IN THE UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

GENERAL LAND OFFICE OF THE STATE OF TEXAS, Plaintiff, v. UNITED STATES FISH AND WILDLIFE SERVICE, *et al* Defendants.	No. A-17-CA-00538-SS

PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT

ORAL HEARING REQUESTED

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To the Honorable Sam Sparks, United States District Judge:

Plaintiff General Land Office of the State of Texas files this Motion for Summary Judgment pursuant to Rule 56 of the Federal Rules of Civil Procedure.

Plaintiff respectfully moves this Court for an order granting summary judgment on its sole remaining claim. (*See* Dkt. No. 56, Corrected Second Amended Complaint at p.18 (Second Claim for Relief)). There is no triable issue of material fact regarding the issue of whether the Defendants United States Fish & Wildlife Service, *et al*. have impermissibly denied the Petition to Delist the Golden-Cheeked Warbler as an endangered species by using an incorrect legal standard to consider whether the Petition to Delist contained "substantial scientific or commercial information indicating that the petitioned action may be warranted." 16 U.S.C. § 1533(b)(3)(A). On this basis, because the Petition to Delist was impermissibly denied by the Defendants, Plaintiff is entitled to judgment as a matter of law, and the denial should be reversed. Plaintiff's Motion for Summary Judgment is based on the pleadings and administrative record filed in this action, as well as the accompanying memorandum and declaration, the entire record of proceedings before this Court, and any additional response, evidence, or argument that counsel will make at or before any hearing. Pursuant to Rule CV-7(h), Plaintiff hereby requests an oral hearing on this motion.

MEMORANDUM IN SUPPORT OF PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT

I. INTRODUCTION AND SUMMARY OF ARGUMENT

Plaintiff General Land Office of Texas ("GLO") moves the Court to set aside the 90-day finding of the United States Fish and Wildlife Service (the "Service") denying a Petition (the "Petition") to remove the golden-cheeked warbler (the "Warbler") from the list of endangered species. In denying the Petition, the Service violated the Endangered Species Act ("ESA") (16 U.S.C. §1531, et seq.) and its implementing regulations (50 C.F.R. §424.01, et seq.), as well as the Administrative Procedure Act ("APA") (5 U.S.C. §551 et seq.).

Despite overwhelming evidence in the administrative record that substantial scientific information exists that would lead a "reasonable person to believe" that the Petition should be granted, *see* 50 C.F.R. § 424.14(b)(1), the Service impermissibly discounted or ignored numerous scientific studies showing that the Warbler is thriving and no longer needs the protections afforded by the ESA. At the same time, the Service cherry-picked snippets of other studies in an effort to justify its denial of the Petition. In so doing, the Service conducted an impermissibly one-sided review of the Petition that is not sanctioned by the ESA, its implementing regulations, or applicable case law. Accordingly, the denial of the Petition should be reversed by this court.

II. LEGAL BACKGROUND OF THE ENDANGERED SPECIES ACT

A. Listing of Species

The ESA was adopted in 1973 in an effort to protect species threatened with extinction. See H.R. Rep. No. 93-412, at 4-5 (1973). Before a species receives protection under the ESA, it must be listed by the Secretary of the Interior (the "Secretary") as either "endangered" or "threatened." 16 U.S.C. § 1533(a). The Secretary has delegated this authority to the Fish and Wildlife Service (the "Service"). 50 C.F.R. § 402.01(b). An "endangered" species is one "which

is in danger of extinction throughout all or a significant portion of its range." 16 U.S.C. §1532(6). A "threatened" species is "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." 16 U.S.C. §1532(20). The listing determination must be based on certain factors using the "best scientific and commercial data available." 16 U.S.C. §1533(b)(1)(A). Economic or other factors may not be considered in making a listing determination.

A species will be listed if it is endangered or threatened due to any one or a combination of the following factors:

> (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
>
> (B) overutilization for commercial, recreational, scientific, or educational purposes;
>
> (C) disease or predation;
>
> (D) the inadequacy of existing regulatory mechanisms; [or]
>
> (E) other natural or manmade factors affecting its continued existence.

16 U.S.C. § 1533(a)(1).

B. <u>Designation of Critical Habitat</u>

The purpose of the ESA is to "provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved." 16 U.S.C. §1531(b). To achieve that purpose, under Section 4 of the ESA, when listing a species as threatened or endangered, the government has a concurrent duty to designate critical habitat for that species "to the maximum extent prudent and determinable." 16 U.S.C. §1533(a)(3)(A)(i); *see also id.* § 1533(b)(6)(C) (permitting the Secretary to extend the deadline for designating critical habitat up to two years

after the publication of the proposed rule to list the species if critical habitat is not "determinable" at the time of listing).

The ESA defines "critical habitat" as either "the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of this title, on which there are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection," and "specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species." 16 U.S.C. § 1532(5)(A).

Designating critical habitat is the most effective way of protecting species and was at the forefront of legislators' minds during the initial debates on the ESA: "Often, protection of habitat is the only means of protecting endangered animals which occur on nonpublic lands." S. Rep. No. 307, 93 Cong., 1st Sess. 4 (1973). In 1978, Congress amended the ESA to expressly link the timing of the critical habitat designation to the decision to list a species. 16 U.S.C. §1533(a)(3). The duty to designate critical habitat is a "non-discretionary duty" and a "congressional mandate." *Schoeffler v. Kempthorne*, 493 F.Supp.2d 805, 809 (W.D. La. 2007).

In the years since the enactment of the 1978 Amendments, courts have regularly emphasized the central importance of designating and protecting critical habitat in the ESA. *See, e.g., Catron County Board of Commissioners v. FWS*, 75 F.3d 1429, 1437 (10th Cir. 1996) ("[T]he core purpose of the ESA is to prevent extinction of species by preserving and protecting the habitat on which species depends from the intrusive activities of humans."); *Palila v. Hawaii Department of Land & Natural Resources*, 649 F.Supp. 1070, 1076 (D. Haw. 1986), *aff'd*, 852 F.2d 1106 (9th

Cir. 1988) ("one of the main purposes of [the ESA] was conservation and preservation of the ecosystems upon which endangered species depend.").

In proposed and final listing rules, the Service must state its reasons for failing to designate critical habitat based upon whether designation is "not prudent" or "not determinable." 50 C.F.R. §424.12(a). The Service defines "not prudent" as when any of the following situations exist:

> (i) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species; or (ii) Such designation of critical habitat would not be beneficial to the species, including for reasons that the present or threatened change to the species habitat or range does not pose a threat to the species, or whether any areas meet the definition of "critical habitat."

Designation of critical habitat is "not determinable" when one or both of the following situations exist: "(i) There is insufficient data to perform required analyses; or (ii) The biological needs of the species are not sufficiently well known to identify any area that meets the definition of 'critical habitat.'" 50 CFR § 424.12(a)(1) & (2).

C. <u>Effects of Listing and Designation</u>

Only listed "endangered" species are specifically protected by Section 9 of the ESA, which, among other things, makes it unlawful for any person to "take" such species. 16 U.S.C. §1538(a)(1)(b). The term "take" under the ESA means to "harass, harm, hunt, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 16 U.S.C. §1532(19). ESA Section 4(d), however, authorizes Section 9 take protections for merely "threatened" species if such protections are promulgated by rule. 16 U.S.C. § 1533(d). Pursuant to this section, the Secretary of the Interior has issued a general regulation that extends the Section 9 take prohibitions to all threatened species. *See* 50 C.F.R. § 17.31(a).

The designation of a species as endangered or threatened forces property owners to seek permits or approval of activities that could potentially disturb the species. *See* 16 U.S.C. § 1539(a)

(discussing permitting provisions). The ESA prohibits takes of certain endangered and threatened species. *See* 16 U.S.C. § 1538(a)(1)(B); see also 50 C.F.R. § 17.21(c) (2016) (discussing endangered species takes). A "take" is broadly defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct. *See* 16 U.S.C. § 1532(19). Consequences of an unauthorized take include civil and criminal penalties, including fines of up to $50,000 and imprisonment for up to one year. 16 U.S.C. § 1540.

Prohibited actions under the ESA include import or export, take, possession and specified other acts, including but not limited to engaging in interstate or foreign commerce, and sale or offering for sale a threatened or endangered species, as the case may be. 50 C.F.R. §17.21(a)-(f).

Under Section 7 of the ESA, federal agencies must engage in a consultation process with the Secretary of the Interior if they believe their project on any property may affect endangered or threatened species. 16 U.S.C. § 1536(a)(2). Under Section 7, the Secretary must provide the consulting federal agency and applicant with a Biological Opinion summarizing the basis for the opinion and detailing how the project will impact a species or its critical habitat. See 16 U.S.C. §1536(b)(3)(A). If jeopardy or adverse modification is found, the opinion must suggest "reasonable and prudent alternatives" that may be taken by the consulting agency or applicant to avoid jeopardy to the species or adverse modification of critical habitat. *Id*.

If it is determined that the "taking of an endangered species or a threatened species incidental to the agency action" will not jeopardize the species' continued existence or result in the destruction or adverse modification of critical habitat of such species, a written (incidental take) statement must be issued that (1) specifies the impact of such incidental taking on the species;

(2) specifies those reasonable and prudent measures that are necessary or appropriate to minimize such impact; and (3) sets forth the terms and conditions with which the agency or applicant must comply to implement the specified measures. 16 U.S.C. §1536(b)(4)(B)(i), (ii) and (iv).

D. Five-Year Status Reviews of Species

Every five years, the Service must conduct a status review of each listed species to determine whether a change in the species' listing status is warranted. 16 U.S.C. §1533(c)(2)(A). During such status reviews, the Service must determine whether any species should: (i) be removed from such list; (ii) be changed in status from an endangered species to a threatened species (i.e., "downlisted"); or (iii) be changed in status from a threatened species to an endangered species (i.e., "uplisted"). 16 U.S.C. §1533(c)(2)(B).

