

MEMORANDUM | April 12, 2013

TO U.S. Fish and Wildlife Service
FROM Industrial Economics, Incorporated (IEc)
SUBJECT Incremental Impacts Associated with the Final Critical Habitat Designation for Southwestern Willow Flycatcher

BACKGROUND

The purpose of this memorandum is to provide information on the incremental economic impacts associated with the final critical habitat designation for the southwestern willow flycatcher (*Empidonax traillii extimus*) (flycatcher) as described in the Final Rule.¹

The December 2012 Economic Analysis of Critical Habitat Designation for Southwestern Willow Flycatcher (FEA) estimates the incremental economic impacts associated with the revised proposed critical habitat as described in the 2011 Proposed Rule, to which revisions were made in July 2012.² The area analyzed in the FEA included approximately 2,112 stream miles, organized into 29 management units, that were proposed as critical habitat for the flycatcher, as well as the lateral extent of the proposed segments extending to the 100-year floodplain limits or similarly flood-prone areas. In total, this study area included approximately 532,635 acres across six states (Arizona, California, Colorado, New Mexico, Nevada, and Utah).

The Final Rule excludes approximately 790 stream miles (about 37 percent) of the proposed critical habitat. Exhibit 1 below outlines the excluded areas by management unit and category of exclusion (e.g., Tribal Partnerships, HCPs, etc.). This memorandum then discusses the changes in economic impacts that result from these exclusions, by economic activity. Exhibits 2 and 3 present the revised incremental cost estimates of the Final Rule by activity and management unit, respectively.

¹ 78 FR 344.

² 76 FR 50542. Revised by 77 FR 41147.

EXHIBIT 1. SUMMARY OF EXCLUDED FLYCATCHER CRITICAL HABITAT AREAS

MANAGEMENT UNIT	REASON FOR EXCLUSION	ACTIVITIES AFFECTED	STREAM MILES EXCLUDED
Tribal Partnerships and Management Plans			
Santa Ana	<ul style="list-style-type: none"> Ramona Band of Cahuilla Partnership 	Tribal Activities	0.3
San Diego	<ul style="list-style-type: none"> La Jolla Band of Luiseno Indians Management Plan Rincon Band of Luiseno Mission Indians Management Plan Pala Band of Luiseno Mission Indians Partnership Barona and Viejas Groups of Capitan Grande Band of Diegueno Mission Indians Partnership 	Tribal Activities	15.7
Salton	<ul style="list-style-type: none"> Iipay Nation of Santa Ysabel Partnership 	Tribal Activities	1
Little Colorado	<ul style="list-style-type: none"> Zuni Pueblo Management Plan 	Transportation, Tribal Activities	56.6
San Juan	<ul style="list-style-type: none"> Navajo Nation Management Plan Southern Ute Tribe Management Plan 	Transportation, Tribal Activities, Oil and Gas Development	50.4
Verde	<ul style="list-style-type: none"> Yavapai-Apache Management Plan 	Tribal Activities	1.7
Middle Gila and San Pedro	<ul style="list-style-type: none"> San Carlos Apache Tribal Management Plan 	Tribal Activities	0.6
Upper Gila	<ul style="list-style-type: none"> San Carlos Apache Tribal Management Plan 	Tribal Activities	36.1
Upper Rio Grande	<ul style="list-style-type: none"> Sal Ildefonso Pueblo Management Plan Santa Clara Pueblo Partnership San Juan Pueblo (Ohkay Owingeh) Partnership 	Transportation, Tribal Activities	17
SUBTOTAL			179.4
Habitat Conservation Plans (HCPs)			
Santa Ana	<ul style="list-style-type: none"> Western Riverside County MSHCP 	Residential and Related Development, Transportation	33.8
San Diego	<ul style="list-style-type: none"> San Diego County MSHCP Western Riverside County MSHCP Orange County Southern Subregional HCP City of Carlsbad HMP 	Residential and Related Development, Transportation	33
Middle Colorado	<ul style="list-style-type: none"> Lower Colorado River MSHCP (including Hualapai Nation) 	Water Management, Tribal Activities, Grazing	46
Bill Williams	<ul style="list-style-type: none"> Lower Colorado River MSHCP 	Water Management, Transportation	5.6
Hoover to Parker Dam	<ul style="list-style-type: none"> Lower Colorado River MSHCP (including Fort Mojave and Chemehuevi Tribes) 	Water Management, Tribal Activities	67.4
Parker to Southerly Int'l Border	<ul style="list-style-type: none"> Lower Colorado River MSHCP (including Colorado River Indian Tribes and Quechan/Fort Yuma Indian Tribe) 	Water Management, Tribal Activities	132.4
Verde	<ul style="list-style-type: none"> Salt River Project Horseshoe and Bartlett Dams HCP 	Water Management, Grazing	6
Roosevelt	<ul style="list-style-type: none"> Salt River Project Roosevelt Lake HCP 	Water Management, Grazing	18
SUBTOTAL			342.2

