**IN THE UNITED STATES DISTRICT COURT**

**FOR THE DISTRICT OF ARIZONA**

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| CENTER FOR BIOLOGICAL DIVERSITY, et al.,<br><br>Plaintiffs,<br><br>vs.<br><br>KENNETH L. SALAZAR,* et al.,<br><br>Defendants. | No. CV 07-484-TUC-AWT<br><br>**MEMORANDUM ORDER** |

Pursuant to the Endangered Species Act ("ESA"), the United States Army and the United States Fish and Wildlife Service ("FWS") carried out formal consultation to address the impacts of the Army's proposed ongoing and future operations at Fort Huachuca from 2006-2016 on certain threatened and endangered species in the upper San Pedro River area of southeastern Arizona. Completing the consultation process, FWS issued a Biological Opinion ("BiOp") on June 14, 2007 concluding, *inter alia*, that the Army's operations would not jeopardize the Huachuca water umbel ("umbel") or the southwestern willow flycatcher ("flycatcher"), or adversely modify their critical habitats. Plaintiffs Center for Biological Diversity and Maricopa Audubon Society sue FWS, the

* Kenneth L. Salazar is substituted for his predecessor Dirk Kempthorne as Secretary of the Interior, pursuant to Fed. R. Civ. P. 25(d).

Army, and various federal officials (collectively the "Federal Defendants") for violation of the ESA. Specifically, Plaintiffs seek declaratory judgment that FWS' 2007 BiOp violates § 7 of the ESA, 16 U.S.C. § 1536(a)(2), and is arbitrary and capricious under the Administrative Procedure Act ("APA"), 5 U.S.C. § 706(2)(A).[1] Plaintiffs ask the Court to vacate the BiOp and order FWS to reinitiate and complete formal consultation with the Army with respect to the impacts of Fort Huachuca's proposed operations on the umbel and its critical habitat, and the flycatcher. Plaintiffs also seek declaratory judgment that the Army's reliance on the flawed BiOp violates its independent, substantive duty under § 7 and is arbitrary and capricious under the APA.[2] Plaintiffs seek summary judgment on their claims.[3] For the reasons that follow, the Court grants Plaintiffs' Motion.

## I. Background

### A. The Endangered Species Act

The U.S. Supreme Court has described the ESA as "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation," reflecting "a conscious decision by Congress to give endangered species priority over the 'primary missions' of federal agencies." *TVA v. Hill*, 437 U.S. 153, 180, 185 (1978). The purpose of the ESA is "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" and "to provide a program for the conservation of such endangered species and threatened species." 16 U.S.C. § 1531(b). Pursuant to the ESA, FWS lists species that are "endangered" and also

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[1] This claim is brought pursuant to the APA. 5 U.S.C. § 706(2)(A). BiOps are "final agency action" subject to review under the APA. *See* 5 U.S.C. § 704; *Bennett v. Spear*, 520 U.S. 154, 177-78 (1997).

[2] This claim is brought pursuant to the ESA citizen-suit provision, 16 U.S.C. § 1540(g)(1)(A).

[3] At the scheduling conference held in this matter, Plaintiffs stipulated that should their motion be denied, judgment will be entered for Defendants on the claims at issue. Because of this, Defendants' Response to Plaintiffs' Motion for Summary Judgment is, in effect, both a response and a cross-motion for summary judgment.

designates their "critical habitats." 16 U.S.C. § 1533. A species is endangered if it "is in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. § 1532(6). A species' critical habitat includes those areas "essential to the conservation of the species." 16 U.S.C. § 1532(5).[4]

Section 7(a)(2) of the ESA ("§ 7") requires that each federal agency (the "action agency") must "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of the designated critical habitat of the listed species. 16 U.S.C. § 1536(a)(2). To assist action agencies in complying with this provision, § 7 and its implementing regulations set out a detailed consultation process for determining the impacts of the proposed agency action. *Id.*; 50 C.F.R. § 402. If an agency determines that its proposed action "may affect" listed species or critical habitat, it must formally consult with the "consulting agency".[5] 50 C.F.R. § 402.14(a). Formal consultation begins with the preparation of a biological assessment by the action agency evaluating (1) the potential effects of the action on listed species and designated critical habitat and (2) whether any such species or habitat are likely to be adversely affected. 16 U.S.C. § 1536(c); 50 C.F.R. § 402.12(a). Formal consultation is completed by the issuance of a BiOp by the consulting agency assessing whether the proposed action is "likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of critical habitat" (a "jeopardy" BiOp) or not (a "no jeopardy" BiOp). 50 C.F.R. § 402.14(h)(3), (l)(1). The BiOp must include "a summary of the information on which the opinion is based" and "a detailed discussion of the effects of the action on listed species or critical habitat." 50 C.F.R. § 402.14(h)(1),

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[4] "Conservation" is defined as "the use of all methods and procedures which are necessary to bring any endangered species . . . to the point at which the measures provided pursuant to [the ESA] are no longer necessary." 16 U.S.C. § 1532(3).

[5] There are two consulting agencies: FWS for freshwater or land-based species and National Marine Fisheries Service ("NMFS") for marine species.

(2). Both the action agency and the consulting agency must use the "best scientific and commercial data available" during the consultation process and in drafting the BiOp. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(d), (g)(8).

In addition to the procedural requirements of § 7 (*i.e.* the consultation and BiOp process), an action agency has an independent and continuing duty to avoid taking action that would jeopardize the continued existence of a listed species or adversely modify the critical habitat of such a species. 16 U.S.C. 1536(a)(2); *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of the Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990) (an action agency "may not rely solely on a FWS [BiOp] to establish conclusively its compliance with its *substantive* obligations under section7(a)(2)"). An action agency cannot abrogate its duty to ensure that its actions comply with § 7; it has an independent duty to ensure that its reliance on a BiOp is not arbitrary or capricious. *Id*.

**B. Section 321 of the Defense Authorization Act of 2004**

Section 321 of the Defense Authorization Act of 2004 ("§ 321"), Pub. L. No. 108-136, 117 Stat. 1392, 1437, amends § 7 of the ESA as applied to Fort Huachuca and describes the manner in which § 7 is to be applied during interagency consultation:

> (a) LIMITATION ON FEDERAL RESPONSIBILITY FOR CIVILIAN WATER CONSUMPTION IMPACTS.
>
> (1) LIMITATION.--For purposes of section 7 of the [ESA], concerning any present and future Federal agency action at Fort Huachuca, Arizona, water consumption by State, local, and private entities off of the installation that is not a direct or indirect effect of the agency action or an effect of other activities that are interrelated or interdependent with that agency action, shall not be considered in determining whether such agency action is likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat.

§ 321(a)(1), 117 Stat. 1392, 1437. In addition to narrowing the application of § 7 to water consumption directly or indirectly associated with the Fort and its induced population, and excluding consideration of all water consumption by any other source, § 321 also recognizes the Upper San Pedro Partnership ("USPP") and its efforts to "establish a collaborative water use management program in the Sierra Vista Subwatershed, Arizona, to achieve the sustainable yield of the regional aquifer." § 321(b), 117 Stat. 1392, 1437. The USPP is a consortium of 21 local,

state, and federal agencies and private organizations with a goal of protecting the Upper San Pedro River and the San Pedro Riparian National Conservation Area ("SPRNCA"). *Id.* Section 321 directs the Secretary of the Interior, in cooperation with and on behalf of the USPP, to submit a series of reports to Congress documenting the USPP's progress and "the water use management and conservation measures that have been implemented and are needed to restore and maintain the sustainable yield of the regional aquifer by and after September 30, 2011." § 321(c)(1), (d), 117 Stat. 1392, 1438-39.

**C. The San Pedro River, Huachuca Water Umbel, and Southwestern Willow Flycatcher**

The San Pedro River flows north from Mexico through southeastern Arizona and is the only remaining free-flowing undammed river in the desert Southwest. Plaintiffs describe the river and its surrounding riparian habitat as "an extraordinary biological treasure chest, housing an astonishing number of mammals and reptiles, upland grasses, and native trees and shrubs" and "one of the richest areas of biodiversity and most important corridors for migrating songbirds in the United States." *Id.* In 1988, Congress created the San Pedro Riparian National Conservation Area to "protect the riparian area and the aquatic, wildlife, archeological, paleontological, scientific, cultural, education, and recreational resources of the public lands surrounding the San Pedro River in Cochise County, Arizona." 16 U.S.C. § 460xx(a).

