conditions as necessary and appropriate to minimize take of SWWF due to recreational  
28 activities: BLM will rehabilitate all undesignated routes used by OHVs within riparian areas, or  
29 areas with the potential to support SWWF breeding habitat. This can include obliterating the  
30 beginnings and ends of undesignated routes so that the routes are not accessible or visible to the  
31 public. Conservation recommendations for the flycatcher and its habitat include:

- 1 • Continue to assist Lake Mead National Recreation Area other BLM offices in Utah,  
2 Nevada, and California in the development of regional planning efforts to implement the  
3 recovery plan; and in the integration of those plans with the Arizona Strip RMP.
- 4 • Develop environmental education and information materials on the flycatcher and other  
5 riparian species and make these materials available to the public at the ASDO office in  
6 St. George, Utah.

7 In 2008, the Service conducted an intra-Service section 7 consultation for the issuance of an  
8 incidental take permit associated with operations of Horseshoe and Bartlett dams and reservoirs  
9 by Salt River Project. The intra-Service Biological and Conference Opinion stated that the  
10 proposed modified operations are not likely to result in adverse modification of the flycatcher's  
11 designated critical habitat at Horseshoe Reservoir and upstream in the Verde Valley. While  
12 increased recreation and river use may cause short-term, adverse impacts to flycatcher nesting;  
13 noise and disturbance would be comparatively lower at Horseshoe since the use of waterskis,  
14 parasails, and personal watercraft is prohibited (Service 2008b).

15 The intra-Service Biological and Conference Opinion did not add to the mitigation and  
16 conservation measures included in the 2008 Habitat Conservation Plan, which is consistent with  
17 the flycatcher Recovery Plan by increasing the amount of protected habitat and the level of  
18 management of riparian habitat available for use by flycatchers over current levels in central  
19 Arizona. Mitigation measures include improving recreation plans and acquiring and managing at  
20 least 50 acres of riparian habitat along the Verde River adjacent to the Camp Verde Riparian  
21 Preserve, if possible. Additionally, a combination of fencing, patrolling, and community  
22 coordination/education will be applied in the SRP's management approach to minimize impacts  
23 from recreational use of the Verde River, including erecting and maintaining fences to protect  
24 the riparian corridor.

25 The 2005 Programmatic Biological and Conference Opinion concluded that Apache-Sitgreaves,  
26 Tonto, Carson, and Gila LRMPs would not likely to jeopardize the flycatcher because they  
27 provide protective measure for endangered species. For example, the Tonto NF cooperates with  
28 the Salt River Project to implement mitigations from the Salt River Project Habitat Conservation  
29 Plan and conducts numerous annual boating trips down the Verde River in order to survey for  
30 flycatchers. Conservation recommendations with regards to recreational use include continuing  
31 to exclude activities such as OHVs that can impact flycatcher habitat (Service 2005h).

32 According to the Biological Assessment, inconsistent management of OHV in the region has  
33 caused resource damage in popular and remote dispersed areas across the region. Pursuant the  
34 2005 Travel Management Rule (36 CFR 212, Subpart B, Designation of Roads, Trails, and Areas  
35 for Motor Vehicle Use), the National Forests in Arizona are currently developing an  
36 Environmental Impact Statement (EIS) which will establish a consistent plan for OHV use on the  
37 National Forests (USFS 2005). Apache-Sitgreaves, Carson, Gila, and Tonto, contain critical  
38 habitat and are at varying stages of the NEPA process.

39 As stated in the 2010 DEIS for Public Motorized Travel Management Plan on the Apache-  
40 Sitgreaves National Forest, the 2005 Biological Opinion determined that implementation of any  
41 proposed alternative in the DEIS would be consistent with the regionwide Biological Opinion  
42 (USFS 2010). Management directives for outdoor recreation included:

- 1 • Manage the recreation resource to provide opportunities for a wide variety of developed  
2 and dispersed recreation opportunities. Provide for developed site and dispersed visitor  
3 use;
- 4 • Maintain a variety of trails, considering people’s needs. Includes foot, motorized, and  
5 challenge adventure opportunities, as well as opportunities for the handicapped.;
- 6 • Continue to integrate the recreation opportunity spectrum (ROS) system into the forests  
7 planning process to quantify recreation opportunity changes, guide forest management,  
8 and coordinate recreation with other resources; and
- 9 • Establish ORV use areas and closures as needed to meet demand and other resource  
10 objectives. Manage ORV use to provide ORV opportunities while protecting resources  
11 and minimizing conflicts with other users (USFS 2010).

### 12 **3.11.2 Environmental Consequences**

13 Federal recreational management activities subject to formal section 7 consultations on several  
14 recreational sites could cause both adverse and beneficial effects to the flycatcher. Activities  
15 including land and resource, transportation, and recreational management and planning could  
16 cause beneficial impacts, while trail development and camping could cause adverse impacts.

17 Recreational management activities would produce short-term, adverse impacts to flycatchers  
18 and their habitat from riparian habitat disturbance, potential loss of breeding sites, harassment,  
19 and noise. However, implementation of these same management activities is expected to  
20 produce long-term beneficial impacts by reducing the potential impacts and risks of critical  
21 habitat loss.

#### 22 **3.11.2.1 No Action**

23 Under the No Action Alternative, southwestern willow flycatcher critical habitat would remain  
24 the same as that designated in 2005. The number and types of potential consultations would  
25 continue as expected, still incorporating mitigation and conservation measures and management  
26 approaches with regards to recreational activities.

27 Section 7 consultations would continue to analyze relevant travel, land, resource, recreation  
28 management plans on Federal, state, and tribal lands previously designated as flycatcher critical  
29 habitat. As they relate to recreation and management, such consultations would likely include:

- 30 • U.S. Bureau of Land Management -- resource management plans;
- 31 • U.S. Bureau of Reclamation --transportation, storage, and delivery of water affecting  
32 recreational water bodies;
- 33 • U.S. Fish and Wildlife Service -- issuance of section 10 enhancement of survival permits,  
34 HCPs, and safe harbor agreements; National Wildlife Refuge planning; and
- 35 • U.S. Forest Service -- forest plans, travel management plans.

36 The largest share of these impacts would continue to occur in San Bernardino, Tonto, and  
37 Sequoia National Forests where past closures have resulted in a decrease in recreational use.

38 Therefore, the No Action Alternative would not result in any additional or expanded  
39 consultations and, as such, would not have any incremental impacts on recreational management

1 beyond those impacts that currently occur from the 2005 critical habitat designations for the  
 2 flycatcher and associated requirements of section 7 of the ESA.

3 **3.11.2.2 Alternative A**

4 Under Alternative A, additional stream segments in California, Nevada, Utah, Colorado,  
 5 Arizona, and New Mexico have been proposed as critical habitat compared to the existing  
 6 designation, as discussed in Section 2.3 and in further detail in the proposed rule.  
 7 Table 3.14 below displays new critical habitat segments (not included in the 2005 designation)  
 8 located in recreational areas.

9 **Table 3.14 New Critical Habitat Segments in Federal or**  
 10 **State Recreational Areas**

<i>New Critical Habitat Stream Segment</i>	<i>Recreational Area</i>	<i>Federal and/or State landowners</i>
<b>California</b>		
Canebrake Creek	Canebrake Ecological Reserve Resource Management Area	CA Dept. of Game & Fish
Owens River	Lower Owens River Conservation Area; Bishop Resource Management Area	L.A. Dept. of Water & Power, Inyo County; BLM
Mono Creek	Los Padres NF	USFS
Amargosa River	Kingston Range Wilderness; State Lands Commission	BLM; CA
Lake Piru-Piru Creek	Los Padres NF	USFS
Colorado River	Cibola NWR; Picacho State Recreation Area; Colorado River Resource Mgmt. Area*	FWS; CA, BLM;
Imperial Reservoir – Colorado River	Imperial NWR Resource Mgmt. Area	FWS, BLM
San Diego River	Mission Trails Regional Park	San Diego County;
Bautista Creek	San Bernardino NF	USFS; State;
San Gabriel River	Angeles NF	USFS
Santa Clara River	Angeles NF; McGrath State Beach	BLM ; CA
<b>Nevada</b>		
Pahranagat River	Pahranagat NWR; Key Pittman Wildlife Mgmt. Area	FWS; Nevada Department of Wildlife, BLM
Frenchy Lake – Pahranagat River	Key Pittman Wildlife Mgmt. Area	Nevada Department of Wildlife
Nesbit Lake – Pahranagat River	Key Pittman Wildlife Mgmt. Area	Nevada Department of Wildlife
Ash Meadows NWR Water Features	Ash Meadows NWR	FWS

<i>New Critical Habitat Stream Segment</i>	<i>Recreational Area</i>	<i>Federal and/or State landowners</i>
Carson Slough	Ash Meadows NWR	FWS
<b>Arizona</b>		
Colorado River	Cibola, Havasu, Imperial NWR; Picacho State Recreation Area; Buckskin Mountain State Park	FWS; State of AZ; BLM; BOR;
Lake Havasu – Colorado River	Bill Williams NWR; Lake Havasu State Park Cattail Cove State Park	FWS ; State of AZ ; BLM
Lake Mead-Colorado River	Grand Canyon NP; Lake Mead National Recreation Area	NPS
Roosevelt Lake – Salt River	Tonto NF	USFS
Roosevelt Lake – Tonto Creek	Tonto NF	USFS
Cienega Creek	Las Cienegas National Conservation Area	BLM
Empire Gulch	Las Cienegas National Conservation Area	BLM
San Francisco River – North	Apache-Sitgreaves NF	USFS
San Francisco River – West	Apache-Sitgreaves NF	USFS
<b>Utah</b>		
Paria River	Grand Staircase-Escalante National Monument	BLM
<b>New Mexico</b>		
San Francisco River – East	Gila NF	USFS
Rio Grande	Sevilleta & Bosque del Apache NWR; Rio Grande Wild and Scenic River; Leasburg Dam, Percha Dam, Caballa Lake State Parks, Wild River & Orilla Verded Rec. Areas, La Jolla and Bernalillo Waterfowl Management Areas	FWS, BLM, BOR  NM Game & Fish
Elephant Butte Reservoir (full pool) – Rio Grande	Elephant Butte Lake State Park	NM Energy, Minerals, and Natural Resources Department, BLM
<b>Colorado</b>		
Rio Grande	Alamosa NWR; Rio Grande and Home Lake WMAs; Rio Grande River Corridor ACEC	FWS; CO Division of Wildlife;  BLM

- 1 Compared to the No Action Alternative, Alternative A (all proposed units, no exclusions) would
- 2 result in (1) an increased workload for action agencies and the Service to conduct re-initiated
- 3 consultations for ongoing actions in newly proposed areas where flycatchers have been detected;
- 4 (2) consultations for new projects occurring along the 12 proposed stream segments where

1 flycatcher territories have not yet been detected since 1991; (3) new consultations from project  
2 proponents that previously did not consult due to a lack of awareness of the recovery goals for  
3 some river segments in the management units where southwestern flycatcher territories are  
4 known; and (4) possible project modifications to avoid adverse modification of critical habitat in  
5 areas where a significant alteration of habitat is proposed.

6 On Federal lands, or non-Federal lands where a Federal nexus exists through funding or  
7 permitting, additional Section 7 consultations could lead to additional limitations, restrictions,  
8 modifications, or prohibitions in recreational areas. However, the quality of many recreational  
9 values—for example, in bird watching, hiking, and sightseeing--would be preserved and  
10 potentially enhanced with conservation, mitigation, and management measures. Based on past  
11 impacts to recreational opportunities within the flycatcher recovery area, additional critical  
12 habitat designations could potentially create minor adverse impacts from limitations and  
13 restrictions on camping, horseback riding, and OHV use.

#### 14 *New and Reinitiated Adverse Modification Consultations*

15 Because impacts to PBFs and PCEs that occur within designated critical habitat stream segments  
16 are closely tied to adverse effects to the flycatcher, activities that would require consultation for  
17 critical habitat are primarily the same activities that currently require consultation for the species.  
18 Designation of critical habitat raises awareness of the species presence in an area, so project  
19 proponents who have not requested consultations for actions in previously designated areas that  
20 may affect the species may decide to do so. Based on previous activity in designated units, such  
21 project proponents would include the Forest Service, Bureau of Land Management, and National  
22 Park Service, although the specific locations of these types of projects in critical habitat are not  
23 known at this time.

24 Reinitiated consultations are consultations that have been completed for impacts to the species,  
25 but which might need to be re-opened to consider the likelihood of destruction or adverse  
26 modification to critical habitat. As it relates to recreation management, such consultations could  
27 include:

- 28 • Travel, Forest, and Land and Resource Management Plans —USFS, USFWS; and
- 29 • General Management Plans—NPS, USFWS.

30 All 12 of the National Forests located in the 2005 designation would also be included in the 2011  
31 proposed designation, though additional stream segments may cross different or additional  
32 ranger districts within a National Forest. Travel management plans on the Carson National  
33 Forest, for example, are analyzed by ranger district or groups of ranger districts and therefore  
34 additional consultations may be needed. Because of the similarities between the flycatcher  
35 habitat described in the 2011 proposal and the 2005 critical habitat designation, the Service  
36 believes that projects already evaluated for critical habitat effects would not require re-initiated  
37 consultation.

38 Critical habitat is proposed in twelve river segments where flycatcher territories have not been  
39 detected post-1991 (76 FR 50560-50561). Any future proposed action with a Federal nexus  
40 could trigger section 7 consultation. These stream segments are listed in Table 2.1. Deep,  
41 Castaic, and Willow creeks, Big and Little Tujunga canyons, Ventura and West Fork Mohave  
42 rivers, and the West Fork Little Colorado and Santa Cruz rivers are privately owned or

1 unclassified. Any future proposed projects with a Federal nexus would trigger evaluation for the  
2 flycatcher, but since little is known about recreational activities on these creeks and river  
3 segments it is difficult to evaluate potential impacts.

4 According to the 2008 Water Quality Monitoring Report, Temescal Creek meets the California  
5 state non-contact recreation standard, meaning boating is allowed but swimming is not (FOTC  
6 2008). Current recreational activities include walking and biking, with a total of 34  
7 recreationists over a 1-year survey period. The Riverside County Parks and Open Space District  
8 indicates there are no immediate plans to construct bicycle paths (separate from traffic) along  
9 Temescal Creek due to a lack of funding; and no water contact recreation use facilities are  
10 planned for the creek. Finally, an online database search concluded no potential probable future  
11 recreational uses. While Temescal Creek would be subject to new consultations, they are  
12 unlikely due to low levels of recreational use (CDM 2009).