MANAGEMENT UNIT	REASON FOR EXCLUSION	ACTIVITIES AFFECTED	STREAM MILES EXCLUDED
SHAs, Private Easements, and other Management Plans			
Santa Clara	• Newhall Land and Farming Conservation Easements	Residential and Related Development	2.7
Owens	• Los Angeles Department of Water and Power Management Plan	Water Management	79.8
Kern	• Sprague Ranch Management Plan • Hafenfeld Ranch Management Plan		2.7
Pahrnagat	• Key Pittman State Wildlife Area Management Plan • Overton State Wildlife Area Management Plan		4.4
Roosevelt	• Freeport McMoRan Pinal Creek Management Plan	Mining	3.6
Upper Gila	• U-Bar Ranch Management Plan • San Carlos Reservoir	Transportation	8.6
Hassayampa and Agua Fria	• Tres Rios Safe Harbor Agreement (SHA)		5.4
San Luis Valley	• San Luis Valley Plans and Partnerships (various)	Grazing, Transportation	114.7
Lower Rio Grande	• Elephant Butte Irrigation District Canalization and Conservation Project	Grazing, Transportation	46.1
SUBTOTAL			268
GRAND TOTAL			789.6
Source: 78 FR 344.			

ADJUSTMENTS TO THE ESTIMATES IN THE FINAL ECONOMIC ANALYSIS (FEA)

Water Management

The FEA estimated incremental impacts associated with three dams – Hansen Dam, Luna Lake, and Mojave Dam. Flycatcher habitat surrounding Luna Lake was excluded from the final designation. As a result, we have removed costs associated with section 7 consultation and implementation of conservation efforts for this dam. Our analysis also estimated costs associated with section 7 consultations for other water management activities, such as smaller dams and diversions, emergency projects, or experimental water releases. These costs are estimated based on the historical consultation rate per management unit. Exclusions in the Final Rule are not expected to substantially affect this rate. Therefore, we estimate approximately \$1.4 million in present value incremental impacts associated with water management activities at the low end, or \$9.5 million at the high end, assuming a seven percent discount rate (see Exhibit 2 for revised cost estimates).

Livestock Grazing

Of the 27 grazing allotments located in areas identified as having the potential for incremental impacts, only those within the Gila National Forest and Apache-Sitgreaves National Forest in the San Francisco management unit were affected by changes to the final designation. In particular, the area of overlap with critical habitat was reduced on nine grazing allotments. However, the installation of additional fencing or AUM

reductions were not estimated in the FEA for three of these allotments due to feedback from rangeland managers. Additionally, none of these nine allotments experienced AUM reductions in the low end scenario, in which grazing management changes allow ranchers to avoid AUM reductions on small portions of allotments.

All changes are due to reductions in the area of overlap with critical habitat, which is used to calculate potential AUM reductions in the high scenario, and reductions in the perimeter of this overlapping area in the remaining six allotments, which is used to calculate potential fencing costs. In addition, to revise the forecast section 7 consultation forecast, we multiply the historical consultation rate (calculated per stream mile) by the number of designated stream miles. After adjusting the grazing analysis and associated consultation forecast, we estimate present value incremental impacts of approximately \$1.76 million at the low end or \$3.04 million at the high end (assuming a seven percent discount rate).