E. Petitions to List, Delist, or Reclassify a Species

An interested person may petition the Service to list, delist, or reclassify the status of a species. 16 U.S.C. § 1533(b)(3)(A). In contrast to the "best scientific and commercial data" standard applied to actually listing a species, the Service reviews listing and delisting petitions for "substantial scientific or commercial information indicating that the petitioned action *may* be warranted." 16 U.S.C. § 1533(b)(3)(A) (emphasis added). "Substantial information is that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted."[1] 50 C.F.R. § 424.14(b)(1). Further, in evaluating substantiality, the Service shall consider whether the petition:

[1] Effective October 27, 2016, this definition was changed to "credible scientific or commercial information in support of the petition's claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted." 50 C.F.R. § 424.14(h)(1)(i). Because the 90-day finding was issued on May 25, 2016, the standard applied to that decision is the earlier one in effect at that time. *See Buffalo Field Campaign v. Zinke*, 289 F.Supp.3d 103, 106 & n.1 (D.D.C. 2018) (applying the former version of this very rule, rather than the new version, when evaluating a 90-day finding on a petition that was finalized when the older version was in place).

> (i) Clearly indicates the administrative measure recommended and gives the scientific and any common name of the species involved;
>
> (ii) Contains detailed narrative justification for the recommended measure, describing, based on available information, past and present numbers and distribution of the species involved and any threats faced by the species;
>
> (iii) Provides information regarding the status of the species over all or a significant portion of its range; and
>
> (iv) Is accompanied by appropriate supporting documentation in the form of bibliographic references, reprints of pertinent publications, copies of reports or letters from authorities, and maps.

50 C.F.R. § 424.14(b)(2).

To the maximum extent practicable, within 90 days after receiving a petition, the Service must determine whether the petition presents information meeting the indicated criteria. 16 U.S.C. § 1533(b)(3)(A). This finding is known as the "90-day" finding and is published in the Federal Register. *Id.* If the Service determines that the petition presents substantial information indicating that the petitioned action may be warranted, it commences a "review of the status of the species concerned," which culminates in a "12-month finding" determining whether the petitioned action is warranted. *Id.* § 1533(b)(3)(A), (B).

Upon a positive 90-day finding, the Service is to commence a "12 month review," where the Service reviews the status of the species within 12 months of the receipt of the petition to delist, then makes one of three findings: that the petitioned action is not warranted; that the petitioned action is warranted; or that the petitioned action is warranted but precluded. 16 U.S.C. §1533(b)(3)(A)-(B).

Any negative 90-day finding, denying any further evaluation of a petition, is "subject to judicial review." 16 U.S.C. § 1533(b)(3)(C)(ii).

III. STATEMENT OF FACTS

A. Listing History of the Warbler

The Warbler is a small, migratory songbird that breeds exclusively in parts of Texas. *See* Endangered and Threatened Wildlife and Plants; Proposed Rule to List the Golden-cheeked Warbler as Endangered, 55 Fed. Reg. 18846-01, 18846 (May 4, 1990).

The Warbler was first mentioned by the Service in a Notice of Review published on December 30, 1982, as a species under consideration for addition to the List of Endangered and Threatened Wildlife. 47 Fed. Reg. 251, 58459. At that time, the Warbler was categorized as a species for which the Service had information indicating that a proposal to list the species was "possibly appropriate, but for which substantial data are not currently available to biologically support a proposed rule. Further biological research and field study will usually be necessary to ascertain the status of the taxa in this category, and it is likely that some of the taxa will not warrant listing." *Id*. at 58454. The Warbler remained in that category for both the September 18, 1985 Review of Vertebrate Wildlife [50 Fed. Reg. 37958] and the January 6, 1989, Animal Notice of Review [54 Fed. Reg. 554].

On February 2, 1990, a petition was filed seeking an emergency listing for the Warbler, asserting that the normal listing procedure could be "inadequate to protect the bird and its habitat from imminent destruction from clearing and development." 55 Fed. Reg. 18846, 18847.

On May 4, 1990, an emergency rule listing the Warbler as endangered was published concurrently with a proposed rule to provide for public comment. In the proposed rule, the Service stated that it had determined that an "emergency posing a significant risk to the well-being of the golden-cheeked Warbler" existed. *Id*. at 18847. The emergency rule cited past habitat loss and planned development in Travis County and the City of Austin as immediate threats to Warbler

habitat, and also cited the risk of habitat destruction that might occur before the Warbler could go through the regular listing process. 55 Fed. Reg. 18844-45.

In December of 1990, the final rule listing the Warbler as endangered was published. 55 Fed. Reg. 53153 (Dec. 27, 1990). In the final rule, the Service listed multiple areas and development projects posing threats to Warblers. *Id*. at 53157-58.

Pursuant to the listing factors identified in the ESA, the Service provided the following justifications for the listing of these species as endangered:

Listing Factor A (the present or threatened destruction, modification, or curtailment of its habitat or range): The Service stated "[w]idespread clearing of juniper as a range management practice and urban encroachment continue to threaten the golden-cheeked warbler and its habitat." At that time, the Service found the greatest rate of Warbler habitat loss had occurred in the southern and eastern portions of the Edwards Plateau. The Service also cited habitat fragmentation due to highway construction, proposed residential and commercial developments, and proposed reservoirs and water delivery systems, as well as habitat loss in the Warbler's winter territory in Mexico and Central America. *Id*. at 53156-58.

Listing Factor B (overutilization for commercial, recreational, scientific, or educational purposes): The Service determined that this listing factor did not support listing. *Id*. at 53158.

Listing Factor C (disease or predation): The Service determined that it was difficult to assess the extent of next predation due to the difficulty in observing Warbler nests, but listed scrub jays, blue jays, crows, grackles, feral cats and dogs, rat snakes, raccoons, opossums, and squirrels as nest predators. The Service noted that fire ants "could become a threat." *Id*.

Listing Factor D (the inadequacy of existing regulatory mechanisms): The Service determined that although the Warbler is protected under the Migratory Bird Treaty Act (16 U.S.C.

703 *et seq.*) and was listed as a threatened species by the Texas Parks and Wildlife Department, making it illegal to "shoot or physically harm, possess, sell or transport" Warblers without a permit, there was no provision for the protection of habitat in the regulations. The Service also noted that the City of Austin had limited power to protect Warbler habitat. 55 Fed. Reg. at 53158.

Listing Factor E (other natural or manmade factors affecting its continued existence): The Service determined that "[h]abitat destruction that causes habitat fragmentation is an immediate threat to the golden-cheeked warbler." The Service also listed brown-headed cowbird parasitism and lack of reproduction of deciduous trees as factors affecting the continued existence of the Warbler. *Id*. at 53158-59.

Essentially, the listing decision was based on the following key assumptions: (1) habitat loss and fragmentation due to urbanization and range clearance would continue unchecked; (2) current protections under the Migratory Bird Treaty Act and the Texas' endangered species law were insufficient to protect Warbler habitat; and (3) predation might occur, although the difficulty in observing Warblers made this uncertain. 55 Fed. Reg. 53153, 53153-60.

In the final rule listing the Warbler, the Service did not designate critical habitat. The Service stated that "[c]ritical habitat for this species remains undeterminable at this time." *Id*. at 53156. The Service noted that although satellite mapping was used to identify Warbler habitat, "all the specific elements of the habitat that are critical to the survival of the golden-cheeked Warbler are not known." *Id*. The Service stated that biological studies were being conducted to address the issue, and gave a deadline of May 4, 1992, to determine and designate critical habitat. *Id*. More than 25 years from the date the final listing rule was published, critical habitat for the Warbler remains undesignated by the Service.

B. The Eventual 5-Year Status Review

The Service completed its first five-year status review of the Warbler only in 2014 – 24 years after the initial listing. (R006774).[2] The Service was required but failed to conduct five-year status reviews for 1995, 2000, 2005, and 2010; the record is silent regarding why such five-year status reviews were not conducted prior to 2014. The 2014 five-year status review concluded that the Warbler was still "in danger of extinction throughout its range" and should remain listed as an endangered species. (R006789).

C. The Filed Petition to Delist the Warbler

On June 29, 2015, a group of petitioners submitted to the Service a petition to delist the Warbler (the "Petition to Delist"). The Petition to Delist provided substantial new scientific information indicating that delisting may be warranted.

One of the primary sources relied upon by the Petition to Delist was a 2015 study on the Warbler conducted by the Texas A&M University Institute of Renewable Natural Resources (the "2015 Texas A&M Study"). (M000086). Among other things, the 2015 Texas A&M Study presents new information gathered after the publication of the 2014 five-year status review, in particular that there are approximately five times more Warbler breeding habitat than estimated at the time of the emergency listing in 1990, and approximately 19 times more Warblers than assumed at the time of the emergency listing in 1990. (M000089; M000093). The 2015 Texas A&M Study also summarized the extensive research and analysis that has been performed since 1990 and concluded that the warbler's listing status should be re-examined. The Texas A&M Study

[2] Where Plaintiff cites to the Administrative Record lodged by Defendants, citations beginning with an "R" refer to References and Literature Cited, whereas citations beginning with an "M" refer to the Main Index and PDFs.

concluded that the listing of the Warbler was "based upon a fundamental misunderstanding of the existing abundance and population structure" of the Warbler. (M000087).

The Petition to Delist also provided scientific support showing that the Warbler does not currently meet the ESA's definition of "endangered" or "threatened," and is not today "in danger of extinction throughout all or a significant portion of its range," and is unlikely to become so in the foreseeable future. (M000048). The Petition to Delist pointed to research indicating that there is a consensus among the scientific community that breeding Warblers inhabit a much wider range of habitat types than were identified in the early studies on which the Service relied in making its listing determination. (M000049).

The Petition to Delist pointed out that "[t]he [2014] Five-Year Review did not . . . take advantage of the work already completed by Groce, *et al*. (2010) reviewing the state of scientific knowledge concerning the warbler." (M000054). The Petition to Delist also noted that the 2014 5-year status review, which the Service called the "best available body of science known to the Service pertaining to the status of the warbler," failed to consider a 2012 study by Michael L. Morrison, *et al*., which estimated a much larger Warbler habitat than originally believed when it was listed in 1990, and ignored at least eight other studies which estimated a much larger Warbler habitat and instead relied upon the outdated 1990 Wahl study and the 2007 SWCA study. (M000058-59).