### 13 *Addition of Adverse Modification Analysis to Future Consultations*

14 Breeding flycatchers are known to occur in critical habitat proposed at Paria River, which runs  
15 through the Grand Staircase-Escalante National Monument. As such, the Bureau of Land  
16 Management could engage in consultations on the flycatcher and critical habitat for future plans  
17 related to recreational activities that could impact the designated Paria River segment, such as  
18 hiking, backpacking, camping, horseback riding, and OHV use at the Grand Staircase-Escalante  
19 National Monument. In addition, while the flycatcher has not been known to occur specifically  
20 at Mono Creek in Los Padres National Forest, it has been known to occur in Los Padres National  
21 Forest. Thus, this National Forest has already been subject to section 7, but might also enter into  
22 adverse modification consultations due to the designation of Mono Creek as critical habitat.

23 The flycatcher is known to occur on seven proposed river segments in eight National Wildlife  
24 Refuges (Cibola, Pahrangat, Bill Williams, Imperial, Havasu, Sevilleta, Bosque del Apache, and  
25 Alamosa were excluded from the 2005 designation since their CCPs, MSCPs, and/or  
26 management plans were deemed sufficient for habitat conservation). OHV use is prohibited at  
27 Pahrangat, Ash Meadows, and Havasu NWRs, and permitted on designated trails and roads in  
28 Cibola, Imperial, and Alamosa NWRs. Waterskiing is allowed on the Colorado River in the  
29 Cibola NWR. Vehicles are allowed on the auto tour route at the Bosque del Apache NWR, but  
30 this route is closed during the winter. While the majority of the Sevilleta NWR is not open to the  
31 public, those parts that are open allow OHV use. Cibola, Imperial, Alamosa, Bosque del  
32 Apache, and Sevilleta would be the most likely to enter into consultations on critical habitat,  
33 because they allow OHV use, especially Bosque del Apache, which is in the process of  
34 developing a CCP for the Refuge.

35 BLM's 2010 San Luis Resource Area Travel Management Plan limited OHV use to designated  
36 roads and trails on the Rio Grande River Corridor, which includes the Rio Grande River Corridor  
37 ACEC (BLM 2010). BLM could enter into adverse modification consultations for future  
38 recreation-related projects at or near this proposed Rio Grande river segment.

39 The additional consultations and time to also consider adverse modification would increase  
40 administrative costs to the Service and to the action agencies. Implementing further conservation  
41 measures resulting from those additional consultations, such as enforcing newly prohibited use  
42 of OHV or re-designating roads/trails, would also increase costs for action agencies.

1 Outcomes of consultations for critical habitat include additional conservation measures designed  
 2 to maintain flycatcher PCEs. While these outcomes cannot be specified in advance, based on  
 3 past consultations the types of additional management actions that may be required include:

- 4 • Revising travel, forest, land and resource, general, and recreational management plans;
- 5 • Mapping, surveying, and monitoring flycatcher habitat and preparing reports; and
- 6 • Retaining riparian vegetation.

7 Future incremental impacts associated with changes in recreational activity are expected to be  
 8 confined to areas where flycatcher territories have not previously been detected. Those proposed  
 9 streams include the Castaic Creek, Big and Little Tujunga Canyon (Angeles National Forest),  
 10 Ventura River, and Paria River (Grand Staircase Escalante-National Monument) that may be  
 11 used for recreation. However, recreational activities in these areas are generally limited  
 12 therefore no incremental economic impacts to recreation are forecast (IEc 2012).

13 In summary, the effects of critical habitat designation on recreational management activities are  
 14 expected to be minor and adverse because (1) few projects would be subject to new consultations  
 15 based solely on the presence of designated critical habitat (2) any reasonable and prudent  
 16 alternatives developed under jeopardy analysis would not likely be changed substantially with  
 17 the addition of adverse modification analysis; and (3) very few if any additional conservation  
 18 measures would be proposed to address critical habitat, beyond those already proposed in  
 19 jeopardy consultations. In addition, conservation measures developed by the project proponent  
 20 or resulting from increased section 7 consultations could benefit the PBFs and PCEs within  
 21 designated critical habitat.

22 **3.11.2.3 Alternative B**

23 Alternative B includes all the segments identified in Alternative A except those lands proposed  
 24 for exclusion as detailed in the proposed rule. Table 3.15 displays stream segments  
 25 recommended for exclusion, and the recreation areas they contain:

26 **Table 3.15 Recreation Areas on Public Lands within Areas Recommended**  
 27 **for Exclusion**

Stream segments considered for exclusion	Recreation Area
Owens River	Lower Owens River Conservation Area, Bishop Resource Management Area
Bautista Creek	San Bernardino NF
Santa Ysabel Creek (lower)	Cleveland NF; San Dieguito River Park
South Fork Kern River South Fork Kern River – Isabella Lake	South Fork Kern River Wildlife Area; Sequoia NF

<b>Stream segments considered for exclusion</b>	<b>Recreation Area</b>
Virgin River	Overton State WMA
Colorado River (Lake Mead)	Grand Canyon NP; Lake Mead NRA
Pahranagat River	Key Pittman Wildlife Mgmt. Area
Muddy River	Overton WMA
Bill Williams River - Alamo Lake	Bill Williams NWR
Colorado River—two segments	Cibola, Havasu, Imperial NWRs; Picacho State Recreation Area; Buckskin State Park
Verde River—Horseshoe Lake	Tonto NFs
Gila River – San Carlos Lake	Apache-Sitgreaves NF
Roosevelt Lake – Tonto Creek; Roosevelt Lake – Salt River	Tonto NF
Rio Grande (NM)	Elephant Butte Reservoir
Rio Grande (CO)	Alamosa NWR; Rio Grande and Home Lake WMAs; Rio Grande River Corridor ACEC

1 Under Alternative B, the impacts associated with the designation of critical habitat would be  
2 similar to those identified for Alternative A, but less severe. This alternative would reduce costs  
3 for management related to recreational activities. Exclusions are meant to avoid redundancy and  
4 therefore increase efficiency, by reducing the number of consultations required. This alternative  
5 would still be expected to produce similar beneficial impacts to recreational management  
6 activities as Alternative A, since the excluded areas provide conservation benefit to recreational  
7 values. Adverse impacts, though reduced in Alternative B, would still be characterized as minor,  
8 since some incremental restrictions and limitations on recreational activities could still occur.

### 9 **3.12 Socioeconomic Resources**

10 As discussed above in section 3.1.2 Methodology, a separate analysis was conducted by  
11 Industrial Economics Incorporated to assess the potential economic effects of measures to protect  
12 flycatcher and its habitat in the proposed critical habitat areas (IEc 2012). The Economic  
13 Analysis attempts to quantify separately the dollar impacts of conservation activities related to  
14 the flycatcher, assuming both the presence of (called “incremental impacts”) and the absence of  
15 (called “baseline impacts”) a designation of critical habitat. This basis of comparison is different  
16 from that used in the Environmental Assessment, in which the basis for comparison is required  
17 by regulation to include a “No Action Alternative” and the other action alternative(s). In the  
18 case of the flycatcher, the No Action Alternative is defined as the alternative that would be  
19 implemented if the Service did not implement either of the proposed revisions. That course of  
20 action would lead to continuation of the existing circumstance--the 2005 designation.

21 Where appropriate, information from the economic analysis has been incorporated into this  
22 Environmental Assessment, and is summarized in this section. Note, however, that the dollar  
23 impacts summarized herein address those impacts that are attributable, directly or indirectly, to

1 the designation of all critical habitat, not just the proposed changes from 2005 to 2011. This  
 2 means that the economic impacts cited here and throughout this EA overstate the impacts that  
 3 would result from instead comparing the proposed revisions to the No Action Alternative—the  
 4 2005 designation.

### 5 **3.12.1 Existing Conditions**

6 Table 3.16 summarizes the population and income levels of counties containing proposed  
 7 critical habitat. Arizona has the highest proportion of its population living within counties  
 8 containing designated flycatcher critical habitat (96%); Colorado has the lowest (1.8%).

9 **Table 3.16 Socioeconomic Profile of Counties Containing Proposed Critical**  
 10 **Habitat**

<i>State</i>	<i>County</i>	<i>Population Density (persons/sq. mile, 2010)</i>	<i>Population (2010)</i>	<i>% of Statewide Population (2010)</i>	<i>% Change (2000-2010)</i>	<i>Per Capita Income (2010 dollars)</i>	<i>% Below Poverty Level (2006-2010)</i>
<b>Arizona</b>	<b>State Total</b>	<b>56.3</b>	<b>6,392,017</b>	<b>100%</b>	<b>24.6%</b>	<b>25,680</b>	15.3%
	Yavapai	26.0	211,033	3.3	26.0	25,527	13.7
	Graham	8.0	37,220	0.58	11.1	15,644	20.0
	Gila	11.2	53,597	.84	4.4	12,294	34.4
	Pima	106.7	980,263	15.3	16.2	25,093	16.4
	Santa Cruz	38.3	47,420	.74	23.6	16,209	25.2
	Cochise	21.3	131,346	2.1	11.5	23,010	15.7
	Greenlee	4.6	8,437	.13	-1.3	21,281	13.5
	Apache	6.4	71,518	1.1	3.0	12,294	34.4
	La Paz	4.6	20,489	.32	3.9	21,165	20.3
	Maricopa	414.9	3,827,371	59.9	24.2	27,816	13.9
	Mohave	15.0	200,186	3.1	29.1	21,523	16.1
	Pinal	70.0	375,770	5.9	24.6	21,716	13.5
	Yuma	35.5	195,751	3.0	22.3	18,418	20.9
	Aggregate of Counties		6,160,401	96.3%			15.6%
<b>New Mexico</b>	<b>State Total</b>	<b>17.0</b>	<b>2,059,179</b>	<b>100%</b>	<b>13.2</b>	<b>\$22,966</b>	18.4%
	Catron	0.5	3,725	0.2	5.1	\$20,895	15.3
	Cibola	6.0	27,213	1.3	6.3	\$14,712	24.0
	Dona Ana	55.0	209,233	10.1	19.8	\$18,315	24.5
	Sierra	2.9	11,988	0.6	-9.7	\$16,667	22.5
	Grant	7.4	29,514	1.4	-4.8	\$21,164	14.8
	Hidalgo	1.4	4,894	0.2	-17.5	\$17,451	22.6
	McKinley	13.1	71,492	3.5	13.2	\$12,932	33.4
	Mora	2.5	4,881	0.2	-5.8	\$22,035	11.9
	Rio Arriba	6.9	40,246	2.0	-2.3	\$19,913	19.7
	San Juan	23.6	130,044	6.3	23.6	\$20,725	20.8
	Santa Fe	75.5	144,170	7.0	13.2	\$32,188	14.4
	Sierra	2.9	11,988	0.6	-9.7	\$16,667	22.5
	Socorro	2.7	17,866	0.9	-1.2	\$17,801	26.8
	Taos	15.0	32,937	1.6	9.9	\$22,145	17.0
	Valencia	71.8	76,569	3.7	15.7	\$19,955	19.4
	Aggregate of Counties		816,760	39.7%		n/a	21.3%

<b>Colorado</b>	<b>State Total</b>	48.5	5,029,196	100%	16.9%	\$30,151	12.2%
	Alamosa	21.4	15,445	0.3	3.2	\$18,820	24.0
	Conejos	6.4	8,256	0.2	-1.7	\$17,541	17.7
	Costilla	2.9	3,524	0.0	-3.8	\$16,525	28.4
	La Plata	30.3	51,334	1.0	16.8	\$29,836	10.2
	Rio Grande	13.1	11,982	0.2	-3.5%	\$17,199	17.1
	Aggregate of Counties		90,541	1.8		n/a	14.9
<b>California</b>	<b>State Total</b>	<b>239.1</b>	<b>37,253,956</b>	<b>100%</b>	<b>9.98%</b>	<b>\$29,188</b>	<b>13.7%</b>
	Imperial	41.8	174,528	0.5	22.6	\$16,395	21.4
	Inyo	1.8	18,546	.0	3.3	\$26,762	11.9
	Kern	103.3	839,631	2.3	26.9	\$20,10	20.6
	Los Angeles	239.1	9,818,605	26.4	3.1	\$27,344	15.7
	Mono	4.7	14,202	0.0	10.5	\$27,321	12.0
	Orange	3,807.7	3,010,232	8.0	5.8	\$34,017	10.1
	Riverside	303.8	2,189,641	5.8	41.7	\$24,431	13.4
	Santa Barbara	155.0	423,895	1.1	6.1	\$29,731	14.3
	San Bernardino	101.5	2,035,210	5.5	19.1	\$21,867	14.8
	San Diego	735.8	3,095,313	8.3	10.0	\$30,715	12.3
	Ventura	446.7	823,318	2.2	9.3	\$32,348	9.2%
	Aggregate of Counties		22,443,121	60.2%		n/a	14.1%
<b>Nevada</b>	<b>State Total</b>	<b>24.6</b>	<b>2,700,551</b>	<b>100%</b>	<b>35.1%</b>	<b>\$27,589</b>	<b>11.9%</b>
	Clark	247.3	1,951,269	72.3	41.8	\$27,422	11.7
	Lincoln	0.5	5,345	0.2	28.3	\$18,148	10.6
	Nye	2.4	43,946	1.6	35.3	\$22,687	18.9
	Aggregate of Counties		2,000,560	74.1%		n/a	21.3%
<b>Utah</b>	<b>State Total</b>	<b>33.6</b>	<b>2,763,885</b>	<b>100%</b>	<b>23.7%</b>	<b>\$23,139</b>	<b>10.8%</b>
	Kane	1.8	7,125	0.3	17.8	\$25,155	9.9
	San Juan	1.9	14,746	5.3	2.3	\$15,150	25.8
	Washington	56.9	138,115	4.9	52.9	\$21,378	11.3
	Aggregate of Counties		159,986	5.8%		n/a	12.6%

1 Source: U.S. Census Bureau State & County QuickFacts, 2010.

2 Table 3.17 summarizes the size of economic sectors within counties containing proposed critical  
3 habitat, by payroll dollars. Key sectors within each state's proposed habitat are in **bold**.