Among the many species found in the San Pedro River and surrounding habitat are two endangered species: the Huachuca Water Umbel and the Southwestern Willow Flycatcher. The umbel, listed as an endangered species by FWS in 1997, is an "herbaceous, semiaquatic perennial plant with slender, erect leaves that grow from creeping rhizomes." 62 Fed. Reg. 665, 666 (Jan. 6, 1997). In 1999, FWS designated critical habitat for the umbel: a total of 51.7 miles of streams or rivers in Cochise and Santa Cruz Counties, Arizona, including 33.7 miles of the San Pedro River within the SPRNCA and 3.8 miles in Garden Canyon within the Fort's boundaries. 64 Fed. Reg. 37441 (July 12, 1999); 50 C.F.R. § 17.96. FWS determined that these areas contained the primary constituent elements critical to the umbel:

(1) Sufficient perennial base flows to provide a permanently or nearly

> permanently wetted substrate for growth and reproduction of [the umbel];
> (2) A stream channel that is relatively stable, but subject to periodic flooding that provides for rejuvenation of the riparian plant community and produces open microsites for [umbel] expansion;
> (3) A riparian plant community that is relatively stable over time and in which nonnative species do not exist or are at a density that has little or no adverse effect on resources available for [umbel] growth and reproduction; and
> (4) In streams and rivers, refugial sites in each watershed and in each reach, including but not limited to springs or backwaters of mainstem rivers, that allow each population to survive catastrophic floods and recolonize larger areas.

50 C.F.R. § 17.96.

The flycatcher, listed as an endangered species by FWS in 1995, is a small, neotropical migratory songbird which occurs in riparian habitats along rivers, streams, or other wetlands where dense growths of willow, cottonwood, buttonbush, and tamarisk trees are present. 60 Fed. Reg. 10694 (Feb. 27, 1995). In 2005, FWS made its latest designation of critical habitat for the flycatcher: the lower reaches of the San Pedro River.[6] 70 Fed. Reg. 60886 (Oct. 19, 2005); 2007 BiOp 87, 130, AR 6043, 6086.[7]

**D. Impacts of Fort Huachuca Operations and Groundwater Pumping**

Established in 1877, Fort Huachuca is a major military installation of approximately 73,142 acres in southeastern Arizona. It is located adjacent to the city of Sierra Vista and near Huachuca City in the foothills of the Huachuca Mountains, about 15 miles north of the international border with Mexico. The Fort's major missions presently include testing of intelligence and communications systems and training of soldiers on intelligence tactics and unmanned aerial systems.

The effects of Fort Huachuca's ongoing and proposed future military operations and activities on umbel and flycatcher populations, and their critical habitats, can be separated into

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[6] FWS notes that while the critical habitat is limited to the lower reaches of the River and the number of flycatcher on the upper San Pedro River is "appreciably less[]" than on the lower San Pedro River, the upper San Pedro River continues to serve as a migration corridor for the flycatcher. 2007 BiOp 93, AR 6049. In addition, because the upper and lower reaches of the River are hydrologically connected, "[d]iminishment of discharges in the upper San Pedro River could affect discharge in the lower reaches." *Id.* at 130, AR 6086.

[7] "AR" refers to the administrative record filed by FWS in this case.

two broad categories: (1) direct and indirect effects to populations occurring on and critical habitat designated within the Fort's boundaries; and (2) indirect effects (including the effects of interdependent and interrelated actions) to populations and critical habitat on the San Pedro River within the SPRNCA. 2007 BiOp 112, 129, AR 6068, 6085. Umbel populations and critical habitat within the Fort's boundaries are affected directly and indirectly by actions that disturb land and vegetation (*e.g.* recreational activities, vehicle use, maintenance of roads, military testing and training, and fire). *Id.* at 112-13, AR 6068-69. Flycatcher are not presently known to occur within the Fort's boundaries and thus there are no direct or indirect effects to populations or critical habitat within the Fort's boundaries. *Id.* at 129, AR 6085.

Umbel and flycatcher populations and critical habitat along the San Pedro River within the SPRNCA are affected indirectly by the Fort's pumping of groundwater from the regional aquifer–the Sierra Vista Subwatershed–and capture of San Pedro River discharge (*i.e.* groundwater that would have otherwise flowed to the river). *Id.* at 112, 114, 129, AR 6068, 6070, 6085. Groundwater is "stored" in an aquifer. *Id.* at 114, AR 6070. The stored water may be discharging to a spring or waterway. *Id.* Discharge may also occur through evapotranspiration by plants. *Id.* Under natural conditions (*i.e.* no groundwater pumping), infiltration of rainfall and runoff maintains the equilibrium between storage water in the aquifer and discharge. *Id.* Groundwater pumping initially removes water from storage in the aquifer. However, as pumping continues, increasing proportions of water are derived from the capture of water destined to discharge to a stream or be available to sustain riparian vegetation. *Id.* If water withdrawal continues unmitigated, it will eventually deplete storage water in the aquifer, derive more and more water from discharge, reverse the flow direction of groundwater, and capture (or dewater) the stream itself. *Id.* Such a change in the base flows (or flows that run year-round and are not dependent on precipitation) of the San Pedro River could eventually cause perennial reaches to become intermittent or ephemeral. *Id.* As FWS writes in the 2007 BiOp, "Such a change in the hydrologic regime of the San Pedro River, depending upon the reach in which it occurred, could result in losses of numerous Huachuca water umbel population sites." *Id.* Likewise, FWS notes the potentially negative effect that an aquifer groundwater

deficit and decreased base flows would have on the variation, number, and health of dense, age-diverse cottonwood-willow stands, which serve as a proxy for all habitat types upon which flycatcher rely and which support flycatcher breeding. *Id*. at 129, 131, AR 6085, 6087.

According to a 2005 U.S. Geological Survey ("USGS") Scientific Investigations Report, there is currently a groundwater deficit in the Sierra Vista Subwatershed (*i.e.* water outflow from the subwatershed exceeds natural inflow to the regional aquifer). James M. Leenhouts et al., U.S. Geological Survey, *Hydrologic Requirements of and Consumptive Ground-Water Use by Riparian Vegetation along the San Pedro River, Arizona*, SCIENTIFIC INVESTIGATIONS REPORT 2005-5163, at 1, AR 14429. Groundwater storage is being depleted and "[t]he continued decline of ground-water levels upgradient from perennial river reaches will eventually diminish the base flow of the San Pedro River and imperil the riparian vegetation within the SPRNCA." *Id*. According to FWS, the groundwater deficit has grown from an estimated 5,144 acre-feet ("AF") in 2002 to 6,625 AF in 2007.[8] 2002 FWS BiOp 45, AR 21661; 2007 BiOp 123, AR 6079.

In its 2007 BiOp, FWS identifies the greatest threat to umbel habitat as "continued ground water pumping in excess of recharge, which has the potential to lower ground water elevation under portions of the river, eliminate base flows, and result in desiccation of the riparian and wetland vegetation communities." 2007 BiOp 84, AR 6040. Lending credence to this threat, FWS notes that umbel populations within the SPRNCA dropped from 43 populations in 1995, to 30 populations in 2004. *Id.* at 82, AR 6038. This Court has at least twice considered the impact of growth related to Fort Huachuca on the San Pedro River; first under the National Environmental Policy Act ("NEPA") in 1995, and again under the ESA in 2002. *See Sw. Ctr. for Biological Diversity v. Perry*, No. Civ. 94-598-TUC-ACM (D. Ariz. 1995), Mem. Op. (Doc. 33); *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139 (D. Ariz. 2002). In *Perry*, this Court noted that "[i]t is hard to imagine anything more obvious then the impact of Sierra Vista's continued growth on the nearby San Pedro River and the federally protected and managed

[8] An acre-foot of water is the volume of water sufficient to cover one acre of land to a depth of one foot.

Riparian Area and species there." *Perry*, No. Civ. 94-598-TUC-ACM, Mem. Op. at 21. The Court further noted the seriousness of the situation by concluding that "[c]reeping development and unrestrained draining of the aquifer represents a real threat to the Riparian Area" and that "[t]he Army must not turn a blind eye to this problem or to the fact that its action may tend to exacerbate it. *Id*. at 21-22.