The Petition to Delist also pointed out that, although the original listing asserted that fire ants could be a threat to the Warbler, no evidence was provided to support that assertion; it also cited studies contradicting the predation of the Warbler by fire ants or other birds or mammals, and showing the limited effect of brood parasitism. (M000065).

On December 11, 2015, the petitioners submitted supplemental information (the "Supplement") in support of the Petition to Delist. (M000114). The Supplement "identifie[d] actions and events that have addressed the five factors for listing the warbler and identifie[d] the requirements of the 1992 Recovery Plan and draft 1995 Golden-Cheeked Warbler Population and Habitat Viability Assessment Report that have been achieved." (Supplement at p. 2, M000115).

D. The Service's Denial of the Petition to Delist the Warbler

On May 25, 2016, the Service issued a negative 90-day finding, denying the Petition to Delist. (M000440 (Petition Review Form); M000458 (Federal Register notice)). The Service acknowledged that the Warbler's population size and potential range were larger than originally estimated in the original 1990 listing, but noted that "threats of habitat loss and habitat fragmentation are ongoing and expected to impact the continued existence of the warbler in the foreseeable future." (M000449). Determining that the Petition to Delist did "not present substantial information not previously addressed in the 2014 5-year review," the Service concluded the Warbler "has not been recovered, and due to ongoing wide-spread destruction of its habitat, the species continues to be in danger of extinction . . . ." (M000449).

E. The 60-Day Notice Preceding the Present Litigation

Before filing suit, a potential plaintiff must comply with the ESA's "notice and delay" provision, which states that "[n]o action may be commenced under subparagraph (1)(C) of this section prior to sixty days after written notice has been given to the Secretary" of the alleged violation. 16 U.S.C. § 1540(g)(2)(C). On March 1, 2017, more than 60 days prior to the filing of the initial complaint in this action, GLO provided Defendants written notice of violation in accordance with this provision. (*See* Declaration of Mark McAnally ("McAnally Decl."), ¶ 3 & Ex. 1 thereof, attached hereto.).

On June 5, 2017, Plaintiff GLO filed a lawsuit in this Court challenging the 90-day finding. (Dkt. No. 1).

IV. STANDARD OF REVIEW

"[W]hen a party seeks review of agency action under the APA, the district judge sits as an appellate tribunal. The 'entire case' on review is a question of law." *American Bioscience, Inc. v. Thompson*, 269 F.3d 1077, 1083 (D.C. Cir. 2001). "Summary judgment is the proper mechanism for deciding, as a matter of law, whether an agency action is supported by the administrative record and consistent with the APA standard of review." *Buffalo Field Campaign v. Zinke*, 289 F.Supp.3d 103, 108 (D.D.C. 2018) (evaluating negative 90-day finding under the ESA) (quoting *Blue Ocean Institute v. Gutierrez*, 585 F.Supp.2d 36, 41 (D.D.C. 2008)). The court's review of an agency's decision is limited to the administrative record already in existence. *Camp v. Pitts*, 411 U.S. 138, 142 (1973).

Summary judgment is appropriate "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c); *see also Celotex Corp. v. Catrett*, 477 U.S. 317 (1986). "If the moving party meets the initial burden of showing there is no genuine issue of material fact, the burden shifts to the nonmoving party to produce evidence or designate specific facts showing the existence of a genuine issue for trial." *Allen v. Rapides Parish Sch. Bd.*, 204 F.3d 619, 621 (5th Cir. 2000) (quoting *Engstrom v. First Nat'l Bank*, 47 F. 3d 1459, 1462 (5th Cir. 1995)).

Section 704 of the APA states that "[a]gency action made reviewable by statute and final agency action for which there is no other adequate remedy in a court are subject to judicial review." 5 U.S.C. § 704. The APA mandates that "[a]gency action made reviewable by statute and final agency action for which there is no other adequate remedy in a court are subject to judicial review."

5 U.S.C. § 704. ESA section 4(b)(3)(C)(ii) explicitly makes "not substantial" 90-day findings reviewable by federal courts. 16 U.S.C. § 1533(b)(3)(C)(ii) ("Any negative finding described in subparagraph (A) and any finding described in subparagraph (B)(i) or (iii) shall be subject to judicial review."). Therefore, this case is properly brought pursuant to the APA and ESA section 4; a negative 90-day finding is final agency action subject to judicial review. *Western Watersheds Project v. Norton*, No. CV 06-00127-S-EJL, 2007 WL 2827375, at *3 (D. Idaho Sept. 26, 2007).

In order to prevail on its claim, GLO must establish that the 90-day finding denying the Petition to Delist violated the APA, which provides that a court must hold unlawful and set aside agency action, findings, and conclusions that are: "(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; (B) contrary to constitutional right, power, privilege, or immunity; (C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; [or] (D) without observance of procedure required by law." 5 U.S.C. §706(2)(A)-(D).

An agency order is lawful only if it "considered the relevant factors and articulated a rational connection between the facts found and the choice made." *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 105 (1983) (citation omitted). The court must consider whether the agency acted within the scope of its authority, whether the agency adequately explained its decision, whether the agency based its decision on the facts in the record, and whether the agency considered the relevant factors. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 378 (1989).

Agency action is arbitrary and capricious when "the agency has relied on factors which Congress has 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." *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). A reviewing court must undertake a "thorough, probing, in-depth review" of the agency's decision and then decide whether it was "based on a consideration of the relevant factors and whether there has been a clear error of judgment." *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 415-16 (1971).

V. ARGUMENT

A. GLO Has Standing to Bring this Action

1. Constitutional Standing under Article III

Article III of the Constitution limits federal judicial power to cases or controversies. U.S. Const., art. III, § 2, cl.1. In order to state an Article III case or controversy, a plaintiff must satisfy three elements to establish standing: (1) injury-in-fact; (2) a causal connection such that the injury is "fairly traceable" to the challenged action of the defendant; and (3) a "likelihood" that the injury will be redressed by a favorable decision, as opposed to a mere speculation of redressability. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

a) Injury in Fact

GLO has suffered an injury in fact, which is an invasion of a legally protected interest that is: (1) concrete and particularized; and (2) actual or imminent, not conjectural or hypothetical. *See Lujan*, 504 U.S. at 560-61. GLO has suffered an injury in fact due to the continued, unlawful maintenance of the Warbler on the list of endangered species and, most recently, the failure of the Service to properly consider the Petition to Delist the Warbler, as required under the ESA and the Service's own petition review regulations because GLO owns property occupied by the Warbler. (McAnally Decl., ¶ 4).

The GLO is the oldest state agency in Texas, established by the Constitution of the Republic of Texas. Upon annexation by the United States, Texas retained control of its public

lands. Texas constitutionally dedicated half of these public lands to the Permanent School Fund, which is maintained for the benefit of the public schoolchildren of the State of Texas. Tx. Const. art. VII § 2. The GLO is responsible for maximizing revenues from Texas public school lands. Tex. Nat. Res. Code Ann. § 31.051. Under the Texas Constitution, proceeds from the sale and mineral leasing of public school lands flow to the Permanent School Fund via the GLO. Tx. Const. art. VII § 5(g).

Additionally, the GLO owns and maintains State Veterans Cemeteries to honor those who have served, as well as State Veterans Homes that provide care and dignity for veterans, their spouses, and Gold Star parents. (McAnally Decl., ¶ 4). The ability of the GLO to maximize revenues from Texas public school lands, and to maintain State Veterans Cemeteries and State Veterans Homes to a high standard, is undermined by the restrictions imposed due to the presence of Warblers or Warbler habitat on GLO properties. (McAnally Decl., ¶¶ 7-10 & Ex. 2 thereof).

The presence of Warblers on GLO property subjects certain GLO's actions on its property to the time consuming and costly requirements of Sections 7 and 9 of the ESA. For example, in Bexar and Kendall counties, GLO owns a 2,316.45-acre parcel of land – approximately 84.5% of which contains Warbler habitat. (McAnally Decl., ¶¶ 9-10). In order to clear or develop the property under the Service's mitigation program, GLO must replace every one acre of cleared land with three acres of Warbler habitat. (McAnally Decl., ¶11 & Ex. 2 thereof). This encumbrance on the property makes development of the property vastly more expensive and significantly decreases its market value if sold, resulting in less money for the Permanent School Fund, State Veterans Cemeteries, and State Veterans Homes. (McAnally Decl., ¶¶ 7-8, 12-15 & Ex. 3 thereof).

In fact, after conducting three studies on the presence of Warbler habitat on this property, experts concluded that the presence of Warbler habitat decreased the property's value by

approximately 35%. (McAnally Decl., ¶ 13 & Ex. 3 thereof). GLO also owns and leases 429 acres in Williamson County, approximately 5 miles east of Jonah. Warblers inhabit areas located throughout Williamson and surrounding counties. (McAnally Decl., ¶ 14).

The reduction in property value caused by the presence of Warbler habitat translates to less money available for fulfilling GLO's mission to maximize revenues from Texas public school lands for the benefit of Texas schoolchildren. (McAnally Decl., ¶ 15). Those portions of GLO's lands that have been surveyed and confirmed as occupied or potential Warbler habitat are now diminished in value and cannot be used without either risking an enforcement action by the Service or a citizen suit alleging incidental take of Warblers, incurring the expense of seeking an incidental take permit from the Service, or incurring the expense of complying with state and local measures the Service has deemed sufficient to avoid "take" of Warblers. The Fifth Circuit has recognized that the "stigma" associated with ESA-listed species and their habitats can result in decreased property values sufficient to establish injury-in-fact. *See Markle Interests, LLC v. U.S. Fish & Wildlife Serv.*, 827 F.3d 452, 463 (5th Cir. 2016), *cert. granted*, *Weyerhaeuser Co. v. U.S. Fish and Wildlife Service*, 138 S.Ct. 924 (Mem) (2018).