4 **TABLE 3.17 Annual Payroll within Counties Containing Proposed**  
5 **Critical Habitat, by Industry (2009)**

<i>Industry</i>	<i>Annual Payroll (Thousands)</i>					
	<i>Arizona</i>	<i>California</i>	<i>New Mexico</i>	<i>Utah</i>	<i>Colorado</i>	<i>Nevada</i>
Forestry, Fishing, Hunting, & Agriculture	\$27,348	\$279,836	\$7,418	\$103	\$12,565	-
Mining	\$316,687	\$1,018,043	\$279,710	\$4,653	\$40,017	\$16,756
Utilities	\$785,423	\$78,909	\$16,295	D	\$10,705	D
Construction	\$5,809,470	\$18,708,728	<b>\$497,367</b>	\$112,994	<b>\$93,943</b>	<b>\$3,443,468</b>
Manufacturing	<b>\$7,487,768</b>	<b>\$41,420,055</b>	\$201,128	\$77,922	\$27,851	\$943,378
Wholesale Trade	\$5,096,975	<b>\$29,501,790</b>	\$239,615	\$59,024	\$42,575	\$1,161,842

<i>Industry</i>	<i>Annual Payroll (Thousands)</i>					
	<i>Arizona</i>	<i>California</i>	<i>New Mexico</i>	<i>Utah</i>	<i>Colorado</i>	<i>Nevada</i>
Retail Trade	<b>\$7,047,002</b>	\$24,210,802	<b>\$863,482</b>	<b>\$177,730</b>	<b>\$123,845</b>	<b>\$2,483,946</b>
Transportation & Warehousing	\$2,962,602	\$11,365,099	\$157,305	\$97,308	\$19,693	\$1,062,535
Information	\$2,939,252	\$22,702,070	\$102,852	\$23,130	\$18,151	\$609,189
Finance and Insurance	<b>\$7,055,462</b>	<b>\$27,378,115</b>	\$336,644	\$49,461	\$62,675	\$1,425,970
Real Estate	\$1,544,061	\$9,098,433	\$112,491	\$18,872	\$16,656	\$905,232
Professional, scientific, & technical services	<b>\$6,898,176</b>	<b>\$46,100,200</b>	<b>\$480,635</b>	\$70,018	\$72,969	<b>\$2,280,400</b>
Management of companies/ enterprises	\$2,911,727	\$13,367,038	\$112,700	-	-	\$905,232
Administrative & Support & Waste Management & Remediation	\$5,654,322	\$17,135,879	\$164,077	\$62,325	\$34,705	\$1,592,175
Educational Services	\$1,779,928	\$6,806,385	\$114,767	\$7,830	\$4,212	\$223,769
Health Care and Social Assistance	<b>\$13,206,275</b>	<b>\$45,547,323</b>	<b>\$1,462,533</b>	<b>\$265,875</b>	<b>\$180,142</b>	<b>\$3,188,385</b>
Arts, entertainment, and recreation	\$1,309,733	\$9,693,032	\$91,713	\$12,003	\$9,427	\$565,076
Accommodation and food services	\$2,481,448	\$14,259,423	\$462,060	\$94,829	\$83,258	<b>\$6,782,426</b>
Other services	\$2,032,360	\$8,955,641	\$216,917	\$40,670	\$26,683	\$597,538
<b>Total for all sectors</b>	<b>\$79,258,632</b>	<b>\$349,885,917</b>	<b>\$6,335,036</b>	<b>\$1,210,555</b>	<b>\$924,040</b>	<b>\$28,667,531</b>

1 Source: U.S. Census Bureau, 2009 County Business Patterns (NAICS)

2 D: Withheld to avoid disclosing data for individual companies. Data are included in higher level totals

### 3 **3.12.2 Environmental Consequences**

#### 4 **3.12.2.1 No Action**

5 Under the No Action Alternative, no changes would be made to the 2005 designation of critical  
6 habitat. The section 7 consultation process would continue as presently conducted without the  
7 additional 38 percent increase in Management Units and 44 percent increase in stream miles of  
8 critical habitat. The number of potential consultations would be expected to remain the  
9 same as under current conditions and these consultations would also encourage  
10 conservation measures that enhance and maintain healthy and native riparian ecosystems.  
11 Consultations with potential socioeconomic impacts would be conducted primarily on lands  
12 managed by USFS and BLM, or for permits issued by those agencies, Bureau of Reclamation,

1 the U.S. Army Corps of Engineers, and FWS. As it relates to activities with potential  
2 socioeconomic consequences, these would include consultations for:

- 3 • Mining permits;
- 4 • Energy development;
- 5 • Water Resources development;
- 6 • Recreation Planning (sportfish management and travel management activities);
- 7 • Habitat restoration—stream restoration, vegetation management;
- 8 • Grazing and livestock management; and
- 9 • Construction/development activities—transportation, infrastructure, residential.

10 Consultations for these activities would likely continue with similar frequency under the No  
11 Action Alternative. The outcomes of these consultations can include conservation measures that  
12 serve to limit the natural resource impacts, as described elsewhere throughout this document.  
13 These conservation measures may include specific modifications to water resource management,  
14 construction practices, or resource development activities, which may increase operational and/or  
15 administrative costs to action agencies or private parties applying for permits. These impacts of  
16 the No Action Alternative would continue to be minor, based on the consultation history for  
17 typical actions.

### 18 **3.12.2.2 Alternative A**

19 The likely effect of increasing the number of section 7 consultations would be conservation or  
20 maintenance of flycatcher PBFs and PCEs by limiting, restricting, or modifying proposed  
21 economic activities affecting critical habitat, because “may affect” determinations for proposed  
22 activities analyzed through the section 7 process could require reasonable and prudent  
23 alternatives, and would include conservation measures to conserved designated critical habitat.  
24 Direct impacts of designation on socioeconomic resources could include impacts to small entities  
25 from making project modifications or implementing conservation measures on projects subject to  
26 new, re-initiated, or expanded section 7 consultations, and the incremental costs of such  
27 consultations to the Service, Federal agencies, or project proponents.

28 Indirect impacts faced by project proponents, land managers and landowners could include the  
29 following:

- 30 • *Time Delays*--Both public and private entities may experience incremental time delays  
31 for projects and other activities due to requirements associated with the need to reinitiate  
32 the section 7 consultation process and/or compliance with other laws triggered by the  
33 designation. To the extent that delays result from the designation, they are considered  
34 indirect, incremental impacts of the designation.
- 35 • *Regulatory Uncertainty* --The Service conducts each section 7 consultation on a case-by-  
36 case basis and issues a biological opinion on formal consultations based on species- and  
37 site-specific information. As a result, government agencies and affiliated private parties  
38 who consult with the Service under section 7 may face uncertainty concerning whether  
39 project modifications will be recommended by the Service and what the nature of these  
40 modifications will be. This uncertainty may diminish as consultations are completed and  
41 additional information becomes available on the effects of critical habitat on specific

1 activities. Where information suggests that this type of regulatory uncertainty stemming  
 2 from the designation may affect a project or economic behavior, associated impacts are  
 3 considered indirect, incremental impacts of the designation.

- 4 • *Stigma*--In some cases, the public may perceive that critical habitat designation may  
 5 result in limitations on private property uses above and beyond those associated with  
 6 anticipated project modifications and regulatory uncertainty described above. Public  
 7 attitudes about the limits or restrictions that critical habitat may impose can cause real  
 8 economic effects to property owners, regardless of whether such limits are actually  
 9 imposed. All else equal, a property that is designated as critical habitat may have a lower  
 10 market value than an identical property that is not within the boundaries of critical habitat  
 11 due to perceived limitations or restrictions. As the public becomes aware of the true  
 12 regulatory burden imposed by critical habitat, the impact of the designation on property  
 13 markets may decrease. To the extent that potential stigma effects on markets are  
 14 probable and identifiable, these impacts are considered indirect, incremental impacts of  
 15 the designation.

16 Table 3.18 summarizes the potential economic impacts of the proposed designation by category  
 17 of activity (IEc 2012). The present value of potential economic impacts (using a 7% discount  
 18 rate) ranges from \$11 million to \$19 million over the 20-year time period, equal to an annual  
 19 impact of \$0.9M to \$1.7M. This potential impact represents a maximum of 0.5% of the  
 20 combined Gross Domestic Product for the six states of \$2.73 trillion (BEA, 2010).

21 **Table 3.18 Total Potential Economic Impacts of**  
 22 **Proposed Critical Habitat Designation**

<i>Activity</i>	<i>Present Value</i>		<i>Percentage of total impacts</i>	
	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
Water*	\$1,450,000	\$9,620,000	13.3%	47.11%
Transportation (Roads, Dams, Bridges)	\$5,800,000	\$5,800,000	53.26%	28.39%
Development (Residential)	\$807,000	\$807,000	7.41%	3.95%
Grazing	\$2,160,000	\$3,530,000	19.83%	17.26%
Tribal	\$664,000	\$664,000	6.1%	3.25%
Recreation	\$0	\$0	0.0%	0.0%
<b>Total</b>	<b>\$11,000,000</b>	<b>\$20,000,000</b>	<b>100%</b>	<b>100%</b>
* Impacts to water management activities represent present value impacts over a thirty-year period (2012-2041). All other impacts are calculated over a twenty-year period (2012-2031). <b>Note:</b> Totals may not sum due to rounding.				

23 This impact of at most 0.0007% of combined state GDPs can be considered minor overall,  
 24 though individual proponents or affected entities could experience project-specific impacts that  
 25 could be considered moderate but not significant, as shown in Table 3.19.

1 In addition to potentially adverse economic impacts, the Economic Analysis identifies potential  
2 economic benefits to critical habitat designation, which could derive from:

- 3 • *Improved water quality*--Implementation of a storm water pollution prevention plan and  
4 sedimentation controls may reduce adverse impacts to downstream water quality.  
5 Improved water quality may reduce water treatment costs and have human or ecological  
6 health benefits.
- 7 • *Decreased development in flood prone areas*--Flycatcher conservation efforts may lead to  
8 less development in flood prone areas resulting in some benefit to society.
- 9 • *Property value benefits*--Open space preservation or decreased density of development  
10 resulting from flycatcher conservation may increase adjacent or nearby property values.
- 11 • *Aesthetic benefits*--Social welfare gains may be associated with enhanced aesthetic  
12 quality of the habitat. Preferences for aesthetic improvements may be measured through  
13 increased willingness-to-pay to visit a habitat region for recreation or increased visitation.
- 14 • *Educational benefits*--Surveying and monitoring of project sites for the flycatcher confers  
15 educational benefits in that more is known about the species and where populations exist.  
16 This knowledge could help direct future conservation efforts.
- 17 • *Public safety benefits*--Imposing or enforcing speed limits for water craft in areas near  
18 flycatcher habitat may result in a reduction in boating accidents resulting in injuries or  
19 property damage. (IEc 2012).

20 Because no consensus exists in the economic literature on precisely how these benefits can be  
21 quantified in monetary terms, they are described but not estimated in the Economic Analysis  
22 (IEc 2012).

### 23 *Impacts to Small Entities*

24 The Economic Analysis includes an analysis of the distributional impacts of the proposed critical  
25 designation on small entities and the energy industry. Table 3.19 (next page) presents the results  
26 of the threshold analysis developed to support the Service's determination regarding whether the  
27 proposed rule will have a significant economic impact on a substantial number of small entities,  
28 as required by the Regulatory Flexibility Act (RFA), as amended by the Small Business  
29 Regulatory Enforcement Fairness Act (SBREFA). This analysis is intended to improve the  
30 Service's understanding of the potential effects of the proposed rule on small entities and to  
31 identify opportunities to minimize these impacts in the final rulemaking.

32  
33 The most significant costs on a per entity basis arise from the implementation of conservation  
34 activities, such as surveying, purchasing mitigation lands, preserving land on-site, and managing  
35 the habitat. Small entities also may participate in section 7 consultation as a third party (the  
36 primary consulting parties being the Service and the Federal action agency). It is therefore  
37 possible that the small entities may spend additional time considering critical habitat during  
38 section 7 consultation for the flycatcher. Additional incremental costs of consultation that would  
39 be borne by the Federal action agency and the Service are not relevant to this screening analysis  
40 as these entities (Federal agencies) are not small. Refer to the Economic Analysis for a full  
41 discussion of the assumptions and results of the study.

1 **3.12.2.3 Alternative B**

2 Under Alternative B, the impacts to economic efficiency and distribution from critical habitat  
3 designation would be similar to but lesser than Alternative A, as designation of critical  
4 habitat under this alternative would decrease the number of re-initiated and new section 7  
5 consultations. Alternative B would exclude, exempt, or remove approximately 1,464 km  
6 (910 mi) from critical habitat designation. Compared to Alternative A, Alternative B would  
7 probably have fewer adverse economic impacts because it could achieve flycatcher subspecies  
8 conservation goals, including conservation or maintenance of critical habitat PCEs within  
9 exclusion areas through management of HCPs, without increasing the number of re-initiated  
10 and new section 7 consultations. Reducing the number of section 7 consultations would reduce  
11 the indirect adverse economic impacts associated with the costs to complete those consultations.  
12

DRAFT

**TABLE 3.19 Impacts on Small Entities**

<i>ACTIVITY</i>	<i>Type of impacts</i>	<i>Affected small entities<sup>1</sup></i>	<i>Total present value impacts<sup>2</sup></i>	<i>Present value impacts excluding federal costs<sup>3</sup></i>	<i>Annualized incremental impacts<sup>4</sup></i>	<i>Annualized impacts per entity</i>	<i>Impacts as % of annual revenues<sup>5</sup></i>
<i>[A]</i>	<i>[B]</i>	<i>[C]</i>	<i>[D]</i>	<i>[E]</i>	<i>[F]</i>	<i>[G] = [F] / [C]</i>	<i>[H]</i>
<b>Water Management</b>	Project modification and admin. costs	Luna Irrigation Co.	\$29,000 to \$94,000	\$12,000 to \$77,000	\$930 to \$5,800	\$930 to \$5,800	0.01% to 0.08%
<b>Grazing</b>	Project modification and admin. costs	3	\$1.4 to \$2.8 million	\$34,000 to \$61,000	\$3,000 to \$5,300	\$1,000 to \$1,800	0.24% to 0.43%
	Admin. costs only	29	\$720,000	\$160,000	\$14,000	\$480	0.12%
<b>Development</b>	Land value loss and admin. costs	1	\$300,000	\$200,000	\$200,000	\$200,000	5.72%
	Admin. costs only	65	\$510,000	\$120,000	\$11,000	\$1,800	0.05%
<b>Oil and Gas</b>	Admin. Costs only	7	\$11,000	\$2,200	\$198	\$28	<0.01%

**Notes:**

1. See Column [C] of Exhibit A-2.
2. As estimated in Chapters 3 through 5.
3. This estimate excludes the additional incremental costs of consultation that would be borne by the Federal action agency and the Service. These costs are not relevant to this screening analysis as these entities (Federal agencies) are not small.
4. Present value impacts as presented in Column [E] are annualized over twenty years for grazing and development activities and over thirty years for water management activities. Land value losses for development are not annualized because these losses are assumed to occur in the year that critical habitat is designated and represents a one-time loss.
5. Revenue information is not available for the two water projects; therefore we assume their annual revenues are equivalent to the small business threshold of \$7 million. For grazing, average revenues were developed using the USDA, National Agricultural Statistics Service. 2007 Census of Agriculture. Volume 1, Chapter 2: County Level Data, Table 1. County Summary Highlights: 2007 and Table 11. Cattle and Calves - Inventory and Sales: 2007 and 2002. For development, weighted average annual revenues are estimated using Risk Management Association (RMA), *Annual Statement Studies: Financial Ratio Benchmarks 2010 to 2011*, 2010. Revenue levels are discussed in greater detail in the text of this Appendix. Percentages may not calculate due to rounding.