**E. Prior Litigation**

Plaintiffs have brought three prior lawsuits against the Army regarding Fort Huachuca's compliance with environmental laws. In 1995 this Court dismissed as time-barred Plaintiffs' NEPA challenge to the Army's expansion of Fort Huachuca resulting from a base realignment action. *Perry*, No. Civ. 94-598-TUC-ACM, Mem. Op. In 1999, after formal ESA § 7 consultation with the Army, FWS issued a BiOp concluding that the Army's continued operations at the Fort would not jeopardize the umbel or the flycatcher, and would not adversely modify their critical habitats on the San Pedro River. Plaintiffs challenged the 1999 BiOp and the Army's compliance with § 7, and this Court found FWS's "no jeopardy" BiOp to be arbitrary, capricious, and contrary to law. *Rumsfeld*, 198 F. Supp. 2d at 1157. The Court rejected the 1999 BiOp primarily because it relied on uncertain mitigation measures, some of which had not yet been developed. *Id*. at 1154-57. As a result, the Army and FWS reinitiated consultation and issued a new BiOp in 2002. The 2002 BiOp again concluded that the Army's ongoing operations at Fort Huachuca would not jeopardize the umbel or flycatcher, and would not adversely affect their critical habitats. In 2005, Plaintiffs challenged, among other things, the failure of the Army and FWS to reinitiate consultation to address changes in the conditions upon which the 2002 BiOp was based.[9] *See Ctr. for Biological Diversity v. U.S. Dep't of Hous. and*

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[9] Plaintiffs also brought claims against the U.S. Department of Housing and Urban Development, the U.S. Small Business Administration, and the U.S. Department of Veterans Affairs to force them "to disclose the full extent of the damage caused by their lending, loan guarantee, and underwriting programs in the Fort Huachuca area" and "to protect the San Pedro River" by requiring those agencies to examine their actions under the NEPA and the ESA. Defs.' Resp. 8 (quoting Center for Biological Diversity April 5, 2005 News Release, http://www.biologicaldiversity.org/news/press_releases/sanpedro4-5-05.html). The Ninth Circuit upheld this Court's dismissal of those claims on the merits. *Ctr. for Biological Diversity*

*Urban Dev.*, No. Civ. 05-261-TUC-CKJ (D. Ariz. May 31, 2005). In March 2006, the Army and FWS agreed to reinitiate consultation and the parties settled the lawsuit. *See id.*, Stipulated Settlement Agreement for the Seventh Claim for Relief (Docs. 44, 49). In 2006, the Army decided to reinitiate consultation with FWS for the Fort's ongoing and proposed activities for the next ten year period, from 2006 to 2016. As part of the request for new consultation, the Army submitted a "Programmatic Biological Assessment for Ongoing and Future Military Activities at Fort Huachuca, Arizona" to FWS in December 2006. After FWS requested further information, the Army submitted a revised Programmatic Biological Assessment ("PBA") in February 2007. PBA, AR 1909. As Defendants' summarize, "[t]he PBA provides extensive discussion of the ongoing and future operations and activities at the Fort, the present condition of the natural resources and listed species at issue, an analysis of the potential effects of the Fort's operations on 26 listed, proposed or candidate species, and a review of the conservation measures the Army proposed to mitigate the Fort's adverse impacts on the affected species." Defs.' Resp. 9.

**F. FWS's 2007 BiOp**

The 2007 BiOp concludes that the Fort's operations from 2006 through 2016 will not jeopardize the umbel or flycatcher, or adversely modify their critical habitats. *Id.* at 127, 132, AR 6083, 6088. In reaching that conclusion, FWS addresses the following in its BiOp: (1) the proposed action at Fort Huachuca, including the Army's proposed conservation ("mitigation") measures and the various projects and initiatives of the USPP; (2) the status[10] of each species and the environmental baseline[11] for each species; and (3) the effects of the proposed action on each endangered species with a separate conclusion as to whether the Fort's proposed activities will

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*v. U.S. Dep't of Hous. and Urban Dev.*, 359 F. App'x 781 (9th Cir. 2009).

[10] The "status of a species" contains information on the respective species' taxonomy, critical habitat designations, recovery planning, and consultation history. 2007 BiOp 78, 6034.

[11] The "environmental baseline" includes: (1) a description of past and present impacts of all federal, state, or private actions in the action area; (2) the anticipated impacts of all proposed federal action in the action area that have undergone formal or early § 7 consultation; and (3) the impact of state and private actions which are contemporaneous with the consultation process. 2007 BiOp 78, 6034.

jeopardize the species or adversely modify its critical habitat.[12]

As to the BiOp's "no jeopardy" conclusion for the umbel, FWS relies primarily on the following findings, as summarized by Defendants in their Response:

> (1) the umbel is stable within its range, both within the Fort and on the San Pedro River; (2) the Fort will affect the umbel on the San Pedro RNCA through small reductions in the baseflow of the river, but that these impacts are not predictable given the significant factors otherwise affecting surface flows and baseflows in the river; (3) the species would be able to recolonize those areas affected by near zero flows in the river in subsequent years with normal or above normal precipitation; (4) the effects attributable to the Fort would be 'small in magnitude, largely minimized, and will not affect Huachuca water umbel recovery.'

Defs.' Resp. 11 (quoting 2007 BiOp 127, AR 6083). The BiOp concludes that, based on 2005 figures and rates, the Fort's net effect to base flow due to groundwater pumping could result in a 0.3 cubic feet per second ("CFS") base flow reduction in the San Pedro River. 2007 BiOp 115, 120, AR 6071, 6076. It further concludes that the magnitude of this impact is anticipated to be reduced to a 0.04 CFS reduction in base flow through water conservation measures implemented by 2016. *Id.* at 120, AR 6076. Importantly, the BiOp notes that the residual groundwater deficits and eventual reduction in base flow predicted from groundwater demand in 2016 are not immediate effects, but rather indicative of eventual adverse effects at some point in the future beyond 2016. *Id.* In addition, the BiOp highlights the fact that the estimated magnitude of the impacts represents a "worst-case scenario," as its analysis did not take into consideration base flow contributions from rainfall and overbank flood events, assuming instead that all base flow is derived form the discharge of groundwater from the regional aquifer. *Id.* Finally, the BiOp concludes that the maximum potential reduction in base flow attributable to the Fort would be "small in magnitude," a small percentage of the average annual base flow in the San Pedro River, "well within the range of natural variation," and within the measurement error of the

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[12] FWS' discussion of the effects of the proposed action also analyzes the cumulative effects (*i.e.* the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area) on each species pursuant to 50 C.F.R. § 402.14. However, pursuant to § 321, the BiOp's conclusions regarding jeopardy do not take these cumulative effects into consideration.

stream gauges on the River.[13] *Id.*

As to the BiOp's "no jeopardy" conclusion for the flycatcher, FWS relies on the same assessment of the Fort's indirect impact on the base flows in the San Pedro River. *Id.* at 129, AR 6085. The BiOp concludes that the maximum potential reduction in base flow indirectly caused by groundwater pumping by the Fort and its induced population would be "minimal" and is not anticipated to change the extent or recruitment of riparian vegetation utilized by flycatcher within the subwatershed. *Id.* The BiOp acknowledges that flycatcher critical habitat in the lower San Pedro River could be affected by reduced base flow in the Sierra Vista Subwatershed. *Id.* at 130, AR 6086. However, since the lower San Pedro River is located in a different subwatershed (the Winkelman Subwatershed), the BiOp concludes that the proposed action and accompanying reductions in base flows will have "minimal to no effect on southwestern willow flycatcher critical habitat on the lower San Pedro River." *Id.*

## II. Standard of Review of Administrative Action

Summary judgment is appropriate if "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). Procedurally, summary judgment is appropriate for resolving a challenge to a federal agency's administrative decision when review is based primarily upon an administrative record. *Ecology Ctr., Inc. v. Austin*, 430 F.3d 1057, 1062 (9th Cir. 2005), *overruled on other grounds by The Lands Council v. McNair*, 537 F.3d 981 (9th Cir. 2008) (en banc). When review is based upon an administrative record, there are no material facts in dispute and the Court does not perform any fact finding.[14] *Occidental Eng'g Co. v. INS*, 753 F.2d 766, 769-70 (9th Cir. 1985). Thus the court does not use the standard summary judgment analysis for determining whether a genuine

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[13] The USGS maintains three streamflow measuring stations on the San Pedro River: the Palominas Gauge, the Charleston Gauge, and the Tombstone Gauge. 2007 BiOp 84, AR 6040.