GLO is injured on a current and ongoing basis by the maintenance of the Warbler on the list of endangered species—which drives the continued application of the ESA regulatory regime (including potential for civil and criminal enforcement for violations of the ESA take prohibitions) and the associated valuation stigma based on constrained future land uses—where the Warbler does not warrant listing under the ESA. By virtue of the ongoing listing of the Warbler (and, specifically in this action, the Service's failure to review the Petition to Delist in accordance with the standards required by its own regulations and the ESA itself), GLO continues to be subject to regulatory burdens and thus actually and imminently injured. *See Markle Interests, LLC v. U.S.*

Fish & Wildlife Serv., 40 F.Supp.3d 744, 757 (E.D. La. 2014) (rejecting as "utterly frivolous" federal defendants' assertion that plaintiffs owning land designated as critical habitat for an endangered species lacked standing because they failed to establish actual or imminent injury sufficient to challenge the critical habitat designation), *aff'd*, 827 F.3d 452 (5th Cir. 2016), *cert. granted*, *Weyerhaeuser Co. v. U.S. Fish and Wildlife Service*, 138 S.Ct. 924 (Mem) (2018). Here, because GLO is continually burdened by unwarranted regulation and devaluation of its lands under the ESA, and because that regulation hinges upon the listing status of the Warbler, GLO has standing to contest the 90-day finding that maintains that listing status.

b) Causation

There exists a direct causal connection between GLO's injuries and the Service's conduct complained of, namely, failure of the Service to properly apply the relevant petition review criteria at the 90-day finding stage. GLO's injuries are fairly traceable to the challenged action of the Service and are not the result of the independent action of some third party not before this Court. *See Lujan*, 504 U.S. at 560-61. The Service is the federal agency charged with implementing the ESA, and GLO's injuries are directly attributable to the Service's original listing of the Warbler and the Service's erroneous 90-day finding. (McAnally Decl., ¶ 16). A direct consequence of the flawed 90-day finding is the continued listing of the Warbler that injures GLO. Therefore, there can be no question that GLO's injuries are fairly traceable to the Service's arbitrary and capricious 90-day finding. If the Service had reached a positive 90-day finding, concluding that the petition presented substantial information that delisting was warranted, the Service would have proceeded toward determining under a 12-month review whether the Warbler should be delisted. By making the 90-day finding, the Service has blocked the delisting process, thereby continuing the listing of the Warbler.

c) Redressability

It is "likely," as opposed to merely "speculative," that GLO's injuries will be redressed by a favorable decision of this Court. *See Lujan*, 504 U.S. at 561. It is likely, as opposed to speculative, that the requested injunctive and declaratory relief reversing the 90-day finding would redress GLO's injuries. The Petition to Delist demonstrates that there is substantial scientific and commercial information indicating that delisting may be warranted. A judgment in favor of GLO would at the very least require the Service to reconsider the Petition to Delist under the proper standards and to publish a new 90-day finding indicating whether delisting may be warranted, thereby removing the first roadblock to delisting the Warbler. *See, e.g.*, *Mass. v. Envtl. Prot. Agency*, 549 U.S. 497, 517-18 (2007) (redressability is met if relief will require federal agency to reconsider a procedural step connected to the substantive result); *see also Sugar Cane Growers Cooperative of Florida v. Veneman*, 289 F.3d 89, 94-95 (D.C. Cir. 2002) (same).

2. Prudential Standing

GLO's grievances fall within the zone of interests protected by the ESA, and therefore GLO is able to demonstrate prudential standing. Prudential standing is a judicially self-imposed limit on the exercise of federal jurisdiction that supplements Article III standing and requires that plaintiffs' grievances arguably fall within the zone of interests protected or regulated by the statutory provision invoked in the suit. *Bennett v. Spear*, 520 U.S. 154, 162-63 (1997). The breadth of the zone-of-interests test varies according to the provisions of law at issue and is considered "generous" under the APA. *Id.* at 163.

GLO's grievances fall within the zone of interests protected by ESA Section 4, which specifically provides that negative 90-day findings on petitions to list, delist, and reclassify species are judicially reviewable. 16 U.S.C. § 1533(b)(3)(C)(ii). Similar to the circumstances described in *Bennett v. Spear*, where the Supreme Court opined that the ESA establishes an expansive zone

of interest for parties that file an action under the citizen suit provision, here the ESA establishes an expansive zone of interest for parties that file an action challenging a negative 90-day finding. *Bennett*, 520 U.S. at 165. Accordingly, GLO meets the "generous" zone of interest test to satisfy prudential standing.

B. The Service Applied an Unlawfully Stringent Standard

"The 'substantial evidence' standard applied at the 90-day finding period is not a rigorous one. A petitioner need not present 'conclusive evidence regarding' threats to a species." *Buffalo Field Campaign v. Zinke*, 289 F.Supp.3d 103, 106 (D.D.C. 2018) (citing *Humane Soc'y of the U.S. v. Pritzker*, 75 F.Supp.3d 1, 14 (D.D.C. 2014)); *see also Ctr. for Biological Diversity v. Morgenweck*, 351 F.Supp.2d 1137, 1140 (D. Colo. 2004) ("[T]he ESA does not require . . . conclusive evidence . . . to go to the next step."); *Moden v. U.S. Fish & Wildlife Serv.*, 281 F.Supp.2d 1193, 1203 (D. Or. 2003) ("[T]he standard in reviewing a petition to delist does not require conclusive evidence that delisting is warranted."). "And in making its 90-day determination, the Service is confined to the information contained in the petition or the Service's files." *Buffalo Field Campaign*, 289 F.Supp.3d at 106 (citations omitted).

In its 90-day finding, the Service failed to take into account the substantial scientific or commercial information presented, in violation of 16 U.S.C. § 1533(b)(3)(A). By failing to consider under the proper standard the substantial scientific data presented in the Petition to Delist and the accompanying 2015 Texas A&M Study, the Service has violated not only the statutory requirement but also the implementing regulations set forth in 50 C.F.R. § 424.14(h)(1).

As described in detail above, Section 4 of the ESA sets forth the Service's obligations with respect to petitions to list or delist a species. At the 90-day finding stage, the Service must make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action *may be* warranted. 16 U.S.C. § 1533(b)(3)(A)-(B). At the 12-

month stage, which commences upon a positive 90-day finding, the Service must make a finding that the petitioned action *is or is not* warranted. *Id*.

Here, Congress has established a two-part process by which petitions to list and delist species should be subjected. First, the Service is to review a petition to determine whether it presents "substantial scientific and commercial information indicating" that the requested action "may be warranted." 16 U.S.C. § 1533(b)(3)(A). A second, more searching "review of the status of the species" commences upon a positive 90-day finding, the purpose of which is for the agency to determine whether the petitioned action actually is or is not warranted, as opposed to determining merely whether the action may be warranted. *Id*. at § 1533(b)(3)(B).

The Service's former Petition Review Regulations – the ones applicable to the 90-day finding at issue in this action[3] – defined "substantial information" as "that amount of information that would lead a *reasonable person* to believe that the measure proposed in the petition *may be* warranted." 50 C.F.R. § 424.14(b)(1) (2014) (emphasis added). The same regulations further explain that in making a determination on petitions to list or delist species, the Service must consider, among other things, whether the petition "[c]ontains detailed narrative justification for the recommended measure, describing, *based on available information*, past and present numbers and distribution of the species involved and any threats faced by the species" and "[p]rovides information regarding the status of the species over all or a significant portion of its range." *Id*. at § 424.14(b)(2) (2014) (emphasis added).

As set forth in detail *infra,* the information in the Petition to Delist unquestionably would lead a *reasonable person* to *believe* that delisting *may be* warranted. Case law reinforces the plain language and structure of the ESA, establishing that a lower standard of evidence is required to

[3] *See* supra at n.1.

reach a positive 90-day finding than is required for the Service to reach a positive 12-month finding. *See, e.g.*, *Humane Soc'y of the U.S. v. Pritzker*, 75 F.Supp.3d 1, 14–15 (D.D.C. 2014) (holding as arbitrary and capricious the agency's application of an "inappropriately high standard of evidence" at the 90-day finding stage and that evidence provided in the petition "more than meets that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted.").

Where the Service has required conclusive evidence at the 90-day finding stage, courts have routinely held the agency applied too high a burden on petitioners, in violation of the APA. *Pritzker*, 75 F.Supp.3d 1, 14-15; *see also Moden v. U.S. Fish & Wildlife Serv.*, 281 F.Supp.2d 1193, 1204 (D. Or. 2003) ("the standard for evaluating whether substantial information has been presented by an 'interested person' is not overly-burdensome, does not require conclusive information, and uses the 'reasonable person' to determine whether . . . action [to delist] may be warranted"); *Ctr. for Biological Diversity v. Kempthorne*, Case No. CV 07-0038-PHX-MHM, 2008 WL 659822, at *12 (D. Ariz. Mar. 6, 2008) (concluding that, where there is reasonable disagreement among scientists of the Service, the "may be warranted" standard is met, and the Service should proceed with a status review in which it may "employ the more-searching 'is warranted' standard" and reiterating that conclusive evidence is not required at the preliminary stage); *Ctr. for Biological Diversity v. Morgenweck*, 351 F.Supp.2d 1137, 1141–44 (D. Colo. 2004) (setting aside negative 90-day finding where the agency applied an incorrect standard to require conclusive evidence that the petitioned-for action was warranted); *Colo. River Cutthroat Trout v. Kempthorne*, 448 F.Supp.2d 170, 176–77 (D.D.C. 2006) (holding that the 90-day finding stage is intended to be a "threshold determination" and a "less searching review").

The Service has violated the APA by agency action that is arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law by failing to apply the proper standards in response to the Petition to Delist. 5 U.S.C. §706(2)(A).

A significant flaw throughout the Service's reasoning is that it has never articulated a rational connection between its primary reason for listing the Warbler (habitat destruction) and its decision not to designate critical habitat. Claiming that the Warbler is endangered while at the same time refusing to designate critical habitat for decades is both logically and legally inconsistent. The Service cannot have it both ways. Either critical habitat must be designated or the Warbler must be delisted.