2 Source: Industrial Economics, 2012.

**3 Table 3.20 Percent Minority and Poverty Populations within Counties containing Critical Habitat (2010)**

<i>State</i>	<i>State Black or African American (%)</i>	<i>Blacks or African Americans in Counties with proposed Critical Habitat (%)</i>	<i>State American Indian and Alaska Native (%)</i>	<i>American Indian and Alaska Natives in Counties with Proposed Critical Habitat (%)</i>	<i>State Asians (%)</i>	<i>Asians in Counties with Proposed Critical Habitat (%)</i>	<i>State Native Hawaiian and Other Pacific Islander (%)</i>	<i>Native Hawaiian and Other Pacific Islanders in Counties with Proposed Critical Habitat (%)</i>	<i>State Hispanic (%)</i>	<i>Hispanic % in Counties with Proposed Critical Habitat (%)</i>	<i>% below Poverty level state</i>	<i>% below poverty level within counties with proposed critical habitat</i>
<b>AZ</b>	4.1	4.2	4.6	3.0	2.8	2.5	0.2	6.7	29.6	30.9	15.3	15.6
<b>CA</b>	6.2	6.5	1.0	0.9	13.0	11.6	0.4	0.3	37.6	43.5	13.7	14.1
<b>CO</b>	4.0	0.6	1.1	4.1	2.8	.6	0.1	0.1	20.7	25.6	12.2	14.9
<b>NV</b>	8.1	10.3	1.2	.7	7.2	8.5	0.6	0.7	26.5	28.7	11.9	21.3
<b>NM</b>	2.1	.6	9.4	16.6	1.4	.8	0.1	0.0	46.3	47.0	18.4	21.3
<b>UT</b>	1.1	.5	1.2	5.9	2.0	.7	0.9	0.7	13.0	9.0	10.8	12.6

4 Source: U.S. Census Bureau State and County Quickfacts, 2010.

1 **3.13 Environmental Justice**

2 As required by Executive Order 12898, an agency action must be evaluated to determine if any  
3 disproportionately high and adverse health or environmental effects would occur on minority or  
4 low-income populations from implementation of the Proposed Action or alternatives.

5 **3.13.1 Existing Conditions**

6 Table 3.20 (previous page) displays the minority and poverty level populations in counties with  
7 proposed critical habitat, in comparison to their state levels overall. All six states have slightly  
8 higher poverty rates within the aggregated counties containing designated critical habitat than the  
9 state average overall. This is most pronounced in Nevada.

10 In addition, five of the six states (all but Utah) have higher than average proportions of Hispanic  
11 residents.

12 **3.13.2 Environmental Consequences**

13 Wherever a Federal agency action may have particular consequences for socioeconomic  
14 resources or human health and safety, a potential for environmental justice impact could exist.  
15 As it relates to environmental justice impacts, such actions could involve consultations on:

- 16 • Mining permits;
- 17 • Energy development;
- 18 • Water Resources development;
- 19 • Recreation Planning (sportfish management and travel management activities);
- 20 • Habitat restoration—stream restoration, vegetation management;
- 21 • Grazing and livestock management; and
- 22 • Construction/development activities—transportation, infrastructure, residential.

23 Any environmental justice impacts of such actions would be localized in nature and could be  
24 addressed by the action agency more effectively at the site-specific level. The potential for  
25 differential and disproportionate impacts to minority populations or low-income populations  
26 would increase in those areas where proposed actions are located near individual residential  
27 communities in which populations of concern for environmental justice effects are found in  
28 greater numbers. Given the low human populations in designated riparian habitats, and the fact  
29 that the Service has specifically chosen to avoid designation in developed areas, there would  
30 likely be few instances where disproportionate natural resource impacts could be created.

31 However, the potential for economic impacts that disproportionately effect low income or  
32 minority communities exists for the types of activities listed above, to the extent that there are  
33 employment and payroll impacts of reductions on economic activity, and those impacts are  
34 concentrated in the minority or low income communities. Since no specific projects are  
35 mandated or authorized by this designation of critical habitat, and the designation does not  
36 directly restrict land use or land management activities, it is not possible to predict whether such  
37 impacts will in fact occur. However, it is likely that any such impacts would be at most minor, in  
38 the context of the entire designation, because: (1) the economic impacts associated with

1 individual relevant projects or actions would be relatively small; and (2) there would be only a  
2 small number of projects throughout the designation which would create such impacts.

### 3 **3.14 Oil and Gas Development**

#### 4 **3.14.1 Existing Conditions**

5 The oil and gas industry contributes significantly to the economies of San Juan County, Utah,  
6 and La Plata County, Colorado.

7 The proposed area of critical habitat in San Juan County consists of an approximately 8,200-acre  
8 unit along the San Juan River. Of this area, 62 percent is owned by the Navajo Nation, about 27  
9 percent by the Federal government (managed by BLM), and another 10 percent by private  
10 landowners. The San Juan River unit is located over the Paradox Basin, which is a significant  
11 exploration area for oil, with some prior exploration for natural gas (IEc 2012). Mineral rights to  
12 the primary operating oil field are owned by the Navajo Nation. There are 11 existing wells in  
13 the areas of proposed critical habitat on the San Juan River. Of these wells, five are on the  
14 Navajo Reservation and six are on Federal land managed by BLM. The wells were drilled from  
15 1960 to 2002 (a test well that resulted in no production). Currently, five of these wells are  
16 abandoned, five are plugged and abandoned, and one is a water injection well. No oil has been  
17 recovered from these wells since 1999 (IEc 2012). In addition, multiple [etroleum, natural gas,  
18 and CO<sub>2</sub> pipelines run through the southwestern portion of San Juan County. Three of these  
19 converge near the easternmost portion of the proposed critical habitat.

20 The proposed area of critical habitat in La Plata County, Colorado, consists of an approximately  
21 4,080-acre unit on the Los Pinos River, which is located in the San Juan Basin, the second  
22 largest natural gas reserve in the United States (IEc 2012). Sixty-four percent of this area of  
23 critical habitat is owned by the Southern Ute; the rest is privately owned. In comments on the  
24 Service's proposed designation, the La Plata County Energy Council noted that the County  
25 contains more than 3,300 active natural gas wells, many of which are located along the Los Pinos  
26 River (La Plata 2011). Currently, seven drilled wells fall within critical habitat on the Los Pinos  
27 River; three of these are producing, one is dry and abandoned, and three are shut-in.

#### 28 *Consultations Since Previous Designation*

29 The only previous flycatcher consultations concerning energy development have been jeopardy  
30 consultations, occurring in 1998 and 2000. Both concerned pipeline maintenance and  
31 construction actions, and both resulting in a determination of "no jeopardy" to the species.

32 Federal and tribal land managers on whose land oil and gas development has occurred have a  
33 range of protections in place that serve to avoid or minimize impacts to the flycatcher. BLM's  
34 Resource Management Plan (RMP) for the Monticello Field Office includes the following  
35 stipulations for oil and gas activities occurring in flycatcher habitat (BLM 2008):

- 36 • Surveys would be required prior to operations unless species occupancy and distribution  
37 information is complete and available;
- 38 • Activities require monitoring throughout the duration of the project;

- 1 • Water production would be managed to ensure maintenance or enhancement of riparian  
2 habitat;
- 3 • Where technically and economically feasible, use directional drilling or multiple wells  
4 from the same pad to reduce surface disturbance and eliminate drilling in suitable riparian  
5 habitat;
- 6 • Activities would maintain a 300-ft buffer from suitable riparian habitat year-round
- 7 • Activity within 0.25 miles of occupied breeding habitat would not occur during the  
8 breeding season (May 1 to August 15);
- 9 • Ensure that water extraction or disposal practices do not result in change of hydrologic  
10 regime that would result in loss or degradation of riparian habitat; and
- 11 • Re-vegetate with native species all areas of surface disturbance within riparian areas  
12 and/or adjacent land.

13 The Service's Biological Opinion for this RMP included the following recommended  
14 conservation measures that apply to oil and gas activities (Service 2008g):

- 15 • Minimize noise disturbance near suitable and potentially suitable flycatcher habitat,  
16 including discouraging the use of loud equipment near breeding locations;
- 17 • Restore or maintain perennial surface flows and shallow groundwater in suitable  
18 flycatcher habitats and areas targeted for restoration of suitable habitat;
- 19 • Avoid habitat altering activities in riparian areas; and
- 20 • Unavoidable disturbances of riparian habitats suitable for flycatchers will be restored  
21 (pre-disturbance conditions or better) to provide adequate habitat for the species.

22 In addition, the tribal landowners have adopted conservation measures to protect the flycatcher:

- 23 • Navajo Nation Department of Fish and Wildlife maintains a Navajo Endangered Species  
24 List, which lists the flycatcher as Endangered ("a species or subspecies whose prospects  
25 of survival or recruitment are in jeopardy") (NNHP 2012). Its species "account" suggests  
26 that conservation actions include surveying during breeding season, year-round  
27 avoidance or alteration of suitable habitat surrounding known breeding sites, and  
28 avoidance of activity within a quarter-mile radius of potential habitat during the breeding  
29 season.
- 30 • The Southern Ute tribe generally avoids drilling in riparian areas. In 2009, the BLM  
31 conducted a "Programmatic Environmental Assessment (PEA) for 80-acre Infill Oil &  
32 Gas Development" for the Tribe, for which they consulted with the Service. The PEA  
33 contains conservation measures for flycatcher and its habitat. According to the PEA, the  
34 Tribe conducts annual surveys on the Reservation, and as of 2007, identified six breeding  
35 territories on the Los Pinos River. The PEA contains a number of species-specific  
36 conservation measures, best management practices, and other protections for riparian  
37 areas similar to those identified above.

### 38 **3.14.2 Environmental Consequences**

39 Initial geophysical exploration for oil and gas involves use of All-Terrain Vehicles (ATVs) and  
40 vehicles to lay the geophones and fill the shot holes for charges, or "thumpers" to create the  
41 sound waves. Exploration for oil and coal bed natural gas may also include drilling more than

1 one well. Surface disturbance during the exploration phase of drilling includes the construction  
2 of roads, well pads, reserve pits, and other facilities.

3 Development of oil and gas fields includes construction pads, storage tanks, storage tank  
4 batteries, oil and gas processing facilities and necessary pipeline, compressor engines and power  
5 line rights-of-way. Methods to dispose of residual water from oil and gas production include  
6 subsurface re-injection, direct surface discharge, and discharge into a containment pond or pit.  
7 Chemically polluted water may be treated before surface discharge or may be reinjected.

8 The associated noise and visual disturbances from such development could affect the behavior of  
9 flycatchers during breeding, nesting, or foraging activities. Vegetation disturbances or removal  
10 could decrease the availability and quality of nesting habitat; decrease cover from predators and  
11 increase predation; and decrease the availability of prey habitat. Soil disturbances could increase  
12 erosion, adversely affect soil stability, and increase sediment deposits. Pollutants released into  
13 the area may affect flycatchers, prey populations, and vegetation. As a result of these impacts,  
14 there could be decreases in nest initiation or nesting success and decreased adult and  
15 nestling/fledgling fitness. Implementation of the conservation measures described above should  
16 greatly minimize these potential impacts.

#### 17 **3.14.2.1 No Action**

18 The areas containing existing oil and gas fields described above were not designated as critical  
19 habitat in 2005. Therefore, adopting the No Action Alternative would not be expected to result  
20 in any future oil and gas consultations.

#### 21 **3.14.2.2 Alternative A**

22 Oil and gas activities occurring on Federally-owned (BLM) or tribally-owned surface lands, or  
23 areas where private surface rights overlap Federal mineral rights, could require consultation with  
24 the Service. Additionally, construction of oil and gas pipelines that intersect proposed streams  
25 reaches could result in filling of wetlands or releases of material into waterways during pipeline  
26 construction or maintenance, for which a 404 permit may be required from the U.S. Army Corps  
27 of Engineers.

28 In the proposed critical habitat unit along the San Juan River in Utah, the Service does not  
29 anticipate future drilling activity to occur, due to the drilling history, lack of production from  
30 existing wells and land management actions limiting activity in riparian areas (the drilling and  
31 production history of the area, including maps that show overlap with proposed habitat, are  
32 detailed more fully in the accompanying Economic Analysis). In addition, only small portions of  
33 the proposed river segment overlaps producing oil fields. On Federal lands within the unit, there  
34 is a “No Surface Occupancy” (NSO) stipulation on all oil and gas leases in riparian areas, and  
35 new surface disturbance will require a 100-meter setback from riparian areas. Areas identified as  
36 NSO would require that access to oil and gas deposits comes by directional drilling from outside  
37 of the boundaries of the NSO area. In addition, pipeline construction and maintenance activities  
38 with a Federal nexus could trigger consultations.

39 Along the Los Pinos River unit in Colorado, the two major landowners are the Southern Ute  
40 Indian Tribe and unidentified private landowners. According to the PEA described above, the

1 Southern Ute currently plan to allow a total of 770 80-acre infill wells to be drilled from existing  
2 and new well sites within the Reservation before 2029, five of which are likely to be drilled in  
3 the near future in riparian habitat. These wells will be co-located on existing well pads in order  
4 to reduce surface disturbance. The Tribe also expects that within the next 20 years, future  
5 pipeline

6 construction may intersect critical habitat (IEc 2012). On the private lands north of the Southern  
7 Ute Reservation, potential exists for future oil and gas development in the region, but there are  
8 no Federal subsurface rights for oil or gas within critical habitat. Absent such a Federal nexus,  
9 no section consultations with the Service would be triggered for new well development. In  
10 addition, as in Utah, pipeline construction or maintenance activities that intersect critical habitat  
11 could trigger consultations.