[14] In this case the facts are undisputed and contained in the administrative record filed by the federal Defendants: the U.S. Fish and Wildlife Service's administrative record ("AR") and the U.S. Army's administrative record ("Army AR").

issue of material fact exists. *Id.* Rather the court uses summary judgment as a mechanism for deciding whether, as a matter of law, "the evidence in the administrative record permitted the agency to make the decision it did." *Id.*

Plaintiffs' various claims regarding the sufficiency of the 2007 BiOp challenge final agency action subject to "arbitrary and capricious" review under the APA, 5 U.S.C. § 706(2)(A). *Bennett*, 520 U.S. at 177-78; *W. Watersheds Project v. Matejko*, 468 F.3d 1099, 1107 (9th Cir. 2006). Under the APA, a reviewing court "shall hold unlawful and set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Judicial review under the arbitrary and capricious standard is deferential and a court "will not vacate an agency's decision unless it 'has relied on factors which Congress had not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.'" *Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 658 (2007) (quoting *Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). Review under the APA is "searching and careful," but the standard is narrow; the court cannot substitute its own judgment for that of the agency. *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 858-59 (9th Cir. 2005) (quoting *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971)). "Deference to an agency's technical expertise and experience is particularly warranted with respect to questions involving . . . scientific matters." *United States v. Alpine Land & Reservoir Co.*, 887 F.2d 207, 213 (9th Cir. 1989). The court must evaluate "whether the [agency's] decision was based on a consideration of the relevant factors," "whether there has been a clear error of judgment," and "whether the [agency] articulated a rational connection between the facts found and the choice made." *Ocean Advocates*, 402 F.3d at 859 (quoting *Citizens to Preserve Overton Park*, 401 U.S. at 416; *Ariz. Cattle Growers' Ass'n v. U.S. Fish & Wildlife*, 273 F.3d 1229, 1236 (9th Cir. 2001)); *Pac. Coast Fed'n of Fishermen's Ass'ns v. U.S. Bureau of Reclamation*, 426 F.3d 1082, 1091 (9th Cir. 2005). The court may not attempt to make up for any deficiencies in the

agency's decision by "supply[ing] a reasoned basis for the agency's action that the agency itself has not given." *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43 (quoting *SEC v. Chenery Corp.*, 332 U.S. 194, 196 (1947)). The agency's action must be upheld, if at all, on the rationale employed by the agency. *Id.* at 50.

## III. Analysis

### A. The 2007 BiOp violates the ESA and is Arbitrary and Capricious

Plaintiffs contend that the 2007 BiOp violates the ESA and is arbitrary and capricious in its no jeopardy and no adverse modification conclusions. First, Plaintiffs contend that the BiOp unlawfully fails to analyze the effects of Fort Huachuca's operations and activities on the recovery of the umbel, the flycatcher, and the umbel's critical habitat. Second, Plaintiffs argue that the BiOp unlawfully relies on conservation mitigation measures that are not reasonably specific nor reasonably certain to occur. And third, Plaintiffs contend that, in some instances, the BiOp's conclusions are not supported by the record or the best available science. The Court agrees with these ultimate conclusions, although the Court rejects some of Plaintiffs' underlying arguments.

#### 1. Failure to Evaluate Impacts on Recovery

Plaintiffs contend that the 2007 BiOp excludes from its jeopardy and adverse modification analyses consideration of whether the ongoing and proposed operations at Fort Huachuca appreciably reduce the likelihood of recovery of the umbel and flycatcher. Because of this, Plaintiffs further contend that the BiOp's conclusion that the effects of the proposed action will not affect umbel or flycatcher recovery is baseless and insufficient. Plaintiffs also contend that the BiOp's conclusion is contradicted by record evidence and has no rational connection to the evidence.

Both Plaintiffs and Defendants acknowledge the implicit requirement of the ESA and its implementing regulations of analyzing whether an action may jeopardize a species or adversely modify its critical habitat by appreciably reducing the species' prospects of recovery, as well as

survival.[15] The ESA defines a species' critical habitat as those areas "essential to the conservation of the species." 16 U.S.C. § 1532(5). The ESA defines "conservation," as "the use of all methods and procedures which are necessary to bring any endangered species . . . to the point at which the measures provided pursuant to [the ESA] are no longer necessary." 16 U.S.C. § 1532(3). Reading these definitions together, "it is clear that Congress intended that conservation and survival be two different (though complementary) goals of the ESA." *Gifford Pinchot*, 378 F.3d at 1070.

Furthermore, according to the ESA's implementing regulations, "[j]eopardize the continued existence of means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species . . . by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02. Similarly, "[d]estruction or adverse modification means a direct or indirect alteration that appreciably diminished the value of critical habitat for both the survival and recovery of a listed species." *Id.* In addition, the Endangered Species Consultation Handbook – jointly published by FWS and the NMFS in 1998 to govern procedures for ESA § 7 consultations – confirms that the final jeopardy analysis looks at "whether, given the aggregate effects, the species can be expected to both survive and recover." FWS & NMFS, *Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act*, at 4-37 (March 1998). The Consultation Handbook defines survival, in part, to include recovery:

> Recovery: . . . the process by which species' ecosystems are restored and/or threats to the species are removed so self-sustaining and self-regulating populations of listed species can be supported as persistent members of native biotic communities.
>
> Survival: the species' persistence . . . beyond the conditions leading to its endangerment, with sufficient resilience to allow recovery from endangerment.

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[15] In this respect, the 2007 BiOp's express intent is to analyze the effects on recovery in accordance with the Ninth Circuit's decision in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Serv.*, 378 F.3d 1059 (9th Cir. 2004), which interpreted the regulatory definition of adverse modification to require FWS to consider an action's impacts on recovery as a separate and independent analysis as that on survival.

> Said another way, survival is the condition in which a species continues to exist into the future while retaining the potential for recovery.

*Id.* at 4-36, 4-37.

The ESA, its implementing regulations, FWS' Consultation Handbook, and the Ninth Circuit's decision in *Gifford Pinchot* all require that listed species be protected from any appreciable reduction in their likelihood of recovery.[16] This does not mean that a jeopardy or adverse modification analysis must include the formulation of a specific recovery plan. As Defendants point out, recovery planning is a different process and has different requirements than consultation. *See* 16 U.S.C. § 1533(f) (recovery plan must include, *inter alia*, "objective, measurable criteria which, when met, would result in a determination . . . that the species be removed from the list"). Indeed, in *National Wildlife Federation*, the Ninth Circuit was careful not to "improperly import ESA's separate recovery planning provisions into the section 7 consultation process." 524 F.3d at 936. However, the court also held that "[i]t is only logical to require that the agency know roughly at what point survival and recovery will be placed at risk before it may conclude that no harm will result" and "[r]equiring some attention to recovery issues . . . provides some reasonable assurance that the agency action in question will not appreciably reduce the odds of success for future recovery planning, by tipping a listed species too far into danger." *Id.* (finding that the district court correctly held that the consulting agency inappropriately evaluated recovery impacts on an endangered salmon species without knowing the in-river survival levels necessary to support recovery). More recently, in *Wild Fish Conservancy v. Salazar*, 628 F.3d 513 (9th Cir. 20100, the Ninth Circuit held that FWS must identify when a species will likely pass the tipping point for recovery, and determine whether the proposed action will cause the species to reach that tipping point:

> Moreover, even before a population is extinguished, it may reach a point at which it is no longer recoverable: "a species can often cling to survival even when recovery is far out of reach." The Service has not determined when the tipping point precluding recovery . . . is likely to be reached, nor necessarily, whether it

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[16] The reasoning in *Gifford Pinchot* concerning evaluation of recovery in adverse modification analyses also applies to jeopardy analyses. *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917 (9th Cir. 2008).

will be reached as a result of the [agency operations].

*Id.* at 527 (quoting *Nat'l Wildlife Fed'n*, 524 F.3d at 931).

Here, the BiOp's jeopardy and adverse modification analyses for both the umbel and flycatcher violate the ESA because they fail adequately to address whether the proposed action appreciably reduces the likelihood of recovery. The BiOp does not evaluate how groundwater pumping connected to the Fort and its induced population (and the reduced base flows associated with the pumping) will affect the prospects for recovery of the umbel, flycatcher, and their designated critical habitats. Although the BiOp *concludes* that the proposed action "will not affect Huachuca water umbel recovery" and "will not affect the ability to recover the southwestern willow flycatcher," 2007 BiOp 127, 132, AR 6083, 6088, a full *analysis* of the effect of the proposed action on recovery is absent.[17] The court may not "imply[] an analysis that is not shown in the record." *Gifford Pinchot*, 378 F.3d at 1074; *Nat'l Wildlife Fed'n*, 524 F.3d at 932, n.10. Likewise, the court may not consider a post hoc justification that the consulting agency implicitly analyzed recovery in its survival analysis. *Id.* Recovery must be considered explicitly and separately from survival.