Residential and Related Development

In the FEA, lost land value associated with land set asides and potential time delay impacts on the Little Tujunga Canyon in the Santa Clara management unit were the only projected incremental project modification costs associated with the Proposed Rule. The Final Rule excludes this stream segment as well as four additional stream segments where administrative costs were projected (three in California and one in Arizona). As a result, the number of affected development projects in critical habitat decreases from 37 to 25. The remaining projects may incur administrative costs of consultation. This analysis estimates the total economic impacts of the Final Rule to residential and related development across the study area over the 20-year period of analysis to be \$380,000 in administrative costs.

Tribal Activities

The FEA estimated approximately \$770,000 of incremental administrative impacts to Tribes over the next 20 years. In addition, potential impacts to other activities, as well as impacts to Tribal sovereignty, were discussed qualitatively. The Final Rule excluded all Tribal lands from the designation of critical habitat for the flycatcher. Therefore, this revised estimate does not forecast any incremental impacts associated with Tribal activities.

Transportation

The FEA estimated the cost of consultation and associated project modifications for transportation construction and maintenance projects in locations where roads cross proposed stream segments. The Final Rule excludes stream segments associated with 21 of the estimated 79 locations where roads cross proposed stream segments. All of these excluded crossings are in areas considered to be baseline areas (areas where flycatchers are otherwise managed for, absent the designation), resulting in a minor reduction in associated impacts resulting from the administrative effort of addressing adverse modification in consultation efforts. The economic impacts to transportation projects associated with the Final Rule are estimated to be \$5.4 million discounted at seven percent over the 20-year period of analysis.

Mining

In our analysis, we were not able to quantify impacts to mining operations due to a lack of information about the link between water withdrawals, such as those relied upon by mining operations, and the quality of flycatcher habitat. Potential impacts were discussed qualitatively. The one active mine site that may experience incremental impacts due to water withdrawals from a stream segment proposed as critical habitat is the Morenci Mine, which relies on water from the San Francisco River. This potential impact is not affected by changes to the final designation.

Oil and Gas Development

The FEA estimated potential impacts to oil and gas development in the San Juan management unit in Utah and Colorado. The potentially affected portions of the San Juan River were excluded from the Final Rule, excluding the five informal consultations associated with pipeline maintenance and seismic studies. The Los Pinos River in the Colorado portion of the management unit was not excluded. The remaining incremental impacts are \$4,200 in administrative costs, discounted at seven percent over the 20-year period of analysis.

Recreation

Our analysis does not forecast any incremental impacts associated with recreational activities. This conclusion is not affected by changes to the Final Rule.

Summary

Exhibits 2 and 3 present the estimated incremental impacts associated with the designation of critical habitat for the flycatcher occurring over the period of analysis, by activity and management unit, respectively. The present value total incremental impacts of the final critical habitat designation are approximately \$9.0 million at the low end or \$18 million at the high end (seven percent discount rate). Annualized, these impacts are \$770,000 at the low end, or \$1.5 million at the high end.

EXHIBIT 2. SUMMARY OF INCREMENTAL IMPACTS BY ACTIVITY (2010\$, PRESENT VALUE, SEVEN PERCENT DISCOUNT RATE)

ACTIVITY	PROPOSED DESIGNATION		FINAL DESIGNATION	
	LOW	HIGH	LOW	HIGH
Transportation	\$5,800,000	\$5,800,000	\$5,400,000	\$5,400,000
Water*	\$1,400,000	\$9,600,000	\$1,400,000	\$9,500,000
Grazing	\$2,200,000	\$3,500,000	\$1,800,000	\$3,000,000
Development	\$810,000	\$810,000	\$380,000	\$380,000
Tribal	\$770,000	\$770,000	\$0	\$0
Oil and Gas	\$11,000	\$11,000	\$4,200	\$4,200
Recreation	\$0	\$0	\$0	\$0
Total	\$11,000,000	\$20,000,000	\$9,000,000	\$18,000,000

* 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).
Note: Totals may not sum due to rounding.