12 These areas where oil and gas development could occur are already subject to conservation and  
13 avoidance measures, stipulations, and land management requirements being implemented by  
14 BLM, the Navajo Nation, and the Southern Ute tribes as described above. Therefore, it is  
15 unlikely that any additional project modifications would be triggered by the designation of  
16 critical habitat. There would be incremental administrative and time delay costs associated with  
17 the designation of critical habitat where oil and gas development could occur.

18 The Economic Analysis conducted for this proposed designation estimates the present value of  
19 incremental administrative costs of consultation at \$33,000, using a seven percent discount rate.  
20 This is equivalent to an annualized cost of \$2,900 per year.

21 In summary, the effects of critical habitat designation oil and gas development and operations  
22 activities are expected to be minor and adverse because (1) few projects would be subject to new  
23 consultations based solely on the presence of designated critical habitat (2) any reasonable and  
24 prudent alternatives developed under jeopardy analysis would not likely be changed substantially  
25 with the addition of adverse modification analysis; and (3) very few if any additional  
26 conservation measures would be proposed to address critical habitat, beyond those already  
27 proposed in jeopardy consultations. In addition, conservation measures developed by the project  
28 proponents or resulting from incremental section 7 consultations could benefit the PBFs and  
29 PCEs within designated critical habitat.

### 30 **3.14.2.3 Alternative B**

31 The areas containing oil and gas fields and accompanying infrastructure are being considered for  
32 exclusion under Alternative B. Therefore, under this Alternative, there would be no new or  
33 expanded consultations for oil and gas development, and thus no impacts from designation of  
34 critical habitat.

### 35 **Cumulative Impacts**

36 The Council on Environmental Quality regulations define cumulative effects as “the impact on  
37 the environment which results from the incremental impact of the proposed action when added to  
38 other past, present, and reasonably foreseeable future actions regardless of what agency (Federal  
39 or non-Federal) or person undertakes such other actions” (40 CFR §1508.7).

1 In the context of critical habitat, cumulative impacts could be created if critical habitat  
 2 designations for multiple species affecting the same natural and human resources. Table 3.21  
 3 identifies Management Units for the flycatcher designation which contain designated habitat that  
 4 has already been designated as critical habitat for other species. Actions that could have  
 5 cumulative impacts would include: (1) section 7 consultation outcomes and subsequent effects  
 6 on other species; (2) the effects of designated critical habitat for other species; and (3) the effects  
 7 of land management plans.

8 **Table 3.21 Management Units with Designated Flycatcher Critical Habitat**  
 9 **that Overlaps with Other Species Critical Habitat**

Management unit	Other species with overlapping critical habitat
Amargosa	Amargosa vole, Ash Meadows Amargosa pupfish, Ash Meadows blazingstar, Ash Meadows gumplant, Ash Meadows ivesia, Ash Meadows milk-vetch, Ash Meadows naucorid, Ash Meadows speckled dace, Ash Meadows sunray, spring-living centaury
Bill Williams	Bonytail chub
Hoover-Parker	Bonytail chub razorback sucker
Little Colorado	Mexican spotted owl
Middle Rio Grande	Rio grande silvery minnow
Mojave	Arroyo toad
Owens	Owens tui chub
Parker-Southerly International Boundary	Razorback sucker
Roosevelt	Razorback sucker
San Diego	Arroyo toad, coastal California gnatcatcher, least Bell's vireo, Otay tarplant, Quino checkerspot butterfly, Thread-leaved brodiaea
San Francisco	Gila chub, Mexican spotted owl
San Juan	Colorado pikeminnow, razorback sucker
Santa Ana	Arroyo toad, least Bell's vireo, San Bernardino Merriam's kangaroo rat, Santa Ana sucker
Santa Clara	Arroyo toad, California condor, California red-legged frog, least Bell's vireo, Santa Ana sucker, tiderwater goby, Western snowy plover
Santa Cruz	Gila chub
Santa Ynez	Arroyo toad, California red-legged frog, least Bell's vireo
Upper Gila	Gila chub, razorback sucker
Verde	Razorback sucker
Virgin	Desert tortoise, Virgin River chub, woundfin

10 *Land Use*--The designation of critical habitat would likely result in new and reinitiated  
 11 consultations, project modifications, and conservation measures based on critical habitat alone.  
 12 No past species consultations related to land management projects have resulted in “adverse  
 13 modification” findings for flycatcher critical habitat. Based on this consultation history, the  
 14 Service anticipates that future consultations for critical habitat would likely result in minor to

1 moderate project modifications. Therefore, when considering other present and future  
2 consultations and land management plans, this critical habitat designation will likely contribute  
3 minor cumulative impacts, given the number and nature of additional project modifications  
4 anticipated.

5 *Vegetation*-- Designation of critical habitat would result in some new or reinitiated consultations,  
6 project modifications or conservation measures based on newly proposed critical habitat alone.  
7 Past consultations for the flycatcher have resulted in project modifications that have not altered  
8 or damaged vegetation as described above, though some measures have resulted in beneficial  
9 impacts to vegetation through conservation strategies. Future consultations that could affect  
10 vegetation in critical habitat would mostly occur for habitat restoration or management activities,  
11 but could also include development activities or other land management plans, which could  
12 result in minor project modifications that may affect vegetation. The proposed critical habitat  
13 includes most of the critical habitat listed in 2005, and no findings of adverse modification have  
14 been reached for projects or plans that could affect these areas. Past species consultations related  
15 to vegetation projects have all resulted in no “adverse modification” findings and, based on this  
16 consultation history, the Service anticipates that future consultations for critical habitat would  
17 likely result in minor project modifications. Therefore, when considering other present and  
18 future consultations and land management plans, this critical habitat designation will likely  
19 contribute only minor cumulative impacts, given the small number and limited nature of  
20 additional project modifications anticipated.

21 *Wildlife*--Designation of critical habitat would result in some new or reinitiated consultations,  
22 project modifications or conservation measures based on newly proposed critical habitat alone.  
23 Past consultations for the flycatcher have resulted in project modifications that have not  
24 adversely affected wildlife and wildlife management plans, and in some cases measures have  
25 resulted in beneficial impacts to wildlife. Future consultations that could affect wildlife in  
26 critical habitat would occur for habitat restoration, land management, and development activities,  
27 which could result in minor project modifications that may affect wildlife and wildlife  
28 management plans, but these affects are likely to be mostly beneficial given that project  
29 modifications tend to focus on habitat-level activities that benefit wildlife in general. The  
30 proposed critical habitat includes most of the critical habitat listed in 2005, and section 7  
31 consultations have been conducted on these areas and have resulted in project modifications that  
32 have not adversely affected vegetation or management plans that involve vegetation. Past  
33 species consultations regarding wildlife have all resulted in no “adverse modification” findings  
34 and, based on this consultation history, the Service anticipates that future consultations for  
35 critical habitat would likely result in minor project modifications. Therefore, when considering  
36 other present and future consultations and wildlife plans this critical habitat designation will  
37 likely contribute only minor cumulative impacts, given the small number and limited nature of  
38 additional project modifications anticipated.

39 *Fire Management*--Designation of critical habitat would result in some new and reinitiated  
40 consultations, with project modifications or conservation measures for fire management plans,  
41 based on newly proposed critical habitat alone. No previous species consultations on Federal  
42 lands have resulted in determinations of adverse modifications, especially because fire  
43 management is beneficial to the flycatcher. No reasonable or prudent alternatives have been  
44 required for fire management plans or activities, though projects have incorporated actions that

1 help prevent impacts, such as brush removal and controlled burning outside of the flycatcher  
2 breeding season. Consultation for adverse modification has been conducted on existing critical  
3 habitat and, based on the fire management consultation history, future consultation for land  
4 management or habitat restoration activities in critical habitat areas would likely result in minor  
5 project modifications. On private and state land, designation of critical habitat does not limit fire  
6 management programs, except where a Federal license, permit, or funding may be sought or  
7 required or collaboration with state and local fire agencies occur. Therefore, this critical habitat  
8 designation will likely contribute only minor cumulative impacts to fire management activities,  
9 given the small number and limited nature of additional project modifications anticipated.

10 *Water Resources*--The designation of critical habitat would result in new and reinitiated  
11 consultations, project modifications, and conservation measures based on critical habitat alone.  
12 Past species consultations related to water resource projects have all resulted in findings of no  
13 adverse modification and, based on this consultation history, the Service anticipates that future  
14 consultations for critical habitat would likely result in minor project modifications. Future  
15 projects that could produce impacts to water resources would be conducted by agencies with  
16 responsibility for collecting, storing, and transporting water, habitat management, development,  
17 and fire management. With the expected project modifications, these projects are expected to  
18 have no more than moderate impacts on water resources. Therefore, when considering other  
19 present and future consultations and land management plans, this critical habitat designation will  
20 likely contribute at most moderate cumulative impacts, given the relatively small number and  
21 limited nature of additional project modifications anticipated.

22 *Livestock Grazing*--Designation of critical habitat would result in some new or reinitiated  
23 consultations, project modifications or conservation measures based on newly proposed critical  
24 habitat alone. Past species consultations on Federal land have resulted in project modifications  
25 that have not eliminated or fundamentally changed livestock grazing, as described above. Since  
26 the proposed critical habitat includes most of the critical habitat listed in 2005, adverse  
27 modification consultations have been conducted on these areas and have resulted in project  
28 modifications that have also not eliminated or fundamentally changed livestock grazing. Future  
29 consultations with potential impacts to grazing within critical habitat areas could be conducted  
30 by Federal land managers who grant grazing permits, and could result in minor project  
31 modifications to livestock grazing.

32 The Service is aware there may be concerns from private ranchers about the cumulative impact  
33 of this designation on ranching activities. On some grazing allotments on Federal land, riparian  
34 areas could be excluded from grazing either year-round or seasonally, impacting private  
35 ranchers. In most cases, recommendations by Federal agencies to change the permitted or  
36 authorized AUMs in flycatcher habitat areas result from multiple considerations, including the  
37 flycatcher, other endangered species, other regulatory considerations, current forage availability,  
38 general health of the riparian corridor, and weather conditions. In the past, BLM and USFS have  
39 also tried to avoid reductions in AUMs by offsetting increases in the number of head during non-  
40 flycatcher breeding months or by changing grazing management schemes to avoid excluded  
41 riparian corridors. On private land, designation of critical habitat does not limit livestock  
42 grazing, except where a Federal license, permit, or funding may be sought or required.  
43 Therefore, when considering future consultations on livestock grazing, this designation will  
44 contribute only minor cumulative impacts given the small number and limited nature of

1 additional project modifications anticipated and implementation of avoidance measures by the  
2 USFS and BLM.

3 *Construction/Development*--Designation of critical habitat would result in some new and  
4 reinitiated consultations, with project modifications or conservation measures for construction  
5 projects, based on newly proposed critical habitat alone. Past species consultations on Federal  
6 lands have resulted in project modifications that have not eliminated or fundamentally changed  
7 construction projects. Also, consultation for adverse modification has been conducted on 2005  
8 listed critical habitat. Based on the consultation history for construction projects, future  
9 consultation by agencies on development projects would likely result in minor project  
10 modifications. On private land, designation of critical habitat does not limit construction project,  
11 except where a Federal license, permit, or funding may be sought or required. When considering  
12 past, present and foreseeable future activities, this critical habitat designation will contribute only  
13 minor cumulative impacts to construction and development given the limited nature of additional  
14 project modifications anticipated.

15 *Tribal Trust Resources*--The designation of critical habitat may result in new consultations,  
16 project modifications, and conservation measures based on critical habitat alone. Past species  
17 consultations related to projects in tribal trust areas have resulted in findings of no adverse  
18 modification and, based on this consultation history, the Service anticipates that future  
19 consultations for critical habitat would likely result in minor project modifications. Therefore,  
20 when considering other present and future consultations and land management plans, this critical  
21 habitat designation will likely contribute only minor cumulative impacts, given the small number  
22 and limited nature of additional project modifications anticipated.

23 *Soil & Mineral Resources*--Designation of critical habitat may result in new consultations,  
24 project modifications, and conservation measures based on critical habitat alone. Past species  
25 consultations related to projects that could affect soils and mineral resources have resulted in  
26 findings of no adverse modification. Future actions that could affect soil resources include  
27 development, habitat restoration, water projects, and other land management activities and, based  
28 on the consultation history, the Service anticipates that future consultations for critical habitat  
29 would likely result in minor project modifications. The effects of critical habitat designation on  
30 soils and mineral resources are expected to be beneficial because increased section 7  
31 consultations would likely have beneficial, conservation-related effects to PBFs and PCEs and  
32 designated critical habitat. Adverse impacts would likely be minor, because of the conservation  
33 measures that accompany or result from consultations.

34 *Recreation*--The designation of critical habitat would result in some new and reinitiated  
35 consultations, project modifications, and conservation measures. Past consultations related to  
36 recreational activities have all resulted in findings of no adverse modification. Future actions  
37 that could impact recreation would include land management activities or designation of critical  
38 habitat for other species. Based on the consultation history, however, the Service anticipates that  
39 future consultations for critical habitat would likely produce negligible to minor project  
40 modifications. Therefore, when considering other present and future consultations for  
41 recreation-related management planning, this critical habitat designation would likely contribute  
42 negligible to minor and beneficial cumulative impacts, given the small number and limited  
43 nature of additional project modifications anticipated.

1 *Socioeconomics*-- Cumulative socioeconomic impacts could occur to the extent that critical  
2 habitat designations for other species have already resulted in limitations on economic activity or  
3 land uses, and if the proposed designation resulted in new restrictions. The largest economic  
4 impact could potentially be felt from impacts to water management activities at Elephant Butte  
5 Reservoir in the Middle Rio Grande Management Unit if it were required to change its  
6 operations to avoid adverse modification of critical habitat. Overall, cumulative impacts in the  
7 other Management Units are likely to be at most minor, however, because any modifications or  
8 conservation measures recommended for the flycatcher in these units would likely already be  
9 implemented to avoid jeopardy to the species, and therefore they would not represent impacts of  
10 designating critical habitat. Where designation impacts recreation, grazing, road construction or  
11 other development, cumulative economic impacts are possible when considering past and present  
12 consultation outcomes, but would likely be minor, as discussed in corresponding sections.