Here, the BiOp almost exclusively focuses on the extent to which the effect of the proposed action (*i.e.* groundwater pumping resulting in reduced base flow) will reduce the

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[17] Numerous courts have rejected BiOps for failure to evaluate an action's impact on recovery. *See, e.g., Wild Fish Conservancy*, 628 F.3d at 527 (finding FWS' jeopardy analysis inadequate in part because it did not identify recovery "tipping point" and whether that tipping point would be reached as a result of agency operations); *Nat'l Wildlife Fed'n*, 524 F.3d at 936 (finding NMFS' jeopardy analysis contrary to law because it did not address the prospects for recovery of the listed species and NMFS did not know the in-river survival levels necessary to support recovery); *S. Yuba River Citizens League v. Nat'l Marine Fisheries Serv.*, 723 F. Supp. 2d 1247, 1266-67, 1275 (E.D. Cal. 2010) (finding NMFS' jeopardy analysis inadequate in part because it did not "discuss (through some method) the magnitude of the stressors' impact, the populations' ability to tolerate this impact, and the reason why any decline will not reduce the overall likelihood of survival or *recovery*" (emphasis added)); *Pac. Coast Fed'n of Fishermen's Ass'ns v. Gutierrez*, 606 F. Supp. 2d 1122, 1171 (E.D. Cal. 2008) (finding recovery analysis inadequate because "NMFS conclusory [sic] mentions but does not analyze the effects of Project actions on the recovery of the spring-run Chinook species"); *Natural Res. Def. Council v. Rodgers*, 381 F. Supp. 2d 1212, 1233-34 (E.D. Cal. 2005) (finding recovery analysis inadequate because it discussed recovery only in a general way and failed to analyze how the action would actually impact the species' critical habitat).

reproduction, numbers, and distribution of the umbel and flycatcher and cause destruction or dessication to their respective habitats. Nothing in the BiOp discusses or suggests what level of base flow would be sufficient for recovery of the species and their critical habitats. There is currently no Recovery Plan for the umbel. Defendants are correct in asserting that the ESA's requirement for FWS to use the "best scientific and commercial data available" does not require the agency to undertake or conduct new studies, effectively forcing it to prepare a *de facto* Recovery Plan during the consultation process. However, as the Ninth Circuit wrote in *National Wildlife Federation*, an agency must "know roughly at what point survival and recovery will be placed at risk before it may conclude that no harm will result from 'significant' impairments to habitat that is already severely degraded." *Id.* at 936. Even ignoring the fact that the BiOp does not discuss roughly at what point recovery would be placed at risk in terms of base flow, its so-called "qualitative" analysis of the impacts of the proposed action in terms of the qualitative habitat elements FWS had previously found essential to the umbel's recovery (*inter alia*, that there be "[s]ufficient perennial base flows to provide a permanently or nearly permanently wetted substrate for growth and reproduction," 50 C.F.R. § 17.96) cannot pass as a recovery analysis.

The passages in the BiOp that Defendants cite to show that FWS evaluated the impacts of the proposed action on umbel recovery merely catalog the significant threats to the umbel. They do not address the umbel's chances of recovery in light of those threats. Instead, the BiOp's jeopardy and adverse modification analyses focus on the effects of reduced base flow on survival in terms of reductions in population size or geographic extent of the listed species or the further destruction or dessication of their critical habitats along the San Pedro River. The BiOp analyzes and compares the effects of the proposed action on the status quo or "environmental baseline" (*i.e.* whether the species can continue to exist into the future), but does not analyze the effects on the improvement in the status of the species to the point at which it is no longer endangered. Because FWS did not analyze the impacts of the Fort's ongoing operations on recovery of the umbel and flycatcher and their critical habitats, the BiOp's conclusions are baseless and insufficient, and unlawful under the ESA.

In addition, even if FWS' conclusions regarding recovery could be considered a sufficient recovery analysis, they are arbitrary as they are unsupported and contrary to the record and findings in the BiOp. The BiOp's conclusion that the Fort's impacts "are small in magnitude, largely minimized, and will not affect Huachuca water umbel recovery" appears to be contradicted by other passages in the BiOp that indicate that the Fort's proposed action, when added to the underlying baseline conditions, might tip the species into jeopardy, or further deepen the jeopardy by causing additional harm where baseline conditions already jeopardize the species. For instance, Plaintiffs cite several passages in the BiOp that state that the Fort's groundwater pumping could cause certain reaches of the San Pedro River to go dry during certain times of the year, possibly extirpating umbel populations. In addition, as discussed previously, the BiOp and evidence cited in the record indicate that the groundwater deficit in the Sierra Vista Subwatershed is increasing. According to the BiOp, based on 2005 figures and rates, the Fort's net effect to base flow due to groundwater pumping is estimated to be a 0.3 CFS base flow reduction in the San Pedro River, reduced to a 0.04 CFS reduction in base flow through water conservation measures implemented by 2016 . 2007 BiOp 115, 120, AR 6071, 6076. Discussing the Fort's proposed mitigation measures, the BiOp states that although efforts to reduce net ground water consumption in the cones of depressions of pumping wells and in areas below recharge zones will have a "definite long-term benefit to the natural discharge areas (rivers and springs) in the basin," "the timing of any measurable beneficial impacts at the San Pedro River . . . is uncertain but is definitely well into the future, possible several decades or more."[18] *Id*. at 56, AR 6012. Taking into account the BiOp's findings regarding the possibility of extirpation of certain umbel populations at certain times of the year, the increasing groundwater deficit in the subwatershed, the estimated reduction in base flow caused by the Fort, and the uncertain timing of any measurable beneficial impacts from mitigation measures, FWS fails to provide a rational connection between the facts and its summary conclusion that recovery

[18] As discussed below, the BiOp's reliance on the Fort's yet-to-be-developed "targeted mitigation strategy" to provide short-term beneficial impacts violates the ESA and is arbitrary and capricious.

of the umbel and flycatcher will not be affected.

In addition, FWS' conclusions also rely on the theory that umbel populations will recolonize areas if they are eliminated. However, other passages in the BiOp contradict this theory. 2007 BiOp 80, AR 6036. Regardless, as Plaintiffs point out, the ability to recolonize would likely only return the population to the status quo. The BiOp does not discuss the effect of extirpation and subsequent recolonization on recovery of the umbel.

**2. Reliance on Uncertain and Unidentified Mitigation Measures**

Plaintiffs contend that the 2007 BiOp relies on uncertain and unidentified mitigation measures to support its no jeopardy and no adverse modification conclusions, and therefore violates the ESA and is arbitrary and capricious. The 2007 BiOp anticipates that the Fort's operations will reduce the San Pedro's base flows by 0.04 CFS "through water conservation measures implemented by 2016." 2007 BiOp 115, 132, AR 6071, 6088. These measures are described in the BiOp's "Water-Related Conservation Measures" section. *Id.* at 41-78, AR 5997-6034.

The Ninth Circuit has held that mitigation measures may be included as part of a proposed action and relied upon only where they involve "specific and binding plans" and "a clear, definite commitment of resources for future improvements" to implement those measures. *Nat'l Wildlife Fed'n*, 524 F.3d at 935-36 (finding agency's "sincere general commitment to future improvements" inadequate to support no jeopardy conclusion). Furthermore, as this Court explained in *Rumsfeld*, mitigation measures supporting a BiOp's no jeopardy or no adverse modification conclusion must be "reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards." 198 F. Supp. 2d at 1152 (citing *Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987)).

Here, the BiOp relies on conservation measures that are not reasonably specific nor reasonably certain to occur, and in some cases not even identified. According to the BiOp, the proposed action includes 26 water-related mitigation measures the Fort promises to implement

before 2016. 2007 BiOp 60, AR 6016. These conservation measures are shown in Table 18 in the PBA, which provides a list of the 26 projects and their funding status, and in Appendix H of the PBA, which quantifies water savings for these projects. PBA 276, AR 2198 (Table 18); PBA, AR 2375 (Appendix H). Plaintiffs are correct that the mitigation measures are not reasonably specific. Even after Defendants attempt to explain and cross-reference Table 18 and Appendix H, it is difficult to determine exactly which projects are planned. As Plaintiffs point out, there are twelve projects listed in Table 18 that are not in Appendix H, and FWS does not provide water saving information for twelve of the measures. The difficulty in ascertaining exactly which projects are planned and the uncertainties in estimated water savings make the BiOp's proposed conservation measures look like the "laundry list of possible mitigation measures" rejected by this Court in *Rumsfeld*. 198 F. Supp. 2d at 1153.

In addition, Plaintiffs are correct that the BiOp does not say how the Fort determined the amount of water the conservation measures would save. Defendants claim that Appendix H and "extensive discussion" at pages 255-273 in the PBA describe how the yields were developed. As noted above, however, Appendix H does not contain twelve of the proposed projects listed in Table 18, and water saving information is not provided for twelve of the measures in Appendix H.

Plaintiffs are also correct that the mitigation measures are not reasonably certain to occur. The BiOp itself states that "some of the planned projects/strategies are conceptual in nature only and may be altered, replaced, or abandoned as understanding of the San Pedro River riparian ecosystem and the regional ground water system upon which it depends improves." 2007 BiOp 42, AR 5998. Nine of the 26 water conservation projects found in Table 18 are definitively stated to be funded. *Id.* at 60, AR 6016. Seven of the 26 conservation actions involve ongoing funding, one involves military construction, and one is programmed. *Id.* Eight of the 26 conservation actions are not yet funded. *Id.* In other words, nearly one-third of the mitigation measures proposed are without funding. In addition, three of the unfunded measures account for approximately half of the water savings upon which the BiOp relies. FWS states that "[g]iven . . . Fort Huachuca's success in accomplishing past water conservation actions, we consider the

targeted mitigation projects to be reasonably certain to occur within 10 years, despite the lack of a clear and definite commitment of resources due to budgetary volatility." 2007 BiOp 60, AR 6016. As noted above, however, the Ninth Circuit has rejected reliance on uncertain and contingent mitigation measures, requiring instead that measures evaluated as part of the action have a "clear, definite commitment of resources for future improvements." *Nat'l Wildlife Fed'n*, 524 F.3d at 935-36. In addition, past mitigation measures "may neither substitute for nor guarantee the future improvements." *Id.* at 936.