EXHIBIT 3. SUMMARY OF INCREMENTAL IMPACTS BY MANAGEMENT UNIT (2010\$, PRESENT VALUE, SEVEN PERCENT DISCOUNT RATE)

ACTIVITY	PROPOSED DESIGNATION (2012 - 2031)		PROPOSED DESIGNATION (2032 - 2041)		FINAL DESIGNATION (2012 - 2031)		FINAL DESIGNATION (2032 - 2041)	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
Santa Ynez	\$16,000	\$16,000	\$0	\$0	\$12	\$12	\$0	\$0
Santa Clara	\$570,000	\$2,000,000	\$37,000	\$270,000	\$350,000	\$1,700,000	\$37,000	\$270,000
Santa Ana	\$480,000	\$480,000	\$9,700	\$9,700	\$250,000	\$250,000	\$9,700	\$9,700
San Diego	\$200,000	\$200,000	\$3,900	\$3,900	\$110,000	\$110,000	\$3,900	\$3,900
Owens	\$5,500	\$5,500	\$0	\$0	\$5,000	\$5,000	\$0	\$0
Kern	\$19,000	\$19,000	\$2,900	\$2,900	\$20,000	\$20,000	\$2,900	\$2,900
Mohave	\$1,200,000	\$7,200,000	\$130,000	\$1,100,000	\$1,200,000	\$7,200,000	\$130,000	\$1,100,000
Salton	\$16,000	\$16,000	\$0	\$0	\$0	\$0	\$0	\$0
Amargosa	\$77,000	\$77,000	\$0	\$0	\$95,000	\$95,000	\$0	\$0
Little Colorado	\$680,000	\$680,000	\$0	\$0	\$600,000	\$600,000	\$0	\$0
Virgin	\$260,000	\$260,000	\$0	\$0	\$230,000	\$230,000	\$0	\$0
Middle Colorado	\$36,000	\$36,000	\$2,900	\$2,900	\$18,000	\$18,000	\$2,900	\$2,900
Pahrnagat	\$37,000	\$37,000	\$0	\$0	\$35,000	\$35,000	\$0	\$0
Bill Williams	\$160,000	\$160,000	\$970	\$970	\$70,000	\$70,000	\$970	\$970
Hoover to Parker Dam	\$76,000	\$76,000	\$1,500	\$1,500	\$8,700	\$8,700	\$1,500	\$1,500
Parker Dam to S. Int'l Border	\$45,000	\$45,000	\$1,500	\$1,500	\$8,700	\$8,700	\$1,500	\$1,500
San Juan	\$190,000	\$190,000	\$0	\$0	\$78,000	\$78,000	\$0	\$0
Powell	\$770,000	\$960,000	\$0	\$0	\$780,000	\$970,000	\$0	\$0
Verde	\$210,000	\$210,000	\$970	\$970	\$150,000	\$150,000	\$970	\$970
Roosevelt	\$77,000	\$77,000	\$970	\$970	\$77,000	\$77,000	\$970	\$970
Middle Gila and San Pedro	\$120,000	\$120,000	\$970	\$970	\$81,000	\$81,000	\$970	\$970
Upper Gila	\$360,000	\$360,000	\$0	\$0	\$130,000	\$130,000	\$0	\$0
Santa Cruz	\$580,000	\$580,000	\$0	\$0	\$580,000	\$580,000	\$0	\$0
San Francisco	\$3,800,000	\$4,600,000	\$1,300	\$11,000	\$3,600,000	\$4,300,000	\$0	\$0
Hassayampa and Agua Fria	\$3,900	\$3,900	\$0	\$0	\$29	\$29	\$0	\$0
San Luis Valley	\$130,000	\$130,000	\$0	\$0	\$75,000	\$75,000	\$0	\$0
Upper Rio Grande	\$300,000	\$300,000	\$0	\$0	\$55,000	\$55,000	\$0	\$0
Middle Rio Grande	\$260,000	\$260,000	\$2,900	\$2,900	\$110,000	\$110,000	\$2,900	\$2,900
Lower Rio Grande	\$130,000	\$130,000	\$0	\$0	\$810	\$810	\$0	\$0
Total	\$11 million	\$19 million	\$200,000	\$1.4 million	\$8.8 million	\$17 million	\$190,000	\$1.4 million

Note: Totals may not sum due to rounding.