13 *Environmental Justice*-- It is likely that any environmental justice impacts would be at most  
14 minor because the economic impacts associated with individual projects or actions would be  
15 relatively small, and there would be only a small number of projects throughout the designation  
16 which would create such impacts. Given that incremental impacts from the proposed designation  
17 are minor, the cumulative impacts, when considering past, present, and reasonably foreseeable  
18 future actions, would likewise be expected to be at minor, at most.

19 *Oil and Gas Development*—Cumulative impacts to oil and gas development could be felt if the  
20 designation, when added to other land use restrictions or land use management activities in these  
21 areas with developable resources, limited the scale or volume of development activity, or  
22 rendered such activity uneconomic by causing increases in delays or costs. However, Federal  
23 and tribal lands in the San Juan Management Unit, where oil and gas development and  
24 infrastructure are located, are already subject to avoidance and mitigation measures that have  
25 been developed over time, mostly in previous consultations with the Service. Therefore, as  
26 discussed above, project modifications are unlikely to result from these consultations, beyond  
27 those already embedded in existing conservation measures. The incremental effect of this  
28 designation is therefore likely to contribute only minor cumulative impacts, at most.

### 29 **Relationship Between Short-Term and Long-Term Productivity**

30 Proposed designation of critical habitat is a programmatic action that would not impact short-  
31 term or long-term productivity.

### 32 **Irreversible and Irretrievable Commitment of Resources**

33 NEPA requires a review of irreversible and irretrievable effects that result from the Proposed  
34 Action. Irretrievable effects apply to losses of use, production, or commitment of non-renewable  
35 natural resources caused by the action. Irreversible effects apply primarily to the use of non-  
36 renewable resources, such as minerals or cultural resources, or to those resources that are only  
37 renewable over long periods of time, such as soil productivity and forest health. Irreversible  
38 effects can also include the loss of future opportunities in the area of impact. The types of  
39 impacts caused by the designation of critical habitat for the flycatcher—new, reinitiated, and  
40 expanded consultations, additional conservation measures, and potential project modifications--  
41 would not result in lost production or use of non-renewable natural resources. There would be  
42 no loss of future opportunities resulting from designation of critical habitat, because designation

1 does not limit activities on private land that are not authorized, funded, or permitted by a Federal  
2 agency.

DRAFT

---

1 **CHAPTER 4**  
2 **ANALYSIS OF SIGNIFICANCE**

---

3 The primary purpose of preparing an environmental assessment under NEPA is to determine  
4 whether a proposed action would have significant impacts on the human environment. If  
5 significant impacts may result from a proposed action, then an environmental impact statement is  
6 required (40 CFR §1502.3). Whether a proposed action exceeds a threshold of significance is  
7 determined by analyzing the *context* and the *intensity* of the proposed action (40 CFR §1508.27).

8 Context refers to the setting of the proposed action and potential impacts of that action. The  
9 context of a significance determination may be society as a whole (human, national), the affected  
10 region, the affected interests, or the locality. Intensity refers to the severity of the impacts.

11 Under regulations of the Council of Environmental Quality (CEQ), which is responsible for  
12 ensuring compliance with NEPA, intensity is determined by considering 10 criteria (CFR 40  
13 §1508.27[b]): (1) beneficial and adverse impacts; (2) the degree of impacts on health and safety;  
14 (3) impacts on the unique characteristics of the area; (4) the degree to which the impacts would  
15 likely be highly controversial; (5) the degree to which the proposed action would impose unique,  
16 unknown, or uncertain risks; (6) the degree to which the proposed action might establish a  
17 precedent for future actions with significant effects or represent a decision in principle about a  
18 future consideration; (7) whether the proposed action is related to other actions, which  
19 cumulatively could produce significant impacts; (8) the degree to which the proposed action  
20 might adversely affect locales, objects, or structures eligible for listing in the National Register  
21 of Historic Places; (9) the degree to which the proposed action might adversely affect an  
22 endangered or threatened species or its habitat, as determined to be critical under the ESA of  
23 1973; and (10) whether the proposed action threatens a violation of Federal, state, or local law.

24 The context of short- and long-term impacts of the proposed designation of flycatcher critical  
25 habitat includes stream segments that encompass parts of 49 counties within 5 states—CA, NV,  
26 UT, AZ, and NM--in 29 Management Units clustered within 6 Recovery Units. Impacts of  
27 critical habitat designation at these scales would be minor.

- 28 1. *Potential impacts to environmental resources, both beneficial and adverse, would be*  
29 *minor or moderate in all cases.* Analyses of impacts of critical habitat designation on  
30 sensitive resources within stream segments proposed as flycatcher critical habitat were  
31 conducted and discussed in Chapter 3 of this EA, and it was determined that designation  
32 of critical habitat would have both adverse and/or beneficial impacts on those resources.  
33 These analyses concluded that the adverse impacts of critical habitat designation would  
34 not be significant.
- 35 2. *There would be no or negligible impacts to public health or safety from the proposed*  
36 *designation of critical habitat.* Impacts of wildland fire on public health and safety were  
37 determined to be minor, as wildland fire suppression and wildland fire management  
38 within WUI areas would not be significantly impeded by the designation of critical  
39 habitat.

- 1 3. *Impacts on unique characteristics of the area would be negligible.* Five designated Wild  
2 and Scenic River segments are part of the proposed critical habitat designation (see  
3 Section 1.8.1). Activities proposed by the Federal land managers in these areas would  
4 only be those specifically intended to improve the health of these riparian ecosystems,  
5 and thus they would be anticipated to help recover or sustain the PCEs along these  
6 segments. Therefore any adverse impacts to critical habitat would be negligible at most.
- 7 4. *Potential impacts to the quality of the environment are not likely to be highly*  
8 *controversial.* Impacts are not likely to be highly controversial because, as the analyses  
9 of impacts of critical habitat designation has concluded, the quality of the environment  
10 would not be significantly modified from current conditions. This analysis was based  
11 on past consultations, past impacts of flycatcher conservation on activities within the  
12 flycatcher recovery area, and the likely future impacts from flycatcher conservation. Past  
13 section 7 consultations within designated critical habitat would likely be re-initiated.  
14 New activities would result in section 7 consultations. New consultations in unoccupied  
15 flycatcher territories would be conducted. A number of activities, including livestock  
16 grazing, wildland fire, exotic vegetation management, and recreation would likely have  
17 some flycatcher-conservation-related constraints or limitations imposed on them.
- 18 Impacts to water management and resource activities are not expected to be  
19 controversial because, as discussed in the analysis of impacts on water resources, the  
20 constraints on current water management activities are expected to be limited.
- 21 It is also noted here, however, that designation of critical habitat for the southwestern  
22 willow flycatcher has been historically subject to controversy, as described in Section  
23 1.1. Most recently, the Service was sued by the Center for Biological Diversity over its  
24 2005 critical habitat rule, and on July 13, 2010, the Service agreed to redesignate critical  
25 habitat. The resulting settlement left the existing critical habitat designation from 2005 in  
26 effect, and required that the Service deliver a final rule for new revised critical habitat to  
27 the **Federal Register** by July 31, 2012.
- 28 5. *The impacts do not pose any uncertain, unique, or unknown risks.* Critical habitat has  
29 been designated for the species since 1995, and the nature of the potential impacts are  
30 clear from the actual felt impacts of on-the-ground projects, consultations, and  
31 modifications. The proposed designation may cause minor changes in the location and  
32 frequency of impacts, but not to their nature or their severity.
- 33 6. *The designation of critical habitat by the Service for the conservation of endangered*  
34 *species is not a precedent-setting action with significant effects.* The agency has  
35 designated critical habitat for numerous other species and, of course, for the southwestern  
36 willow flycatcher itself. Therefore, designating critical habitat for flycatchers is not a  
37 precedent-setting action.
- 38 7. *There would not be any significant cumulative impacts* because, as described above in  
39 Section 3, the cumulative impacts would be limited to section 7 consultation  
40 outcomes and subsequent effects on other species, the effects of designated critical  
41 habitat for other species, and the effects of land management plans.
- 42 8. *This critical habitat designation is not likely to affect sites, objects, or structures of*  
43 *historical, scientific, or cultural significance* because any such potential impacts  
44 would be addressed by Federal and state laws enacted to protect and preserve these  
45 resources.

- 1 9. *The proposed designation of critical habitat for flycatcher would have long-term,*  
2 *beneficial effects for this endangered subspecies.* The purpose of the Proposed Action  
3 is to re-designate critical habitat for the flycatcher, a subspecies listed as endangered  
4 under the ESA. Critical habitat designation would have long-term, beneficial,  
5 conservation-related impacts on the flycatcher subspecies' survival and recovery through  
6 maintenance of PCEs.  
7 10. *Proposed critical habitat designation would not violate any Federal, state, or local laws.*  
8 This re-designation of critical habitat was agreed to pursuant to a settlement agreement  
9 with the Center for Biological Diversity, as described above.

10

DRAFT

---

1 **CHAPTER 5**  
2 **PREPARERS AND CONTRIBUTORS**

---

3 This environmental assessment was prepared by Mangi Environmental Group under contract to  
4 the U.S. Fish and Wildlife Service, Region 2. The economic analysis was prepared by Industrial  
5 Economics, Inc., under contract to U.S. Fish and Wildlife Service, Washington Office.

6 **Contributors**

7 Mangi Environmental Group, Inc.

8 Bruce Kaplan, MS, Environmental Law—Senior Environmental Professional, Project Manager

9 Chelsie Romulo, Masters of Natural Resource Management—Wildlife Biologist

10 Carrie Oberholtzer, Masters in Forest Natural Resource Management—Environmental Analyst

11 Erica Earhart, BA, Environmental Geoscience—Environmental Analyst

12 Julie Sapanik, BS, Environmental Mapping—GIS Specialist

13 Nathalie Jacque, B.S., International Relations (International Economics and Environmental  
14 Affairs) and Environmental Science—Socioeconomic Analyst

15 Marissa Staples Resnick, MS, Environmental Science & Policy—Land Use & Tribal Resources

16 U.S. Fish & Wildlife Service

17 Greg Beatty, Fish and Wildlife Biologist

18 **Reviewers**

19 Department of Interior

20 Janet Spaulding, Solicitor

21 U.S. Fish & Wildlife Service

22 Nathan Allan, Listing Biologist

23

---

## 1 CHAPTER 6

## 2 REFERENCES

---

3 Animal and Plant Health Inspection Service (APHIS). 2010. Memo to PPQ State Plant Health  
4 Directors from Alan Dowdy, Director of Invertebrate and Biological Control Programs  
5 announcing moratorium for biological control of salt cedar using tamarisk leaf beetle. U.S.  
6 Department of Agriculture, Plant Protection and Quarantine, Emergency and Domestic  
7 Programs, Riverdale, MD. Accessed online October 2010 at  
8 [http://www.peer.org/docs/usda/6\\_22\\_10\\_USDA\\_leaf\\_beetle\\_notice.pdf](http://www.peer.org/docs/usda/6_22_10_USDA_leaf_beetle_notice.pdf)  
9

10 Arizona Department of Environmental Quality (ADEQ). 2006. *TMDL Implementation Plan for*  
11 *Nitrogen and Escherichia coli. Tonto Creek & Christopher Creek, Gila County, Arizona.*  
12 Accessed February 15, 2012 at:  
13 <http://www.azdeq.gov/environ/water/assessment/download/tonto.pdf>.

14  
15 Arizona Department of Water Resources (ADWR). 2011. Surface Water Rights. Accessed  
16 October 2011 at  
17 <http://www.azwater.gov/AzDWR/SurfaceWater/SurfaceWaterRights/default.htm>.

18  
19 ----. 2009. Letter requesting reinitiation of section 7 consultation for biological control of  
20 tamarisk using the tamarisk-defoliating leaf beetle. Accessed online October 2011 at  
21 [http://www.biologicaldiversity.org/species/birds/southwestern\\_willow\\_flycatcher/pdfs/2009\\_0515-APHIS-to-USFWS-CONSULTATION.pdf](http://www.biologicaldiversity.org/species/birds/southwestern_willow_flycatcher/pdfs/2009_0515-APHIS-to-USFWS-CONSULTATION.pdf)  
22

23  
24 California Department of Water Resources (CADWR). 2011. Groundwater Management.  
25 Accessed October 2011 at  
26 <http://www.water.ca.gov/groundwater/gwmanagement/index.cfm>.

27  
28 CDM. 2009. Camp Dresser and McKee Inc. (CDM) and Risk Sciences, Inc., 2009. Santa Ana  
29 Watershed Project Authority, Use Attainability Analysis Technical Report (Draft). 2009.  
30 Accessed December 2011 at  
31 [http://www.sawpa.org/documents/LatestPosts/Draft%20UAA%20Tech%20Report\\_Temescal%20Creek%20October%202009.pdf](http://www.sawpa.org/documents/LatestPosts/Draft%20UAA%20Tech%20Report_Temescal%20Creek%20October%202009.pdf)  
32

33  
34 Colorado Division of Water Resources (CODWR). No Date. Water Rights. Accessed October  
35 2011 at <http://water.state.co.us/SurfaceWater/SWRights/Pages/default.aspx>.

36  
37 County of Santa Barbara. 2008. *Santa Barbara County Integrated Regional Water Management*  
38 *Program*. Accessed November 2011 at  
39 <http://www.countyofsb.org/pwd/pwwater.aspx?id=16852>.

40 County of Santa Barbara. 2007. *Water Supply*. Accessed November 2011 at  
41 <http://www.countyofsb.org/pwd/pwwater.aspx?id=3574>.

1 Environmental Protection Agency (EPA). 2011. Wetlands Definitions. Accessed October 2011  
2 at <http://water.epa.gov/lawsregs/guidance/wetlands/definitions.cfm>.  
3

4 ERO, 2008. ERO Resources Corporation and Salt River Project. Habitat Conservation Plan  
5 Horseshoe and Bartlett Reservoirs. Accessed 2011 at  
6 [http://www.fws.gov/southwest/es/arizona/Documents/HCPs/Horseshoe/Attachment%201%  
7 20-%20Horseshoe-Bartlett%20HCP%20March%202008.pdf](http://www.fws.gov/southwest/es/arizona/Documents/HCPs/Horseshoe/Attachment%201%20-%20Horseshoe-Bartlett%20HCP%20March%202008.pdf).