FWS also asserts that even if no mitigation measures were implemented by the Fort and the effect of its groundwater pumping on the San Pedro River remained at 2005 levels (*i.e.* 0.3 CFS reduction in base flow), the Fort's proposed action would still not cause jeopardy or adverse modification. However, this does not appear to be supported by statements in the BiOp and PBA indicating reliance on the mitigation measures to achieve the no jeopardy and no adverse modification conclusions. Specifically, the BiOp states that "[e]ffects to critical habitat on the San Pedro River within the RNCA will be minimized by Fort Huachuca's proposed reductions in removal of ground water from storage and capture of natural discharge." 2007 BiOp 127, AR 6083. The PBA states that "[e]ffects of future groundwater pumping attributable to Fort Huachuca on Huachuca water umbel are predicted to be insignificant because the fort plans to continue to reducing [sic] its potential effect on the river by implementing significant conservation measures." PBA 195, AR 2117.

Plaintiffs contend that the BiOp's reliance on the City of Sierra Vista to recharge 1,868 AF per year to the regional aquifer through its Sierra Vista Wastewater Treatment Plant ("SVWTP") is improper because FWS ignored information suggesting the facility is not working as planned, and because this Court rejected reliance on the SVWTP in FWS' 1999 BiOp because it was "short-term and inadequate." *Rumsfeld*, 198 F. Supp. 2d at 1154-55**.** Defendants are correct, however, when they point out that this facility is not a proposed mitigation measure, but rather is already in operation and therefore is necessarily considered as offsetting the water use of a portion of the Fort's off-post induced population. Based on observations that water has been daylighting (or coming to the surface) at a spring site directly east of the facility and thus not

serving its intended purpose, Plaintiffs claim that the SVWTP is not working as planned and therefore the facility recharge amount utilized in the BiOp is unsupported and contrary to the evidence. However, Plaintiffs present no data in the record to suggest that the recharge from the SVWTP in 2005 – the year in which the BiOp begins to calculate the hydrologic impacts of the Fort – was anything less than the stated figure. Rather, Plaintiffs cite later data regarding the surfacing of water Plaintiffs attribute to the facility. In fact, it is clear from the record that there was no definitive evidence at the time of consultation to indicate the spring discharge came from the SVWTP's recharge basins. Furthermore, even if definitive evidence did exist during consultation, there would have been no reliable manner by which FWS could separate the artificially-increased flow from the springs from the natural discharge of the springs.

Plaintiffs also contend that the recharge amount utilized in the BiOp is contrary to the Army's own PBA and the reports cited therein. However, a review of the PBA shows that the BiOp's reliance on 1,868 AF is consistent with the PBA and the cited reports. In fact, the 1,868 AF figure is drawn directly from a report by the Arizona Department of Water Resources. PBA 94, AR 2016. In sum, the BiOp reasonably analyzed and considered recharge from the SVWTP and "articulated a rational connection between the facts found and the choice made." *Alpine Land & Reservoir Co.*, 887 F.2d at 213.

Finally, Plaintiffs challenge the BiOp's reliance on the Fort's yet-to-be-developed "targeted mitigation strategy." In the BiOp, FWS identifies two uncertainties in the beneficial impacts of the mitigation measures it has proposed. 2007 BiOp 56, AR 6012. First, "the timing of any measurable beneficial impacts at the San Pedro River . . . is uncertain but is definitely well into the future, possibly several decades or more." *Id.* Second, "the spatial distribution of impacts at the San Pedro River from minor improvements in ground water storage changes associated with pumping due to the presence of Fort Huachuca is uncertain." *Id.* However, despite these uncertainties, the BiOp states that these "temporal" and "spatial" aspects of groundwater pumping are critical to determining how to protect the river because "[s]imply reducing the regional ground water deficit . . . does not insure the health of the San Pedro River and the endangered species dependent on this resource, notably the Huachuca water umbel." *Id.*

at 42, AR 5998. To address the temporal and spatial problems identified with the proposed mitigation measures, FWS relies on the Fort's proposal to develop a "targeted mitigation strategy." The goal of the strategy would be "to identify specific optimal sites and mitigation activities which would have a reasonably short-term (ideally less than 10 years) beneficial impacts to riparian habitat that supports federally listed threatened, endangered, and candidate species in areas potentially threatened by ground water pumping." *Id.* at 56, AR 6012.

Plaintiffs are correct in their assertion that the BiOp's no jeopardy and no adverse modification conclusions cannot be based on the Fort's promise – no matter how well-intended – to develop a plan in the future to mitigate the impacts of its proposed action. As this Court explained in *Rumsfeld*, an agency's commitment to develop a plan to mitigate its impacts "is an admission that what is currently on the table as far as mitigation measures is inadequate to support FWS' 'no jeopardy' decision." 198 F. Supp. 2d at 1154. The proposed measures "have to be identified and included in the Final BO, either as [Reasonable and Prudent Alternatives] or incorporated into the Army's proposed action, to support a 'no jeopardy' decision." *Id.* Without these measures identified and included in the BiOp, there is no factual basis and no rational basis for the opinion. *Id.* "[A] BiOp may not rely on future mitigation to support a no adverse modification conclusion without discussing the interim effects on the species." *S. Yuba River Citizens League*, 723 F. Supp. 2d at 1279 (citing *Nat'l Wildlife Fed'n*, 524 F.3d at 935). While it is true, as Defendants point out, that the BiOp addresses the uncertainty in the distribution, both temporal and spatial, of beneficial impacts to the River and states that the impacts cannot be predicted without sophisticated groundwater modeling that was not available for consideration during consultation, this does not excuse the BiOp's reliance on the Fort's promised, yet entirely unwritten strategy to take unspecified mitigation measures. In addition, Defendants' argument that even without the targeted mitigation strategy the impacts caused by Fort Huachuca's pumping are "likely to be too small to detect or pose a threat to the umbel or its critical habitat," is unpersuasive. This statement is contradicted by the BiOp, which states: "*In order to meet its legal obligation to mitigate* potential pumping effects on endangered species in the San Pedro Rivers riparian corridor, Fort Huachuca in cooperation with the USPP proposes to

develop a targeted mitigation strategy." 2007 BiOp 56, AR 6012 (emphasis added). If the Army's ongoing operations and mitigation measures already met ESA standards, there would be no need for developing the targeted mitigation strategy.

**3. BiOp's Findings and Conclusions Not Supported by the Record and Best Available Science**

Plaintiffs contend that the 2007 BiOp's no jeopardy and no adverse modification conclusions are arbitrary and capricious because they are not supported by findings in the BiOp and evidence in the record ,and because FWS failed to "articulate[] a rational connection between the facts found and the conclusions made." *Pac. Coast Fed'n of Fishermen's Ass'ns v. U.S. Bureau of Reclamation*, 426 F.3d at 1090. Plaintiffs also contend that FWS did not use the "best scientific and commercial data available," in violation of the ESA.

**a. Support in the Record and Rational Connection between Facts and Conclusions**

First, Plaintiffs contend that the 2007 BiOp fails to provide a reasoned analysis for using a new methodology to calculate the Fort's share of the regional groundwater deficit and for eliminating the "zeroing-out" requirement used in the 2002 BiOp. In 2002, FWS used a percentage-based population calculation and based its no jeopardy and no adverse modification conclusions in part on the Fort's commitment to reduce its contribution to the groundwater overdraft in the Subwatershed to zero by 2011. 2002 BiOp 45, AR 21661. In 2007, FWS chose to use a different methodology and decided not to rely on the "zeroing-out" requirement. 2007 BiOp 122-23, AR 6078-79.