"A major goal of the ESA is the recovery of species to the point at which the protection of the ESA is no longer necessary." *Safari Club Intern. v. Jewell*, 960 F.Supp.2d 17, 27-28 (D.D.C. 2013) (quoting M. Lynne Corn *et al*., Cong. Research Serv., RL31654, *The Endangered Species Act: A Primer*, at 5 (2012)). The fact that the Warbler has been listed for nearly three decades without a critical habitat designation strongly supports delisting, especially in light of the new evidence on species recovery brought to the Service's attention in the Petition to Delist. Failure to designate critical habitat for over two decades after listing the Warbler is not only a violation of the mandatory duty set forth in 16 U.S.C. § 1533(a)(3)(A), but refusing to consider delisting under the circumstances of this case is arbitrary and capricious.

The Petition to Delist pointed out substantial information that would lead a reasonable person to believe that delisting of the Warbler may be warranted. The Service, at the 90-day finding stage, is not permitted to evaluate the studies against others so long as they meet the minimum criteria:

> the 90-day standard does not allow the Service to simply discount scientific studies that support the petition or to resolve reasonable

> extant scientific disputes against the petition. Unless the Service explains why the scientific studies that the petition cites are unreliable, irrelevant, or otherwise unreasonable to credit, the Service must credit the evidence presented. In other words, if two pieces of scientific evidence conflict, the Service must credit the supporting evidence unless that evidence is unreliable, irrelevant, or otherwise unreasonable.

Buffalo Field Campaign, 289 F.Supp.3d at 110 (internal citations omitted).

The Service here did not question the basic scientific bona fides of the studies cited in the Petition to Delist, but either ignored them in favor of other studies or resolved any disputes among the literature against the granting of the petition. This was an impermissible standard applied to the Petition to Delist.

1. Warbler Population and Habitat

The Service concluded in its 90-day finding that the 2015 Texas A&M Study "does not present substantial information not previously addressed in the 2014 5-year review for this species and does not offer any substantial information indicating that the petitioned action to delist the species may be warranted." (M000449). The Service provided no credible analysis to support its summary dismissal of the 2015 Texas A&M Study.

The weaknesses in the 90-day finding are numerous. First, in its analysis of Factor A, the Service dismissed the 2015 Texas A&M Study as summarizing "information already known to the Service and discussed in the 5-year review," and praises its 2014 five-year status review as representing "the best available body of science known to the Service pertaining to the status of the warbler." (M000442). But the Service then adds that it "recognizes that the modeling studies described in the 2015 Texas A&M Study do represent the most recent and comprehensive efforts to estimate range-wide warbler habitat and population size to date." (M000442) (emphasis added). Logically, the 2014 five-year status review cannot be the "best available body of science" on the status of the Warbler when the more recent 2015 Texas A&M Study is the most "recent and

comprehensive" research on Warbler habitat and population size, which are key factors in determining the viability of the Warbler's continued listing as endangered.

The Service mentions habitat destruction multiple times throughout the 90-day finding, most prominently in its analysis of Factor A, but also in Factor C, Factor D, and Factor E.[4] This stands in contrast to the Service's refusal to designate critical habitat. How can destruction of the Warbler's habitat be a primary reason for denying the delisting petition when the Service has explicitly stated that it cannot determine which areas of Texas are critical habitat for the Warbler?

Moreover, the record shows that the Warbler population is neither endangered nor threatened. Beardmore, C., *et al*. (1995), created a Population and Habitat Viability Assessment of the Warbler for the Service (the "PVA"), which concluded that around 3,000 breeding pairs would sustain the population for around 100 years, *i.e.*, enough to preclude extinction. (R000981-R000982); *see also* Alldredge, M. (2004) (supporting this conclusion) (R000535). There is more than adequate support that this criteria has not only been met but has been substantially exceeded.

First of all, the recovery plan by the Service in 1992 anticipated that the date of recovery for the Warbler, leading ultimately to delisting, would be 2008. (R007034; R007076). The recovery plan also recognized that the Warbler had "a high potential for recovery." (R007037). Campomizzi, A., *et al*., (2010) shows that older studies, most of which focused on the central portion of the Warbler range, cannot necessarily be extrapolated across the rage, and that the species occupies a much wider range of conditions that previously thought. (R001164).

Recent studies show a wider population of Warblers, even in urban areas. Reidy, J. (2015) indicates uncertainty but shows habitat well occupied by Warblers: "This result suggests that

[4] With regard to Listing Factor B (overutilization for commercial, recreational, scientific, or educational purposes), in the 90-day finding the Service reiterated that it "does not consider overutilization to be a threat to the warbler." (M000444).

habitat within the BCP [Balcones Canyonland Preserve] is not saturated, and either could support more golden-cheeked warblers or that the population is being limited by something other than the local and landscape features we evaluated," (R004458), and indicates a stable warbler population and the ability of the birds to move around between sites over time: "This suggests that there was movement of birds within the BCP from year to year, but that annual variation in population size during our study was relatively low." (R004460); Reidy, J. (2009) (R004466) (shows that urbanization is not harming Warbler survival: ". . . survival in Austin's urban landscape . . . was similar to survival in Fort Hood's rural landscape . . . . Both landscapes likely support self-sustaining populations based on reasonable assumptions for adult survival and number of nesting attempts."). Coldren, C. (1998) found that ". . . warblers did not select for or against residential development. Once a warbler settled on a patch, placement of a territory was not based on the location of residential development next to the patch." (R001529). The study also concludes roads did not necessarily have a pronounced negative impact on Warblers: "Warbler reproductive success did not differ with transportation types. However, distance to the edge increased with increasing transportation density. … This may have been due to differences in vegetation, although I have no data to support or refute that possibility." (R001531).

Newer techniques of estimating Warbler habitat are much improved and provide a substantially greater estimate. Loomis-Austin (2008) (R003047). Recent research, including multiple independent studies—leading up to Mathewson (2012)—showed that the species was actually widely distributed and not isolated across the breeding range, with the actual population size exceeding 200,000 adult males. (R003579). Thus, the total population is well beyond the criteria established for recovery. *See also* Lindsay, D. (2008) (R003015, R003023) ("[t]he sampled sites do not appear to represent isolated lineages requiring protection as separate

management units . . .," and "effective population sizes have not yet become small enough to result in serious erosion of genetic diversity.").

In addition, Groce, J., (2010) summarized breeding habitats for the Warbler, with more recent estimates ranging from around 550,000 to 1.1 million hectares ("ha") (R002504).[5] Biologists participating in a Population and Habitat Viability Assessment Workshop in 1996 recommended maintaining a carrying capacity of 3,000 breeding pairs "to assure a probability of extinction less than 5% over 100 years" in each of the 8 Recovery Regions; they estimated that a "target habitat area" per warbler population (i.e., per Recovery Region) would consist of approximately 13,150 ha (32,500 ac) . . . ." (R002556). The study ". . . estimated warbler winter habitat . . . of 1,115,653 ha," (R002508), which far exceeds the amount of area needed to support the recommended breeding habitat area for the Warbler in Texas.

Recent studies have shown even larger estimates of Warbler habitat. Diamond, D., (2007) lists 1,771,883 ha of total breeding habitat area available for the Warbler. (R001705). Collier, B., *et al*., (2012) shows high occupancy except in the smallest patches, and that very large (11,000 ha) patches occur, and they classified ~1.6 million total ha of habitat, (R001595), concluding that decrease in patch size in the northern portion of range is due primarily but not entirely to natural environmental conditions. (R001596). Russell, F., *et al*. (2002) indicates that juniper, which is required for Warbler breeding, is not declining. (R005649; *see also* Russell, F., *et al*., (2004), R005667 (same); Andruk, *et al*., (2014) (concluding that juniper, required by Warblers for breeding, is increasing in abundance) (R000661). Peak, R. (2007) found that, based on the suggested requirement of a nest survival rate of 0.25 to 0.30 to balance juvenile and adult mortality

[5] A hectare is approximately 2.47 acres. *See* https://www.convertunits.com/from/hectare/to/acre (last visited May 10, 2018).

that "[o]n Fort Hood, nest survival estimates for the Golden-cheeked Warbler (0.32–0.37) have been above this range during the past four breeding seasons, suggesting that, at least in some years, Fort Hood functions as high-quality breeding habitat for this endangered species . . . ." (R003904).

Further, fragmentation is not of concern because the Warbler is widespread, and evolved in a heterogeneous environment. Multiple studies have shown they successfully breed in patches of 15 ha or greater. Robinson, D. (2013) found, in an urban environment (Austin, Texas), that ". . . a minimum patch-size threshold of 13.4 ha and 19.7 ha [i.e., ~30-50 acres] where territory establishment and pairing success occurred, respectively . . . ." (R005505). Thus, small patches are occupied successfully by Warblers even in an urban setting. Anders, A. (2000) shows that the Warbler exhibits very high breeding success, setting forth the following evidence: (1) "Golden-cheeked warbler pairing success (95.0%) and productivity per pair (92.6%) on Fort Hood in 2000 were high relative even to source populations of other neotropical migrant species" (R000646); (2) the Warbler breeds successfully despite differences in habitat fragmentation (patch size): "Despite differences in habitat fragmentation, patch size, and land use patterns on and around the 3 study sites used in 2000, no differences were seen in pairing success, productivity, or age structure between these sites" (R000648); and (3) the Warbler has been increasing in abundance in a well-studied part of its breeding range on Fort Hood (R000649). US Fish and Wildlife Service (2014) acknowledges that successful breeding occurs in small habitat patches: "In their breeding range, GCWA pairs have been found in habitat patches smaller than 10 hectares (ha) (24.7 acres [ac]); however, successful reproduction is more likely if patches of habitat exceed 15 ha (37 ac)." (R006778); *see also* Pruett, L. (2014) (R004150) (experienced (older) males can successfully breed in even small habitat patches).