8 Federal Emergency Management Agency (FEMA). 2010. Procedure Memorandum 64 –  
9 Compliance with the Endangered Species Act (ESA) for Letters of Map Change. Accessed  
10 October 2011 at <http://www.fema.gov/library/viewRecord.do?id=4312>.  
11

12 FOTC, 2008. Friends of Temescal Creek, 2008. *Friends of Temescal Creek, Water Quality*  
13 *Monitoring*. Accessed December 2011 at  
14 [http://www.temescalcreek.org/news/FOTC%20Report\\_min.pdf](http://www.temescalcreek.org/news/FOTC%20Report_min.pdf).

15 Glenn, E.P., and P.L. Nagler. 2005. Comparative ecophysiology of *Tamarix ramosissima* and  
16 native trees in western U.S. riparian zones. *Journal of Arid Environments* 61:419-446  
17

18 Heil, K., and S. O’Kane. 2005. Catalog of the Four Corners Flora: Vascular Plants of the San  
19 Juan River Drainage Arizone, Colorado, New Mexico, Utah. 9<sup>th</sup> Ed. Accessed online  
20 October 2011 at  
21 <http://www.sanjuancollege.edu/documents/Herbarium/FourCornersFlora.pdf>  
22

23 Industrial Economics, Inc. (IEc). 2012. *Draft economic analysis of critical habitat designation*  
24 *for the southwestern willow flycatcher*. Prepared by Industrial Economics, Inc., Cambridge,  
25 Massachusetts. Submitted to Division of Economics, U.S. Fish and Wildlife Service,  
26 Arlington, Virginia.  
27

28 Lester, J. 2002. Livestock Grazing on Federal Lands. Accessed June 2011 at  
29 <http://www.colorado.edu/economics/morey/8545/student/livestock/grazing.htm>.  
30

31 Memorandum of Understanding (MOU). 2006. Memorandum of Understanding Among the  
32 U.S. Bureau of Reclamation, The U.S. Fish and Wildlife Service, The New Mexico  
33 Interstate Stream Commission, the Southwest New Mexico Water Planning Group or its  
34 successor, and the New Mexico Office of the Governor-to create the Gila-Francisco  
35 Coordinating Committee. Accessed November 2011 at  
36 [http://www.ose.state.nm.us/PDF/ISC/BasinsPrograms/GilaSanFrancisco/GSFCC-MOU-  
37 2006-03-24.pdf](http://www.ose.state.nm.us/PDF/ISC/BasinsPrograms/GilaSanFrancisco/GSFCC-MOU-2006-03-24.pdf).  
38

39 National Wild Turkey Federation. 2010. North American Wild Turkey Management Plan.  
40 Accessed online October 2011 at <http://www.nwtf.org/NAWTMP/>  
41

42 Navajo Nation Heritage Program. 2012. Navajo Endangered Species List. Accessed April 2012  
43 at [http://nnhp.nndfw.org/nnhp\\_nesl.pdf](http://nnhp.nndfw.org/nnhp_nesl.pdf).  
44

1 Nevada State Division of Water Rights (NDWR). 2011. Nevada Water Law. Accessed October  
2 2011 at <http://water.nv.gov/waterrights/waterlaw/>.  
3

4 New Mexico Interstate Stream Commission. 2010. Memorandum: Arizona Water Settlement  
5 Act Project Proposals – Internal Review of Proposals – Submitted at Nov, 22. 2010 ISC  
6 Meeting. Accessed November 2011 at  
7 [http://www.awsaplanning.com/Archives\\_files/2010%20December%20Gila%20memo%20-  
8 %20projects.pdf](http://www.awsaplanning.com/Archives_files/2010%20December%20Gila%20memo%20-%20projects.pdf).  
9

10 New Mexico Office of the State Engineer (NMOSE). 2011. Welcome. Accessed October 2011  
11 at <http://www.ose.state.nm.us/index.html>.  
12

13 National Park Service (NPS). 2011a. Survey of Historic Sites and Buildings—Old Mission  
14 Dam. Accessed December 2011 at  
15 [http://www.cr.nps.gov/history/online\\_books/explorers/sitec7.htm](http://www.cr.nps.gov/history/online_books/explorers/sitec7.htm)  
16

17 ----. 2011b. National Park Service Public Use Statistics Office. 2011. *Annual Park Visitation*  
18 *(All Years): Death Valley NP, Joshua Tree NP, Lake Mead NRA, Mesa Verde NP,*  
19 *Tumacácori NHP, Tuzigoot NM, Yosemite NP.* Accessed December 2011 at  
20 <http://www.nature.nps.gov/stats/viewReport.cfm>.

21 Pima. No Date. Pima County, AZ Threatened and Endangered Species Factsheets:  
22 Southwestern willow flycatcher. Accessed online October 2011 at  
23 <http://www.pima.gov/cmo/sdcp/species/fsheets/swf.html>  
24

25 Poff, N.J. et al. 2009. The Natural Flow Regime; A Paradigm for river conservation and  
26 restoration. *Bioscience* 47(11): 769-784.  
27

28 San Diego County Water Authority. No Date. Regional Water Facilities Master Plan. Accessed  
29 November 2011 at <http://www.sdcwa.org/rwfmp>.  
30

31 Sogge, M.K., Ahlers, Darrell, and Sferra, S.J. 2010. A natural history summary and survey  
32 protocol for the Southwestern Willow Flycatcher: U.S. Geological Survey Techniques  
33 and Methods 2A-10, 38 p.  
34

35 Stromberg, J.C., Chew, M. K., Nagler, P.L., and E.P. Glenn. 2009. Changing Perceptions of  
36 Change: The Role of Scientists in *Tamarisk* and River Management. *Restoration Ecology*  
37 17(2): 177-186.  
38

39 United States Army Corps of Engineers (ACE). 2006. X Diamond Ranch Little Colorado River  
40 Riparian Enhancement Project U.S. Corps of Engineers File Number; 2006-00204-DE.  
41

42 ----. 2010. National Inventory of Dams. Accessed November 2011 at  
43 <http://geo.usace.army.mil/pgis/f?p=397:12:783536276189834>.  
44

45 U.S. Bureau of Economic Analysis, data released on 6/7/2011, accessed February 15, 2012, at:  
46 <http://www.bea.gov/regional/gdpmap/GDPMap.aspx>

- 1  
2 U.S. Bureau of Land Management (BLM). 2000. *Estimated Recreational Use of Public Lands*  
3 *Administered by the BLM, Fiscal Year 2005*. Accessed December 2011 at  
4 [http://www.blm.gov/public\\_land\\_statistics/pls00/index.html](http://www.blm.gov/public_land_statistics/pls00/index.html)  
5
- 6 ----. 2005. *Estimated Recreational Use of Public Lands Administered by the BLM, Fiscal Year*  
7 *2005*. Accessed December 2011 at [http://www.blm.gov/public\\_land\\_statistics/pls05/pls4-](http://www.blm.gov/public_land_statistics/pls05/pls4-1_05.pdf)  
8 [1\\_05.pdf](http://www.blm.gov/public_land_statistics/pls05/pls4-1_05.pdf).  
9
- 10 ----. 2008. *Resource Management Plan, Monticello Field Office, Appendix B: Stipulations*  
11 *Applicable to Oil and Gas Leasing and Other Surface-Disturbing Activities*. November  
12 2008. Accessed April 2012 at  
13 [http://www.blm.gov/pgdata/etc/medialib/blm/ut/monticello\\_fo/](http://www.blm.gov/pgdata/etc/medialib/blm/ut/monticello_fo/planning/rod_approved_rm) [planning/rod\\_approved\\_rm](http://www.blm.gov/pgdata/etc/medialib/blm/ut/monticello_fo/planning/rod_approved_rm)  
14 [p.Par.91038.File.dat/Monticello%20Appendices.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/ut/monticello_fo/planning/rod_approved_rm).  
15
- 16 ----. 2010. *Estimated Recreational Use of Public Lands Administered by the BLM, Fiscal Year*  
17 *2005*. Accessed December 2011 at [http://www.blm.gov/public\\_land\\_statistics/pls05/pls4-](http://www.blm.gov/public_land_statistics/pls05/pls4-1_10.pdf)  
18 [1\\_10.pdf](http://www.blm.gov/public_land_statistics/pls05/pls4-1_10.pdf).  
19
- 20 ----. 2010. Environmental Assessment Record, San Luis Resource Area Travel Management  
21 Plan. CO-500-20050016-EA.  
22
- 23 ----. 2011. The Taylor Grazing Act. Accessed June 2011 at  
24 [http://www.blm.gov/wy/st/en/field\\_offices/Casper/range/taylor.1.html](http://www.blm.gov/wy/st/en/field_offices/Casper/range/taylor.1.html).  
25
- 26 U.S. Census Bureau (Census). *Census 2000 Summary File 2 (SF 2): Arizona, California,*  
27 *Colorado, Nevada, New Mexico, Utah*. Accessed December 2011 at  
28 [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?\\_afpt=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?_afpt=table).
- 29 ----. 2005. *Interim Projections of the Total Population for the United States and States: April 1,*  
30 *2000 to July 1, 2030*. Accessed December 2011 at:  
31 <http://www.census.gov/population/www/projections/files/SummaryTabA1.pdf>.
- 32 ----. 2010. 2010 Census Interactive Population Search: *Arizona, California, Colorado, Nevada,*  
33 *New Mexico, Utah*. Accessed December 2011 at  
34 <http://2010.census.gov/2010census/popmap/ipmtext.php?fl=04>.  
35
- 36 U.S. Department of Agriculture (USDA). 2005. Program for Biological Control of Saltcedar  
37 (Tamarix spp) in Thirteen States. June 2005 Environmental Assessment. Accessed online  
38 March 2012 at [http://www.aphis.usda.gov/plant\\_health/ea/downloads/salteafonsi.pdf](http://www.aphis.usda.gov/plant_health/ea/downloads/salteafonsi.pdf)  
39
- 40 ----. 2006. Digital General Soil Map of U.S. Accessed October 2011 at  
41 <http://SoilDataMart.nrcs.usda.gov/>  
42
- 43 ----. 2011. NRCS Official Soil Series Description Query Facility. Accessed October 2011 at  
44 <https://soilseries.sc.egov.usda.gov/osdnamequery.asp>  
45

- 1 ----. 2012. Management Plans by Species; Saltcedar. Accessed online March 2012 at  
2 <http://www.invasivespeciesinfo.gov/plants/controlplans.shtml#sc>.  
3
- 4 United States Fish & Wildlife Service (Service). 2000. Status, Ecology, and Conservation of the  
5 Southwestern Willow Flycatcher. General Technical Report RMRS-GTR-60. Accessed  
6 online October 2011 at [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr060.pdf](http://www.fs.fed.us/rm/pubs/rmrs_gtr060.pdf)  
7
- 8 ----. 2002. Final Recovery Plan, Southwestern Willow Flycatcher (*Empidonax traillii extimus*).  
9 Department of the Interior, U.S. Fish and Wildlife Service, Region 2, Albuquerque, New  
10 Mexico.  
11
- 12 ----. 2004. Biological and Conference Opinion for the BLM Arizona Statewide Land Use Plan  
13 Amendment for Fire, Fuels, and Air Quality Management. Accessed online October 2011 at  
14 [http://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/030210\\_BLM\\_FireUse.pdf](http://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/030210_BLM_FireUse.pdf)  
15  
16
- 17 ----. 2005. Designation of Critical Habitat for the Southwestern Willow Flycatcher – Final  
18 Environmental Assessment. U.S. Fish and Wildlife Service. September 2005.  
19
- 20 ----. 2005a. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for  
21 the Southwestern Willow Flycatcher (*Empidonax traillii extimus*). Final Rule. 50 CFR  
22 Part 17. 70 FR 60886-61009.  
23
- 24 ----. 2005b. Biological Opinion for the Saltcedar Removal and Riparian Restoration Project  
25 within the Amargosa River Drainage. Consultation No. 1-8-03-F-42  
26
- 27 ----. 2005c. Programmatic Biological and Conference Opinion: The Continued Implementation  
28 of the Land and Resource Management Plans for the Eleven National Forests and National  
29 Grasslands of the Southwestern Region. Accessed online October 2011 at  
30 [http://www.biologicaldiversity.org/programs/public\\_lands/forests/pdfs/BO\\_20050610\\_FS\\_LRMP.pdf](http://www.biologicaldiversity.org/programs/public_lands/forests/pdfs/BO_20050610_FS_LRMP.pdf)  
31  
32
- 33 ----. 2005d. Intra-Service Formal Consultation and Conference Opinion on the Issuance of  
34 Recovery Permits for the Endangered Southwestern Willow Flycatcher for Scientific  
35 Purposes and/or Enhancement of Propagation or Survival (TE-100579). Accessed online  
36 October 2011 at  
37 [http://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/050331\\_Verde10a1a.pdf](http://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/050331_Verde10a1a.pdf)  
38
- 39 ----. 2005e. Programmatic Biological and Conference Opinion on the Continued  
40 Implementation of the Land and Resource Management Plans for the Eleven National  
41 Forests and National Grasslands of the Southwestern Region. 2-22-03-F-366. Accessed at  
42 <http://www.fws.gov/southwest/es/arizona/Biological.htm>.  
43
- 44 ----. 2005f. 26 Bar Grazing Allotment Biological and Conference Opinion. 02-21-04-F-0355.  
45 Accessed October 2011 at <http://www.fws.gov/southwest/es/arizona/Biological.htm>.  
46