Plaintiffs contend that FWS provides no rationale, let alone a reasoned analysis, for changing its position and eliminating its reliance on the zeroing-out requirement. However, it is clear from the PBA and the BiOp that the Army and FWS did in fact explain why it moved from the water budget-based approach used in 2002 to calculate sustainable yield to the "demand-

based water accounting system" for the 2007 consultation.[19] PBA 96-103, AR 2018-25; 2007 BiOp 122-24, AR 6078-80. In the BiOp, FWS explains the shortcomings and inaccuracies associated with the 2002 population percentage-based approach to determine the Fort's share of the regional groundwater deficit. 2007 BiOp 122-24, AR 6078-80. For example, FWS states that continuing to utilize a fixed population percentage-based methodology to mitigate the hyrdologic impacts attributable to the Fort is unreasonable because the variables used in such a calculation (*e.g.* "decreased, calculated discharges due to increases in riparian [evapotranspiration]" and "regional population growth proceeding at a rate greater than that associated with the installation") are frequently revised in ways that bear no relation to the Fort's actual contribution to the groundwater deficit. *Id.* at 123, AR 6079. FWS then explains that the "'zeroing-out' of a portion of a fixed percentage of a frequently revised regional ground water deficit" is not and should no longer be a performance standard for the Fort, because the Fort would not and could not always be responsible for the same percentage of the groundwater deficit. *Id.* The BiOp also explains that it is preferable to use an empirical determination of total contribution to regional ground water deficit rather than relying on assumptions that the Fort is responsible for a fixed percentage of the Subwatershed population, and therefore a fixed percentage of a regional water deficit. *Id.* at 124, AR 6080. Further, FWS explains its decision to use the Army's "improved water accounting methodology . . . because it relies upon up-to-

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[19] Pursuant to the U.S. Supreme Court's decision in *FCC v. Fox Television Stations, Inc.*, 129 S.Ct. 1800 (2009), FWS is not held to a heightened standard in providing an explanation for changing its analysis. An agency is required to "display awareness that it *is* changing position" and "show that there are good reasons for the new policy." *Id*. at 1811. However,

> it need not demonstrate to a court's satisfaction that the reasons for the new policy are *better* than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates. This means that the agency need not always provide a more detailed justification than what would suffice for a new policy created on a blank slate.

*Id.* (emphasis in original).

date hydrological and ecological analyses . . . combined with the results of prior, rigorous studies." *Id.* at 123, AR 6079.

Defendants are also correct in their assertion that continued adherence to the old water budget and percentage-based methodology would be contrary to § 321 of the DAA because it would leave the Fort responsible for mitigating impacts from a segment of the civilian population that is not attributable to the Fort. The BiOp acknowledges that the Fort's "on-Post population is relatively static compared to the regional population, which is subject to a sustained growth rate larger than that of the installation." *Id.* at 124, AR 6080 (citing Appendix I of the PBA). In addition, "[u]nder the superceded 2002 methodology, increases in regional population would create increases in total water use, a fixed portion of which would be the responsibility of Fort Huachuca, regardless of whether that population growth was the result of Fort activities." *Id.* In sum, the new methodology used in the 2007 BiOp represents the best available scientific information and FWS provides a reasoned basis and explanation for its use.

Second, Plaintiffs contend that the BiOp focuses exclusively on the immediate impacts of pumping on river base flows while completely ignoring the impacts of pumping on ground water storage and increasing groundwater deficits. Plaintiffs correctly note that FWS must evaluate the "effects of the action" – which include "indirect effects" which are "caused by the proposed action and are later in time, but still are reasonably certain to occur" – on the umbel and flycatcher. 16 U.S.C. § 1536(b)(3)(A); 50 C.F.R. §§ 402.14(g)(3), 402.02. However, it is clear that the BiOp does analyze the anticipated indirect effects of the Fort's pumping on ground water storage and the impacts of reductions in aquifer storage on the umbel and flycatcher and their respective critical habitats.

Table 12, Column D, in the BiOp quantifies the annual change in groundwater storage solely from pumping attributable to the Fort in 2005 and then in 2016. 2007 BiOp 118, AR 6074. Accompanying the table is a discussion of how FWS derived the numbers: several modeling studies allowed FWS to estimate that 55 percent of groundwater pumping attributable to the Fort comes from aquifer storage rather capture of water from basin recharge or discharge. *Id.* As for an analysis regarding the impact that the fraction of groundwater pumping that

reduces aquifer storage may have on San Pedro River base flows and the umbel, flycatcher, and their habitats, the BiOp adequately explains that since the umbel and flycatcher depend on the presence of riparian vegetation and moist soils or surface water, the mere existence of reduced ground water storage is of little analytical value. Because of this, FWS analyzes instead the effects of the groundwater pumping on the discharge of that groundwater to the surface flow in the aquatic habitats in which the species occur. Table 12, Column H, shows the anticipated overall effect of the Fort's groundwater pumping on the discharge to the San Pedro River from the regional aquifer. *Id.* (showing 0.3 CFS reduction in base flow in 2005 baseline year and 0.04 CFS reduction in 2016). The BiOp does not, as Plaintiffs contend, focus exclusively on the immediate impacts to streamflows. The BiOp's analysis, including the values in Table 12, represents the hydrologic impacts anticipated to occur in both groundwater and base flows over time (2005-2016), based on the proposed action and its conservation mitigation measures. As the BiOp notes, "[t]he residual ground water storage deficits, and eventual reduction in base flow predicted from ground water demand in the target year 2016 can be expected to affect the base flow hydrology of the San Pedro River at some point in the future beyond 2016." *Id*. at 120, AR 6076.

Third, Plaintiffs contend that FWS' conclusion that the effects of the Fort's proposed action and groundwater pumping – manifested through reduced base flows on the San Pedro River – will not jeopardize the umbel or adversely modify its critical habitat is not supported by the BiOp and the record. First, Plaintiffs contend that FWS' conclusion that "[t]he status of Huachuca water umbel appears to be stable" on the San Pedro River is unsupported by the record. 2007 BiOp 127, AR 6083. Plaintiffs are correct in their assertion as the BiOp's discussion of the umbel and its habitat overall describes a species in steady decline and vulnerable to extirpation in certain reaches of the San Pedro River. Describing umbel populations in southeastern Arizona generally, the BiOp states that the restriction of the umbel to a relatively small area in this region "increases the chance that a single environmental catastrophe, such as a severe tropical storm or drought, could eliminate populations or cause extinction." 2007 BiOp 80, AR 6036. Furthermore, "[p]opulations are in most cases isolated, as

well, which makes the chance of natural recolonization after extirpation less likely." *Id.* Since the umbel was listed, populations on the San Pedro River have declined. A 2004 inventory found 30 populations within the SPRNCA, compared to 43 populations in 2001, 51 in 1997, and 43 in 1995.[20] *Id.* at 82, AR 6038. Furthermore, the BiOp's discussion of the vulnerability of the umbel to possible extirpation due to decreased base flows in several areas throughout the SPRNCA hardly paints a picture of stability. *Id.* at 85-86, AR 6041-42. Defendants' reliance on umbel life history traits – such as it ability to disperse after dislodgement, its ability to recolonize sites after disturbance, and its fluctuation in response to flood cycles and site characteristics – cannot offset evidence in the BiOp and record pointing to the umbel's precarious status.

Second, Plaintiffs contend that the BiOp's conclusion that base flow reductions are "small in magnitude" compared to the river's average annual base flow is unsupported by the record. *See id.* at 120, AR 6076. Defendants' contention that it is not possible and worthwhile to compare anticipated streamflow reductions to occasionally intermittent reaches of river where natural variations in flow cannot be projected over time or space with any degree of certainty is unpersuasive. The U.S. Geological Survey maintains three streamflow measuring stations on the upper San Pedro River.[21] The BiOp states that the "proposed action will affect Huachuca water umbel within the [SPRNCA] through small reductions in base flow during those times when flows are at near-zero levels." *Id.* at 127, AR 6083. Thus, it is at those times when the umbel is vulnerable to extirpation. *See id.* at 86, 6042. Thus, FWS must evaluate the impacts of reduced streamflow at those times of the year and not simply make a comparison to average annual flow.

Third, Plaintiffs contend that the BiOp does not addresses the impacts of streamflow reductions for the years between 2005 and 2016, rather focusing on impacts only in 2005 and in 2016. Plaintiffs are correct. Under the ESA, FWS must evaluate the impacts of the entire agency action, which include the Fort's operations from 2006 to 2016. *See Pac. Coast Fed'n of*

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[20] Likewise, populations on the Fort are declining as well. In 2005, 14 populations were inventoried, as opposed to the 22 populations found in 2002. *Id.* at 81, AR 6037.

[21] *See* footnote 13, *supra*.

*Fishermen's Ass'ns*, 426 F.3d at 1091 (rejecting BiOp because it "contains no analysis of the effect on the [endangered fish] of the first eight years of implementation of the [action]"); *Nat'l Wildlife Fed'n*, 524 F.3d at 934-35. Defendants point to two instances in the BiOp where FWS states that the Fort's effects to base flow are "expected to be reduced in magnitude over time" and "anticipated to decrease between 2005 and 2016." *Id.* at 121, 131, AR 6077, 6087. These conclusory statements, however, cannot substitute for an analysis of the effects of the proposed action on base flow reductions between 2005 and 2016.