Moreover, Baccus, J., *et al*., (2007) showed that Warblers would occupy and breed in small (~38 acre) patches even following disturbance (fire): "Fragments >15 ha in size and oval in shape with an intact, interior forest consistently provided suitable habitat for territorial males . . . ." (R000936); *see also* Butcher, J., *et al*., (2010) (R001143) ("We found evidence of a minimum patch size threshold (between 15.0 ha and 20.1 ha) of reproductive success for golden-cheeked warblers . . . . We found no minimum patch size thresholds for presence, territory establishment by males, or pair formation for [warblers] . . . ."). DeBoer, T., *et al*., (2006) shows that habitat patches between 20-100 ha have high (67%) occupancy by Warblers, R001662, that juniper and not total or oak canopy cover is central to Warbler occupying a location; juniper is increasing throughout the warbler range, (R001668), and that isolated patches are occupied by the species across the breeding range. (R001669).

Warblers have also been shown to be able to disperse large distances among small patches. City of Austin (2011) indicates that "[d]ispersal distances observed in 2011 ranged from 0.9 to 11 kilometers and occurred within macrosites (4 of 6 dispersal events, ranging from 0.9 to 3.2 km) and between macrosites (2 of 6, ranging from 3.4 to 11 km). Dispersal between macrosites included Canyon Vista to Vireo Preserve (11 km), and from Vireo Preserve to Emma Long (3.4 km)." (R001240); *see also* City of Austin (2012) ("Dispersal distances ranged from 1.2 to 16 kilometers and occurred within macrosites (2 of 7 dispersal events, ranging from 1.2 to 1.9 km) and between macrosites (5 of 7, ranging from 4.6 to 16 km).") (R001377); City of Austin (2013) ("Dispersal distances ranged from 1.6 to 14.7 kilometers and occurred within macrosites (1 event of 1.6 km) and between macrosites (4 events, ranging from 6.8 to 14.7 km)," (R001290).

If that were not enough, Magness, D. (2006) shows that because of the natural fragmentation of the landscape, Warblers would be expected to be adapted to fragmentation

overall: "Our results suggest that golden-cheeked warblers may be less sensitive to fragmentation than they are to overall habitat loss, which may be due to natural habitat heterogeneity related to the variable terrain," (R003545), and that on the broad, landscape scale, it is not fragmentation per se that matters but rather the amount of woodland available overall: "While this species has some very specific and narrow requirements for nesting habitat, it appears that an overriding influence on habitat occupancy is the amount of juniper–oak woodland in an area of up to 200 ha surrounding a point (or patch) of interest." (R003550). Further, McFarland, T. (2012) shows that fragmentation per se is not necessarily a negative factor but depends on what is being fragmented: "Although fragmentation of habitat is seldom desirable for the warbler, fragmentation of large patches may not always decrease the occupancy probability of resulting patches. For instance, if habitat fragmentation occurs in a large area of habitat and results in large patch fragments (>160 ha), the predicted occupancies of the new patches may not decrease significantly from the original occupancy value, supporting the idea of a patch-size threshold . . . ." (R003603).

And recent research has shown Warblers breed successfully in patches of much less tree cover than originally seen because of the limited scope of early studies. Farrell, S. (2012) conducted a field experiment for Warblers and found that "[p]airing and reproductive success of males was not correlated with canopy cover, as commonly thought. . . . These results suggest the range of habitat within which birds can perform successfully may be greater than is typically observed." (R002147). Klassen, J., *et al*. (2012) found "that warblers will occupy and successfully reproduce in areas with canopy closure as low as 15% and only 3% oak composition," showing that Warblers occupy a much wider range of habitat conditions than previously acknowledged. (R002827). Lopez, R. (2012) shows that Warblers are able to breed successfully despite thinning of woodland understory. (R003121). Morrison, M.L., *et al*., *The Prevailing Paradigm as a*

Hindrance to Conservation (2012),[6] found that the literature shows that Warbler habitat is not more fragmented now that it was historically: "…the distribution of woodlands and grasslands in the Hill Country (an area of approx. 2,000,000 ha and covering about two-thirds of the warbler's breeding range) and estimated that about 55% of the area was historically woodland or forest, compared with a current estimate of 57%." *See* Appendix 1 at 3. It also summarized recent literature showing that the Warbler occupies areas with much less canopy cover that previously acknowledged, and work ". . . has demonstrated that successful breeding regularly occurs in sites with <35% canopy cover," *id*., and also noted that the original federal listing relied heavily on a report by Wahl, *et al*. (1990), which made the (now known to be inaccurate) conclusion that that two-thirds of Warbler habitat occurred in "rapidly changing urban counties in the eastern Edwards Plateau," *id*.

Thus, because the Petition presents substantial scientific or commercial information indicating that delisting *may* be warranted, the Petition to Delist should not have been denied. *See* 16 U.S.C. § 1533(b)(3)(A)-(B). The number, breadth, and depth of the studies, as summarized above, surely would lead a "reasonable person to believe" that the Petition should have been granted. *See* 50 C.F.R. § 424.14(b)(1). The Service discounted the studies cited in the Petition to Delist by referring to competing studies whose interpretation the Service preferred. (M000442-M000443). This is unacceptable at the 90-day finding stage, where "if two pieces of scientific evidence conflict, the Service must credit the supporting evidence unless that evidence is

[6] Although this study is reproduced in the AR, for reasons unknown to the Plaintiff GLO it is not consecutively Bates-numbered as are the other studies in the record. The study may be found as a separate PDF listed alphabetically in the certified record under the primary author's name, "Morrison." However, because Bates numbers for the study were not included by the government, Plaintiff GLO has reproduced the study as an Appendix hereto, for the convenience of the Court. Accordingly, the citations to the Morrison M. L. *et al*, (2012) study reference the specific page numbers as set forth in the Appendix.

unreliable, irrelevant, or otherwise unreasonable to credit." *Buffalo Field Campaign*, 289 F.Supp.3d at 110; *see also id.* at 110-111 (noting that "the Service appears to have taken it upon itself to resolve a disagreement among reasonable scientists . . . The Service thereby applied an inappropriately heightened standard to the evaluation of Buffalo Field's petition," and discussing how the Service in that case "simply picked a side in an ongoing debate in the scientific community, which is improper at the 90-day finding stage. The Court need not defer to an agency's application of the improper legal standard."). Here, the Service simply picked a side without providing justification that the numerous studies cited in the Petition were in any way "unreliable, irrelevant, or otherwise unreasonable to credit." *Id.* Accordingly, because the 90-day finding applied the wrong standard in evaluating the scientific evidence regarding the current success and clear recovery of the Warbler population, it must be vacated. The Service's denial of the Petition on other grounds fares no better.

2. Predation

In its analysis of Listing Factor C (disease or predation), the Service states that the claim of the Petition to Delist that predation does not constitute a significant threat to the continued existence of the Warbler is refuted by the 2014 five-year status review, which concluded that urbanization and habitat fragmentation "have likely resulted in increased rates of predation of warbler nests by a wide variety of animal predators, especially rat snakes." But the 2014 five-year status review merely lists animals which have been known to prey on warbler nests, which the Service acknowledges is a "natural occurrence in [Warbler] habitat," but goes on to extrapolate from these perfectly natural instances of predation the unsupported contention that increased urbanization leads to higher than normal levels of predation. (R006785). There is no concrete support given for this analytical leap, which the Service then relied upon in its denial of the delisting petition.

In fact, Reidy, J. (2009) found Warbler breeding success high despite natural snake predation: "Daily nest survival was 0.971 (95% CI: 0.959–0.980). We observed six predations of females by snakes over 781 observation days during nest days 3–21, resulting in a daily female predation rate of 0.008 (95% CI: 0.003–0.017)." (R004485). Stake, M. (2003) shows that Warblers are subject to the usual range and variation in nest predation as expected for a small songbird: "Snakes were the most frequent predators of golden-cheeked warbler eggs and nestlings, but we suggest that the relative importance of predator types for a bird species may vary regionally, depending on habitat type, landscape composition, or geography…," (R005773), and notes that other predators of Warbler nests were infrequent. (R005774-5776); *see also* Arnold, K., *et al*., (1996) (finding no effect on Warbler habitat range by avian predators) (R00787). A subsequent study, Stake, M., *et al*. (2004), indicated that Warblers are not showing any unusual signs of nest failure, (R005831), and Butcher, J., *et al*., (2010) "failed to find evidence that cowbird parasitism or arthropod biomass were limiting factors." (R001143). Thus, the evidence regarding predation does not support the Service's denial of the Petition.

3. Adequacy of Existing Regulatory Mechanisms

In its analysis of Listing Factor D (adequacy of existing regulatory mechanisms), the Service contended that "an estimated 29 percent of existing breeding season habitat was lost between 1999-2001 and 2010-2011." (M000446). The Service found that existing regulatory mechanisms like the Migratory Bird Treaty Act of 1918 and the Texas Endangered Species Act were not sufficient to protect the Warbler, maintaining that the 2014 5-year status review discussed that "while these regulations do provide some protections for the birds neither 'prohibits habitat destruction, which is an immediate threat to the warbler." (M000445). However, as already pointed out above, the Service has refused to designate critical habitat for the Warbler, making the Service's disparagement of those provisions inexplicable. Additionally, the Service admits in the

90-day finding that it did not consider existing long-term land protections like wildlife preserves and habitat conservation plans in its consideration of Factor D in the 5-year review, though it refers to its consideration of those efforts under Factor A in that review. (M000446). But the 2014 5-year status review in fact did not provide a meaningful analysis of the efficacy of the other regulatory programs, and the 90-day Finding did not provide any meaningful support for the conclusion reached on this Factor. (R006784).