- 1 ----. 2005g. Final Economic Analysis of Critical Habitat Designation for the Southwestern  
2 Willow Flycatcher.  
3
- 4 ----. 2005h. Reinitiation of Consultation for the City of Mesquite's Post-Flood Actions and  
5 2005 Runoff Season Food Control Measures, Virgin River, Clark County, Nevada and  
6 Mohave County, Arizona. Consultation No. 1-5-05-F-457  
7
- 8 ----. 2005i. Programmatic and Biological Conference Opinion: The Continued Implementation  
9 of the Land and Resource Management Plans for the Eleven National Forests and National  
10 Grasslands of the Southwestern Region. Consultation 2-22-03-F-366.
- 11 ----. 2006a. Biological Opinion for the Proposed Tamarisk Removal, Hazardous Fuels  
12 Treatment, and Boundary Fence Construction at Tumacacori National Historical Park.  
13 Accessed October 2011 at  
14 [http://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/050829\\_Tumacacori.pdf](http://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/050829_Tumacacori.pdf)  
15
- 16 ----. 2006b. Biological Opinion for Morelos Diversion Dam Channel Capacity Restoration  
17 Project. 02-21-01-F-0383. Accessed October 2011 at  
18 <http://www.fws.gov/southwest/es/arizona/Biological.htm>.  
19
- 20 ----. 2006c. Biological Opinion for the proposed replacement of the 8th Avenue Bridge over the  
21 Gila River in Safford, Graham County, Arizona. Accessed October 2011 at  
22 <http://www.fws.gov/southwest/es/arizona/Biological.htm>  
23
- 24 ----. 2006d. Biological Opinion for Cotton Lane Bridge, Bank Stabilization, and Habitat  
25 Modification at the Gila River. 02-21-04-F-0255. Accessed October 2011 at  
26 <http://www.fws.gov/southwest/es/arizona/Biological.htm>.  
27
- 28 ----. 2006e. Biological Opinion for the Proposed Construction of the Florence-Kelvin Bridge  
29 over the Gila River in Pinal County, Arizona. 22410-2006-F-0429. Accessed October  
30 2011 at <http://www.fws.gov/southwest/es/arizona/Biological.htm>  
31
- 32 ----. 2007a. Final Biological Opinion for the Arizona Strip Resource Management Plan. U.S.  
33 Fish and Wildlife Service Consultation No. 22410-2007-F-0463.  
34
- 35 ----. 2007b. Voigt Grazing Allotment Biological Opinion. 22410-2003-F-0298. Accessed  
36 October 2011 at <http://www.fws.gov/southwest/es/arizona/Biological.htm>  
37
- 38 ----. 2007c. Biological Opinion for the Arizona Strip Resource Management Plan. Accessed  
39 October 2011 at  
40 [http://www.fws.gov/southwest/es/arizona/Documents/Biol\\_Opin/020277\\_R1\\_AZStripRMP.pdf](http://www.fws.gov/southwest/es/arizona/Documents/Biol_Opin/020277_R1_AZStripRMP.pdf)  
41  
42
- 43 ----. 2008a. Request for Formal and Informal Consultation on the Meadow Valley Wash Salt  
44 Cedar Control Project, Lincoln County, NV. Consultation No. 84320-2008-F-0163

- 1 ----. 2008b. Intra-Service Biological and Conference Opinion – Issuance of a Section  
2 10(1)(1)(B) Permit to Salt River Project for Incidental Take of Threatened and Endangered  
3 Species Associated with Operation of Horseshoe and Bartlett Reservoirs. AESO/SE  
4 22410-2003-F-0430. Accessed November 2011 at  
5 <http://www.fws.gov/southwest/es/arizona/Biological.htm>.
- 6 ----. 2008c. U.S. Fish and Wildlife’s Intra-Service Biological and Conference Opinion on  
7 Issuance of an Enhancement of Survival Permit (TE-083686-0) to the Arizona Game and  
8 Fish Department. Accessed November 2011 at  
9 <http://www.fws.gov/southwest/es/arizona/Biological.htm>.
- 10 ----. 2008d. U.S. Fish and Wildlife’s Biological Opinion on the Effects of Actions Associated  
11 with the Biological Assessment for the elephant butte Reservoir Temporary Channel  
12 Maintenance Project. Accessed November 2011 at  
13 [http://www.fws.gov/southwest/es/NewMexico/ES\\_bio\\_op.cfm](http://www.fws.gov/southwest/es/NewMexico/ES_bio_op.cfm)  
14
- 15 ----. 2008e. Programmatic Biological Opinion, Informal Consultation, and Technical Assistance  
16 for Implementation of Actions Proposed in the Ely Proposed Resource Management Plan,  
17 Lincoln, White Pine, and Portions of Nye Counties, Nevada. 84320-2008-F-0078.  
18
- 19 ----. 2008f. Bonytail Chub current distribution map. Accessed online February 2012 at  
20 [http://www.fws.gov/southwest/es/arizona/Documents/Redbook/Redbook%20Maps/bonytai](http://www.fws.gov/southwest/es/arizona/Documents/Redbook/Redbook%20Maps/bonytail_chub.pdf/)  
21 [l\\_chub.pdf/](http://www.fws.gov/southwest/es/arizona/Documents/Redbook/Redbook%20Maps/bonytail_chub.pdf/)  
22
- 23 ----. 2008g. Biological Opinion for BLM Resource Management Plan, Monticello Field Office,  
24 Consultation Number 08-F-0068 6-UT-08-F-024. Accessed April 2012 at  
25 [http://www.blm.gov/pgdata/etc/medialib/blm/ut/monticello\\_fo/\\_planning/rod\\_approved\\_r](http://www.blm.gov/pgdata/etc/medialib/blm/ut/monticello_fo/_planning/rod_approved_rmp.Par.70450.File.dat/Monticello%20Biological%20Opinion.pdf)  
26 [mp.Par.70450.File.dat/Monticello%20Biological%20Opinion.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/ut/monticello_fo/_planning/rod_approved_rmp.Par.70450.File.dat/Monticello%20Biological%20Opinion.pdf).  
27
- 28 ----. 2009a. Final Biological Opinion for Livestock Grazing in Southwestern Willow Flycatcher  
29 Habitat in Meadow Valley Washington. Consultation No. 84320-2009-F-0341.  
30
- 31 ----. 2009b. Final Gunnison River Basin Programmatic Biological Opinion. Accessed online  
32 October 2011 at [http://www.seleniumtaskforce.org/images/GU\\_PBO\\_Final\\_Final\\_12-](http://www.seleniumtaskforce.org/images/GU_PBO_Final_Final_12-4_09.pdf)  
33 [4\\_09.pdf](http://www.seleniumtaskforce.org/images/GU_PBO_Final_Final_12-4_09.pdf)  
34
- 35 ----. 2009c. Biological Opinion on the Effects of Actions Associated with the Piscide Project  
36 on the Upper West Fork Gila River. Accessed online October 2011 at  
37 [http://www.fws.gov/southwest/es/newmexico/documents/BO/2008-](http://www.fws.gov/southwest/es/newmexico/documents/BO/2008-0143_Final_WF_Gila_rotenone_BO.pdf)  
38 [0143\\_Final\\_WF\\_Gila\\_rotenone\\_BO.pdf](http://www.fws.gov/southwest/es/newmexico/documents/BO/2008-0143_Final_WF_Gila_rotenone_BO.pdf)  
39
- 40 ----. 2009d. Biological Opinion on the Ongoing Grazing for Three Allotments on the Tonto  
41 National Forest. 22410-2007-F-0218.  
42
- 43 ----. 2009e. Biological Opinion for the Rainbow Canyon Highway Reconstruction Project in  
44 Lincoln County, Nevada. 84320-2009-F-0038.  
45

- 1 ----. 2009f. *Final Comprehensive Conservation Plan and Environmental Impact Statement*  
2 *Summary – August 2009, Desert National Wildlife Refuge Complex (Ash Meadows, Desert,*  
3 *Moapa Valley, and Pahrangat National Wildlife Refuges)*. Accessed December 2011 at  
4 [http://www.fws.gov/desertcomplex/pdf/01\\_FinalCCP-EIS\\_Summary\\_20090814.pdf](http://www.fws.gov/desertcomplex/pdf/01_FinalCCP-EIS_Summary_20090814.pdf).  
5
- 6 ----. 2010a. Biological Opinion for the Proposed Greenwood Community Grazing Allotment  
7 Permit Renewal. Accessed October 2011 at  
8 <http://www.fws.gov/southwest/es/arizona/Biological.htm>.  
9
- 10 ----. 2010b. Biological Opinion for the Proposed US 70 Gila River Bridge at Bylas.  
11 FWS/R2/ES-TE/045708.  
12
- 13 ----. 2010c. Biological Opinion for the US 70 San Carlos River Bridge. 22410-F-2009-0281.  
14
- 15 ----. 2011a. Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule  
16 to Re-Designate Critical Habitat for the Southwestern Willow Flycatcher (*Empidonax*  
17 *traillii exitmus*). October 2011.  
18
- 19 ----. 2011b. Final Biological Opinion for Restoration of the Gila River at Apache Grove. U.S.  
20 Fish and Wildlife Service Consultation No. 22410-2010-F-0487).  
21
- 22 ----. 2011c. Environmental conservation online system: Endangered species by county.  
23 Accessed online October 2011 at <http://ecos.fws.gov/ecos/indexPublic.do>  
24
- 25 ----. 2011d. Biological and Conference Opinion for Wildlife and Sport Fish Restoration  
26 Funding of Arizona Game and Fish Department’s Statewide and Urban Fisheries Stocking  
27 Program for 2011-2021. Accessed online October 2011 at  
28 [http://www.fws.gov/southwest/Federal\\_assistance/PDFs/Titletableofcontents.pdf](http://www.fws.gov/southwest/Federal_assistance/PDFs/Titletableofcontents.pdf)  
29
- 30 ----. 2011e. All Habitat Conservation Plan Documents for the Southwestern Willow Flycatcher.  
31 Accessed November 2011 at  
32 <http://ecos.fws.gov/speciesProfile/profile/displayAllDocuments!hcp.action?spcode=B094>  
33
- 34 U.S. Forest Service (USFS). 2000. Status, Ecology, and Conservation of the Southwestern  
35 Willow Flycatcher. General Technical Report RMRS-GTR-60. Accessed online October  
36 2011 at [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr060.pdf](http://www.fs.fed.us/rm/pubs/rmrs_gtr060.pdf)  
37
- 38 ----. 2005a. *National Visitor Use Monitoring, Annual Visitation Estimate: Gila National Forest*.  
39 Accessed December 2011 at  
40 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03006/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03006/Round2?filename=Visitation&format=PortableDocFormat)  
41 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03006/Round2?filename=Visitation&format=PortableDocFormat).
- 42 ----. 2005b. *National Visitor Use Monitoring, Annual Visitation Estimate: Rio Grande National*  
43 *Forest*. Accessed December 2011 at  
44 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A02009/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A02009/Round2?filename=Visitation&format=PortableDocFormat)  
45 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A02009/Round2?filename=Visitation&format=PortableDocFormat).

- 1 ----. 2005c. *National Visitor Use Monitoring, Annual Visitation Estimate: Sequoia National*  
2 *Forest*. Accessed December 2011 at  
3 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05013/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05013/Round2?filename=Visitation&format=PortableDocFormat)  
4 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05013/Round2?filename=Visitation&format=PortableDocFormat).
- 5 ----. 2006. *National Visitor Use Monitoring, Annual Visitation Estimate: Angeles National*  
6 *Forest*. Accessed December 2011 at  
7 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05001/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05001/Round2?filename=Visitation&format=PortableDocFormat)  
8 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05001/Round2?filename=Visitation&format=PortableDocFormat).
- 9 ----. 2007a. *National Visitor Use Monitoring, Annual Visitation Estimate: Apache-Sitgreaves*  
10 *National Forest*. Accessed December 2011 at  
11 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03001/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03001/Round2?filename=Visitation&format=PortableDocFormat)  
12 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03001/Round2?filename=Visitation&format=PortableDocFormat).
- 13 ----. 2007b. *National Visitor Use Monitoring, Annual Visitation Estimate: Coronado National*  
14 *Forest*. Accessed December 2011 at  
15 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03005/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03005/Round2?filename=Visitation&format=PortableDocFormat)  
16 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03005/Round2?filename=Visitation&format=PortableDocFormat).
- 17 ----. 2007c. *National Visitor Use Monitoring, Annual Visitation Estimate: Prescott National*  
18 *Forest*. Accessed December at  
19 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03009/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03009/Round2?filename=Visitation&format=PortableDocFormat)  
20 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03009/Round2?filename=Visitation&format=PortableDocFormat).
- 21 ----. 2008a. *National Visitor Use Monitoring, Annual Visitation Estimate: Carson National*  
22 *Forest*. Accessed December 2011 at  
23 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03002/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03002/Round2?filename=Visitation&format=PortableDocFormat)  
24 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03002/Round2?filename=Visitation&format=PortableDocFormat).
- 25 ----. 2008b. *National Visitor Use Monitoring, Annual Visitation Estimate: Los Padres National*  
26 *Forest*. Accessed December 2011 at  
27 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05007/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05007/Round2?filename=Visitation&format=PortableDocFormat)  
28 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05007/Round2?filename=Visitation&format=PortableDocFormat).
- 29 ----. 2008c. *National Visitor Use Monitoring, Annual Visitation Estimate: Tonto National*  
30 *Forest*. Accessed December 2011 at  
31 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03012/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03012/Round2?filename=Visitation&format=PortableDocFormat)  
32 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A03012/Round2?filename=Visitation&format=PortableDocFormat).
- 33 ----. 2009a. *National Visitor Use Monitoring, Annual Visitation Estimate: Cleveland National*  
34 *Forest*. Accessed December 2011 at  
35 [http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05002/Round2?filena](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05002/Round2?filename=Visitation&format=PortableDocFormat)  
36 [me=Visitation&format=PortableDocFormat](http://apps.fs.usda.gov/nrm/nvum/results/Report.aspx/Export/VE01/A05002/Round2?filename=Visitation&format=PortableDocFormat).
- 37 ----. 2010. Southwestern Region. *Draft Environmental Impact Statement for Public Motorized*  
38 *Travel Management Plan, Apache-Sitgreaves National Forest*. Accessed December 2011  
39 at [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5209759.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5209759.pdf).

1 U.S. Geological Survey (USGS). 2005. Mineral Resources Data System. Accessed October  
2 2011 at <http://tin.er.usgs.gov/mrds/>  
3  
4 ----. 2006. GIS 1:2,000,000-Scale Hydrologic Unit Boundaries.  
5  
6 ----. 2009. Estimated Use of Water in the United States in 2005. Accessed October 2011 at  
7 <http://pubs.usgs.gov/circ/1344/pdf/c1344.pdf>.  
8  
9 ----. 2011. What does a Southwestern Willow Flycatcher look like? Southwestern Willow  
10 Flycatcher Site. Accessed online October 2011 at  
11 <http://sbsc.wr.usgs.gov/cprs/research/projects/swwf/cprsmain.asp>  
12  
13 Utah Division of Water Rights (UDWR). 2010. Distribution by Water Right Priority. Accessed  
14 October 2011 at <http://www.waterrights.utah.gov/basics/032210.asp>.

DRAFT