**b. Best Scientific and Commercial Data Available**

Plaintiffs contend that, in failing to consider the impacts of climate change in arriving at the no jeopardy and no adverse modification conclusions in the BiOp, FWS failed to use the best available science. As mentioned above, the BiOp must include "a summary of the information on which the opinion is based" and "a detailed discussion of the effects of the action on listed species or critical habitat." 50 C.F.R. § 402.14(h)(1), (2). Both the action agency and the consulting agency must use the "best scientific and commercial data available" during the consultation process and in drafting the BiOp. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(d), (g)(8). FWS "cannot ignore available biological information." *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988). Defendants argue that climate change impacts were too uncertain to include in the BiOp. However, FWS is required to evaluate the best available science and information, even if it is uncertain. *Wild Fish Conservancy*, 628 F.3d at 524-25. As the Ninth Circuit has held, "incomplete information . . . does not excuse the failure to comply with the statutory requirement of a comprehensive biological opinion using the best information available." *Conner*, 848 F.2d at 1454 (citing 16 U.S.C. § 1536(a)(2)). Courts have required that agencies evaluate climate change impacts in BiOps, even where the available studies are based on predictions. *See S. Yuba River Citizens League*, 723 F. Supp. 2d at 1273-74; *Natural Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322, 370 (E.D. Cal. 2007); *Pac. Coast Fed'n of Fishermen's Ass'ns*, 606 F. Supp. 2d at 1184. Plaintiffs point to information in the record highlighting the potential effect of climate change in the region, including warmer temperatures, below average precipitation, and possibility of drought. Where a plaintiff demonstrates the

existence of "data that was omitted from consideration," courts may find a violation of the ESA for failure to use the best scientific and commercial data. *See Kern Cnty. Farm Bureau v. Allen*, 450 F.3d 1072, 1080-81 (9th Cir. 2006).

The BiOp does not analyze or even mention climate change. Defendants attempt to explain the omission of climate change analysis by stating that because the BiOp already analyzes a worst case scenario, the potential impact of climate change is "already factored" in. However, this Court may not "imply[] an analysis that is not shown in the record." *Gifford Pinchot*, 378 F.3d at 1074. In sum, although Defendants cite an internal memo that notes that FWS will have "ample opportunity to assess climate" in the future, FWS is required to complete that analysis using the best available science at the time of the consultation and BiOp. (FWS Memorandum-to-File, AR 6161-62).

Plaintiffs also contend that FWS failed to use the best available science in determining the amount of groundwater pumping connected to Fort Huachuca. Specifically, Plaintiffs challenge FWS's estimate of 118 gallons per capita per day (GCPD) for residents of unincorporated areas of the Subwatershed. *See* 2007 BiOp 116, AR 6072. FWS relies on the Groundwater Users Advisory Council of the Prescott Active Management Area for its estimate. *Id.* Plaintiffs claim that FWS was required to explain why it chose to use that figure over a higher estimate (177 GCPD) contained in the most recent USPP Section 321 Report available in the record. *See* U.S. Dep't of Interior, *Water Management of the Region Aquifer in the Sierra Vista Subwatershed, Arizona–2005 Report to Congress* (2006), at 8, AR 19658. However, Defendants are correct that the 177 GCPD figure contained in the Section 321 Report, read in context, includes water use by all categories of water users, not merely by residents of unincorporated areas of the Subwatershed. Thus, FWS had a rational basis to rely on the Prescott figure in the BiOp's calculations of rural per capita water use.

Finally, Plaintiffs contend that the BiOp's determination and conclusion regarding the size of the population connected to the Fort is unsupported by the record. The BiOp states that the Fort, including its induced population, was responsible for approximately 43 percent of the total 2005 population in the Sierra Vista Subwatershed. 2007 BiOp 117, AR 6073. The BiOp

states that the model used by the Fort to make this determination – the Economic Income Forecasting System ("EIFS") model – has "a firm basis in regional economic theory and is widely applied by the Department of the Army within the context of NEPA analyses to determine the economic impacts of changes in personnel levels." *Id.* at 116, AR 6072.[22] Specifically, the BiOp relies on the Army's explanation of EIFS:

> The U.S. Army, with the assistance of academic and professional economists and regional scientists, developed EIFS to address the economic impacts of NEPA-requiring actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS should be used in NEPA assessments for BRAC. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand but still have firm, defensible bases in regional economic theory.

Appendix G at 9, Dep't of the Army 2006, AR 9950. The record contains a report of EIFS modeling results for the Fort. PBA Appendix L, AR 2379. The BiOp states that FWS also contrasted the Fort's EIFS model results to a lower estimate from an independent consultant and decided to use the higher EIFS figures. 2007 BiOp 116, AR 6072 (citing PBA Appendix I, AR 2380). Although Plaintiffs point to data regarding recent increases in spending by the Fort in the local economy, they do not cite to any record data regarding human population in the area during the same time period to show that it is unreasonable for the BiOp to rely on the results of the EIFS to determine the induced population attributable to the Fort.

Plaintiffs also contend that FWS unreasonably asserts that no future population growth in the area would be related to the Fort. However, this is a mischaracterization of FWS' statements in the BiOp. The BiOp does not state that the Fort would exhibit no growth or that its influence was waning. FWS simply states that it does not anticipate the rate of population growth of the Fort (and its induced population) to match that of the regional population. *See* 2007 BiOp 124-25, AR 6080-81. "Fort Huachuca's on-Post population is relatively static compared to the regional population, which is subject to a sustained growth rate larger than that of the installation

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[22] The BiOp incorrectly cites Appendix G of the PBA to support this statement. The BiOp should have correctly referred to Appendix G of Department of the Army 2006, AR 9948, an EIFS model run for the U.S. Army Installation at Fort Belvoir, VA.

(see Appendix I of the Revised PBA)." *Id* at 124, AR 6080.

**4. Summary**

The Court has identified numerous defects in the BiOp's jeopardy and adverse modification analyses. The BiOp fails to examine the effects of Fort Huachuca's operations on recovery of the species and their critical habitat, and fails to provide a rational connection between findings in the BiOp and the record and its ultimate conclusion that the operations will not affect recovery. The BiOp relies on mitigation measures that are not reasonably specific nor reasonably certain to occur. And the BiOp contains conclusions that are not supported by the record or the best scientific or commercial data available, and fails to articulate a rational connection between the facts found and the conclusion made. Because of this, the BiOp violates the ESA and is arbitrary and capricious.

**B. Army's Substantive ESA § 7 Duty**

As stated previously, the Army has an independent, substantive duty under ESA § 7 to ensure that its actions are not likely to jeopardize the umbel and flycatcher or adversely modify their critical habitat. 16 U.S.C. 1536(a)(2); *Pyramid Lake*, 898 F.2d at 1415. "Following the issuance of a biological opinion, the Federal agency shall determine whether and in what manner to proceed with the action in light of its section 7 obligations and the Service's biological opinion." 50 C.F.R. § 402.15(a). Explaining this duty further, the Ninth Circuit has noted that "[c]onsulting with FWS alone does not satisfy an agency's duty under the [ESA]." *Resources Limited, Inc. v. Robertson*, 35 F.3d 1300, 1304 (9th Cir. 1994) (citing *Pyramid Lake*, 898 F.2d at 1415). An agency cannot abrogate its responsibility to ensure that its actions comply with § 7. *Pyramid Lake*, 898 F.2d at 1415. "Arbitrarily and capriciously relying on a faulty Biological Opinion violates [an action agency's substantive] duty. *Defenders of Wildlife v. EPA*, 420 F.3d 946, 976 (9th Cir. 2005), *rev'd on other grounds*, *Nat'l Ass'n of Home Builders v. Defenders of Wildlife*, 552 U.S. 644 (2007). Where a BiOp's flaws are legal in nature, "[d]iscerning them requires no technical or scientific expertise," and failure to understand the legal errors may result in "an action based on reasoning 'not in accordance with law' and . . . thus arbitrary and capricious." *Id.*

Here, as extensively described above, FWS committed legal error in its BiOp by failing to analyze the effects of the Fort's actions on recovery, relying on uncertain and unspecific mitigation measures, and failing to articulate a rational connection between its findings in the BiOp and its no jeopardy and no adverse modification conclusions. The Army's reliance on a legally flawed BiOp is arbitrary and capricious. The Army therefore has violated its § 7 substantive duty to ensure that its proposed ongoing and future operations do not jeopardize the continued existence of the umbel or flycatcher or result in the destruction or adverse modification of their designated critical habitat.

**Accordingly,**

**IT IS ORDERED** that Plaintiffs' Motion for Summary Judgment (Doc. 63) is **GRANTED**; and a declaratory judgment shall be entered consistent with this Memorandum Order. The Clerk of Court is directed to close this case.

DATED this 27th day of May, 2011.

A. Wallace Tashima
United States Circuit Judge
Sitting by Designation