4. Other Natural or Manmade Factors Affecting the Warbler

Finally, in its analysis of the catchall Listing Factor E (other natural or manmade factors affecting the species' continued existence), the 90-day finding failed to address a number of studies adverse to its conclusion, notwithstanding the fact the studies were pointed out in the Petition to Delist. Specifically, the petition cited to the Groce study on the effects of land conversion and Warbler population expansion, as well as the work by Robinson (2013) (R005467), Butcher, *et al*. (2010) (R001143), Magness, *et al*. (2006) (R003545), Coldren (1998) (R001438), Arnold, *et al*. (1996) (R00786), Campomizzi, *et al*. (2012) (R00156), and a 2013 study by Peak and Thompson (2013) (R003908). *See* M000070-M000071. All of those studies supported the relief sought by the Petition to Delist. Nevertheless, the Service conveniently did not address the substantial evidence presented in such studies regarding Factor E.

The Service stated that "habitat fragmentation, habitat degradation, inappropriate habitat management practices, and excessive noise all contribute to reductions in overall warbler habitat quality and present a real and significant threat to the long term viability of the species," along with oak wilt and recreation. (M000447-000448). In discussing each of these threats, the Service stated that they each have the potential to significantly affect Warbler habitat, but did not cite to any examples of instances where this actually has been the case. For instance, the Service states that "catastrophic wildfires have the potential to significantly diminish occupancy by Warblers in

previously occupied habitat." (M000447-M000448). While this may be true as an abstract proposition, nowhere does the Service state that wildfires, or any of the other natural or man-made threats, have actually impacted Warbler habitat in any way. In fact, without being able to determine where the Warbler's critical habitat exists, the Service's conclusions are speculative at best.

The issue of habitat, including fragmentation and patch size, has already has been addressed in the discussion above; as with that issue, there is substantial evidence in the record undermining the Service's contentions that fire, noise, oak wilt, or recreation are threats to the Warbler. For example, Reemts, C. (2008), was cited by the Service in its 90-day finding for the proposition that fire was a threat to the Warbler, (M000447), but that study shows that while Warbler numbers decrease after a fire, they appear to move elsewhere until the trees re-grow: ". . . overall golden-cheeked warbler populations on Fort Hood were not greatly affected by the fires . . . perhaps because the birds relocated to available habitat elsewhere on post . . . ." (R004443). Further weakening the Service's contention is Yao, J., *et al*., (2012), which shows the value of fire in actually *promoting* oak development for the Warbler: ". . . we also observed that high-intensity fire was related to higher oak recruitment which has the potential to sustain GCW habitat for the future." (R007503).

Ortega, C. (2012) was the sole authority cited by the Service in its 90-day Finding for its claim that noise could be a threat to the Warbler. (M000448). "This review provides general background information, updates on the most current literature, and suggestions for future research that will enhance our comprehensive knowledge and ability to mitigate negative effects of noise." (R003871). But the Ortega study presented no information on the Warbler specifically, and evidence against the proposition that noise is a threat to the Warbler includes Lopez, R. (2012)

(concluding, in an experiment on the impacts on Warblers of military training, that "[i]n general, there were no patterns in the noise, movement, or song data to suggest that GCWAs were adjusting their vocalizations to increases in ambient noise."), (R003121), and Lackey, M. (2012) (finding ". . . the majority of Golden-cheeked Warblers have habituated to road and construction noise," (R002945), and that "[t]he broadcast-unit experiment showed that territories located near broadcast units had similar year-to-year shifts in territory locations as a random sample of territories not located near broadcast units.") (R002952).

The Service's contention that oak wilt was a threat to the Warbler is also refuted by substantial evidence in the record. Appel, D., *et al*., (2010) found that oak wilt did not appear to be a serious threat to Warblers: "Only a small proportion of the oak wilt centers (12 percent) were located in designated GCW habitat," (R00737), and ". . . oak wilt appears to fall in areas where oak densities are greater than those found in preferred GCW habitats." (R00746). Stewart, L., *et al*., (2014) found that paired male Warblers that do nest in oak wilt affected stands "fledged young as successfully as paired males who only used unaffected forest." (R005840).

The 90-day finding fares no better in its contention that there was no substantial evidence that refuted findings that recreation was a threat to the Warbler. Peak, R. (2003) studied the potential impacts of mountain bike recreation on Warblers, and "did not find a difference in abundance or demography of the golden-cheeked warbler . . . ," (R003893), and the City of Austin (2012) commented on a pilot study of the influence of mountain bikes on Warbler breeding that "[m]ajor limitations of the pilot study include small sample sizes (low numbers of warblers) and lack of quantitative data on recreational activities (including number of recreational users per day, type(s) of activities, pathways taken through the BCP tracts, etc.)." (R001371).

In short, there is more than enough evidence in the record to demonstrate that a "reasonable person [would] believe" that the Petition should be granted. *See* 50 C.F.R. § 424.14(b)(1). The Service failed to examine the relevant data and articulate a satisfactory explanation for its action, including a rational connection between the facts found and the choice made, especially in light of the Service's failure for almost three decades to designate critical habitat. *See Motor Vehicle Mfrs.*, 463 U.S. at 43. "[W]hen a court reviewing agency action determines that an agency made an error of law, the court's inquiry is at an end: the case must be remanded to the agency for further action consistent with the corrected legal standards." *County of Los Angeles v. Shalala*, 192 F.3d 1005, 1011 (D.C. Cir. 1999).

VI. CONCLUSION

For the foregoing reasons, the 90-day finding should be vacated, and this matter should be remanded to the Service for reconsideration of the Petition to Delist under the correct standard.

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CERTIFICATE OF SERVICE

I hereby certify that on May 15, 2018, I electronically filed the foregoing with the Clerk of the Court for the United States District Court for the Western District of Texas by using the CM/ECF system, which will serve a copy of same on the counsel of record.

/s/Theodore Hadzi-Antich
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APPENDIX

Special Section

The Prevailing Paradigm as a Hindrance to Conservation

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ABSTRACT We review the history of population and ecological knowledge of the golden-cheeked warbler (*Setophaga chrysoparia*). We highlight how incomplete information on distribution and abundance has led to substantial misunderstanding on species status and associated conservation goals. We discuss how once a paradigm is established, subsequent studies unconsciously fortify accepted understanding regardless of the paradigm's accuracy. For the golden-cheeked warbler, understanding of the species at the time of listing in 1990 was based on either incorrect or untested assumptions of species distribution within available habitats. Adhering to untested assumptions led to development of priorities for research and management that were well-intentioned but largely misguided. Ample information on the distribution of the warbler's habitats existed, however, which should have encouraged questions into the basis of population conditions when developing management prescriptions. Current knowledge clearly indicates that a new paradigm for the warbler is needed, that being one of a widely distributed species that is preadapted to occur within a variety of environmental conditions. © 2012 The Wildlife Society.

KEY WORDS distribution, golden-cheeked warbler, habitat occupancy, metapopulation, scientific paradigm, *Setophaga chrysoparia*, subpopulation.

A fundamental concept in ecology is that of the biological population, or a group of organisms of the same species that occur within a specific space at a particular time and are able to interbreed with each other. In conservation planning and management, understanding the structure of a population is critical (Morrison 2009:18–21) because that structure defines what management activities may or may not create beneficial conditions for the species of interest. Given the importance of the population concept to conservation actions, we are concerned that the biological population concept is one of the most frequently misunderstood, and, thus, misapplied concepts in ecology. Ambiguity in the understanding and application of the population concept likely derives from multiple definitions in the literature. Multiple definitions provide flexibility in application of the population concept to ecological research; however, it remains the responsibility of the author to justify the definition of populations for their study system (see review in Waples and Gaggiotti 2006). Scientists tend to follow popular paradigms by assigning population designations without respect to species' distribution or variation in habitat use or demographic rates across a species' range (Morrison 2012).

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A scientific paradigm develops when a majority of people follow a common set of rules or norms that include 1) what was to be observed, 2) the types of questions that were to be asked, 3) how these questions were to be structured, and 4) how the results were to be interpreted (Kuhn 1996). Paradigms in the design, analysis, and interpretation of research results are perpetuated through the disinclination of peer reviewers, who often adhere to similar paradigms, to question the basic tenets from which various assumptions associated with prevailing paradigms are embedded. As such, the majority of published studies naturally confirm the paradigm, making negative or disputed results appear unsupported. Results that do not uphold a prevailing paradigm are often rejected for publication regardless of the appropriateness of the study design, analysis, and interpretation. In these situations, beliefs about the nature of systems that are false or misapplied can lead to management practices that are at best neutral or at worse harmful to the very entities we are trying to conserve (Morrison 2012).

One example of a commonly misapplied concept in population biology is that populations have a metapopulation structure, typically composed of discrete populations (subpopulations) with independent demographics but that interact through dispersal or migration (Levins 1969, Hanski and Simberloff, 1997). While the degree of demographic independence necessary for defining subpopulations is often unclear and possibly species-specific, the necessity

for some level of population differentiation that results in local extinction and re-colonization is evident (Levins 1969, Harrison and Taylor 1997, Esler 2000). Differentiations in demography arise through geographic separation during the annual cycle wherein deterministic or stochastic events (e.g., habitat loss or fragmentation; Harrison and Taylor 1997) cause changes in population vital rates for a potentially interbreeding population. For this reason, metapopulation theory is embedded within literature on habitat fragmentation, often under the presumption that existing habitat patches represent local populations with independent within-population processes and among-population movements across an inhospitable landscape (Hanski and Simberloff, 1997). This broad application has created a prevailing paradigm in ecology and conservation biology that species with a fragmented distribution (i.e., patchily distributed), particularly those that are habitat-specialists or impacted by habitat fragmentation, often occur as multiple populations (e.g., see review in Mills 2007:211–219). However, misapplication of the metapopulation concept due to limited understanding of species-specific distributions and dynamics can distract from effective species management and conservation and lead to inaccurate assumptions regarding species viability assessments (Harrison 1994).

CASE STUDY: THE GOLDEN-CHEEKED WARBLER (*SETOPHAGA CHRYSOPARIA*)

Golden-cheeked warblers (*Setophaga chrysoparia*, hereafter warbler) are habitat specialists that spend the spring and summer only in central Texas, USA. Warblers use mixed woodlands of Ashe juniper (*Juniperus ashei*) and oak (*Quercus* spp.) for breeding habitat. Habitat loss and fragmentation, especially in the eastern portion of their range, prompted concerns about population declines and the federal listing of this species as endangered in 1990. For the past 20 years, research on warblers has revolved around the paradigm that they are rare and that their habitat is highly fragmented, resulting in discussions referring to the warbler existing within multiple, distinct populations. Through several examples, we show how well-intentioned and technically correct studies have perpetuated certain concepts about this species due to misapplication of spatial population structure, an inadequate understanding of species distribution, or insufficient knowledge of the species' demographics. Below we show that previous evaluations and discussions of the warbler have been driven primarily by data gathered in a few locations rather than across its breeding range. Although our examples focus on one species and the metapopulation concept as applied, the issues we raise have broad implications for designing and conducting studies and subsequently using results to craft management strategies and conservation goals (Morrison 2012).

EVOLUTION OF THE GOLDEN-CHEEKED WARBLER

The golden-cheeked warbler is considered by many to be a member of the black-throated green warbler (*S. virens*) species group, all of which are thought to share a common ancestor similar to the black-throated green warbler. Members of the group were hypothesized by Mengel (1964) to include the golden-cheeked, black-throated gray (*S. nigrescens*), hermit (*S. occidentalis*), and Townsend's (*S. townsendi*) warblers. Mengel (1964) outlined a scenario under which a predecessor of the black-throated green warbler, which had spread across much of the northeastern and north-central portions of what is now the USA–Canadian border during early stages of the Pleistocene era, became divided into isolated locations during the advance and retreat of ice. Subsequently these isolated groups evolved into our modern species within this species group. The close relationship between members of this group is shown by the frequent hybridization in the western United States between the hermit and Townsend's warblers (Morrison and Hardy 1983, Rohwer and Wood 1998). The specific species-to-species relatedness, and timing of splitting into individual species, has been refined through genetic analyses that have led to alterations of Mengel's original hypothesis (Bermingham et al. 1992, Klicka and Zink 1997, Lovette and Bermingham 1999). Foraging behavior, nest placement, clutch size, and general behavior are also similar among members of this species group, as would be expected for birds of similar origin and morphology (e.g., Guzy and Lowther 1997, Ladd and Gass 1999, Morse and Poole 2005).

Although it did not affect relationships within the black-throated green warbler species group, the taxonomic relationships of warblers recently were modified by the American Ornithologists' Union (Chesser et al. 2011). The genus *Dendroica*, in which species in the black-throated green warbler group were classified, was subsumed into the genus *Setophaga*; *Dendroica* no longer is recognized as a distinct genus. In summary, it is clear that the golden-cheeked warbler is closely related to a number of other warblers that, collectively, are widely distributed across the United States and into Canada in a variety of habitats during the breeding season.

WARBLER HABITAT: FRAGMENTED AND DECLINING, OR EXPANSIVE AND SUSTAINING?

One of the prevailing assumptions of golden-cheeked warblers concerns the distribution of their habitat and whether current habitats are more or less fragmented than those in the past. The distribution of mixed woodlands immediately prior to the time of European settlement has been debated and may not be accurately resolved in the future (Diamond and True 2008). Historical records regarding the extent of mixed woodlands are conflicting, with some describing the historical Edwards Plateau as a mosaic of grasslands and savannahs with thick cedar brakes common in canyons and hill slopes (Smeins 1980, Smeins and Fuhlendorf 1997), whereas others describe mostly savannah or mostly scrub forest with little savannah (Ford and Van Auken 1982). Several reports have suggested or documented a decrease in mixed woodlands on the Edwards Plateau since European settlement (Pulich 1976, Wahl et al. 1990, Keddy-Hector

et al. 1992), while other interpretations of aerial and satellite imagery suggest that the general range and abundance of mixed woodlands has not changed much in recent history except for colonization of former grasslands (Smeins et al. 1997, Diamond and True 2008). Diamond and True (2008) modeled the distribution of woodlands and grasslands in the Hill Country (an area of approx. 2,000,000 ha and covering about two-thirds of the warbler's breeding range) and estimated that about 55% of the area was historically woodland or forest, compared with a current estimate of 57%. Woodlands were shown to have decreased in some areas, while increasing in other areas due to a variety of causes (e.g., fire suppression, urban development).

Although mixed woodlands are patchily distributed throughout Texas, all estimates of the extent of warbler habitat show widespread coverage throughout central Texas. Specific estimates of the extent of warbler habitat in Texas vary from about 120,000 ha to 1.7 million ha (see reviews in Groce et al. 2010 and Mathewson et al. 2012). Differences in habitat estimates were based, in part, on the data used to represent woodland coverage, along with the definitions adopted by various researchers to define suitable habitat. Throughout the 40-year span of research on the warbler, the debate essentially has revolved around the degree of habitat specialization, and, ultimately, thresholds for reproduction derived from various habitat metrics. Most estimates of habitat extent are based on the assumption that warbler occupancy and productivity are positively correlated with habitat patch size, interior patch size, and percent canopy cover (i.e., measurements that represent intact habitat; DeBoer and Diamond 2006). Generally these relationships hold true, but it is the assumed range (i.e., specificity) of these conditions that results in disparity of habitat estimates, incorrect identification of warbler habitat, and potential mismanagement of the warbler.

The federal listing of the warbler and the subsequent U.S. Fish and Wildlife Service (USFWS) recovery plan (USFWS 1992; see below) relied extensively upon a report released by Wahl et al. (1990). Although we now know that the majority of the conclusions from Wahl et al. (1990) were inaccurate, several assumptions originating from this work continue to define research assumptions and management directives with regard to the warbler. For example, the conclusion that two-thirds of warbler habitat occurred in "rapidly changing urban counties in the eastern Edwards Plateau" (Wahl et al. 1990:43) led to the overall belief that warbler habitat was declining and fragmenting at dramatic rates. Furthermore, statements by Wahl et al. (1990) that concerned the amount and degree of habitat fragmentation surrounding Travis County and Fort Hood Military Reservation likely contributed to subsequent studies that made assumptions concerning the suitability of woodlands between these 2 regions as habitat (USFWS 1996, Alldredge et al. 2002, Horne et al. 2011). However, recent work (Collier et al. 2012, Mathewson et al. 2012) that sampled potential habitat across the warbler's range showed that high rates of patch occupancy and density prevailed.

Specifications of warbler habitat, such as the minimum patch size or canopy cover, originated from various studies on the warbler in few locations (Wahl et al. 1990, Coldren 1998) and they failed to capture the much wider range of conditions occupied by successfully breeding warblers that we now know occurs (Butcher et al. 2010, Klassen et al. 2012). For example, management guidelines developed by Texas Parks and Wildlife Department, based primarily on information from Travis County and Fort Hood Military Reservation, indicate that the warbler prefers habitats with $\geq$50% (preferably $\geq$70%) canopy cover (Campbell 2003). However, research in the southwestern portion of the warbler's range has demonstrated that successful breeding regularly occurs in sites with <35% canopy cover (Klassen et al. 2012). A recent review of warbler research indicated that few generalizations could be gleaned from the current literature on population responses to habitat characteristics because of a paucity of data from a large portion of the warbler's range, namely the west and southwest (Groce et al. 2010).

One of the paradigms concerning warbler habitat, which is inherently incorporated into assumptions of population structure, is that the habitat is fragmented to such a degree to create isolation within the species' distribution (Lindsay et al. 2008, Athrey et al. 2011). This perception has been repeatedly reinforced in the warbler literature and management directives, regardless of the evidence contradictory to early assumptions. As noted by Klassen et al. (2012), we should not be surprised that warblers can regularly occupy and successfully breed in a wide range of conditions because the environment in which they evolved would have been constantly changing due to longer term changes in climate and shorter term changes in fire, drought, and other natural conditions. What we formerly considered "marginal" habitats (i.e., 35% cover) was based on an incomplete—although not incorrect per se—understanding of warbler ecology.

WARBLER POPULATION ECOLOGY: NOBLE INTENT, INACCURATE ASSUMPTIONS

In ecology, we often find that concepts about how animals may be distributed in time and space are assumed valid based on limited data from localized studies using unplanned sampling designs (Elith et al. 2006). As reviewed by Morrison (2012), most studies of animal ecology fail to properly discuss, let alone define, properties of the population(s) under study. The ramifications of such a failure can have substantial negative impacts to the gaining of reliable knowledge and subsequent management prescriptions. In the case of the golden-cheeked warbler, misunderstandings concerning the distribution of warbler habitat have promoted the perception that habitat is fragmented across the breeding range. However, as we discussed above, most of these habitat delineations were based on limited data regarding suitable warbler habitat. This paradigm that warblers exist in fragmented, sparsely distributed habitat has limited the strength of inferences made by a variety of authors on population dynamics, trajectory, and sustainability.

Soon after the warbler was listed as endangered, USFWS developed a recovery plan listing specific goals and objectives leading to species protection and possible delisting (USFWS 1992). In the plan, USFWS delineated 8 recovery regions across the warbler's breeding range and one of the criteria for delisting was to protect sufficient breeding habitat "to ensure the continued existence of at least one viable, self-sustaining population in each of eight regions . . ." (USFWS 1992:iv). Furthermore, they stressed that, "fundamental to the recovery strategy is the creation of a system of protected populations scattered over the present breeding distribution" (USFWS 1992:38). As described below, subsequent population viability analyses (PVAs) assumed warblers were divided into multiple populations as a way to address the recovery plan's request of determining "the population sizes and arrangements necessary to attain and maintain viability" in each recovery region (USFWS 1992:38). We believe that the notion that golden-cheeked warbler occurs in multiple populations originated from the language within this recovery plan. The intention of USFWS was to designate specific units within which to manage the warbler across the range, yet the concept of several separate populations was adopted and perpetuated in subsequent research endeavors.

U.S. Fish and Wildlife Service (1996) conducted a simulation exercise to evaluate the long-term viability of golden-cheeked warblers and to identify potential demographic parameters where additional information was needed. The approach assumed isolation of warbler subpopulations (hence, no between sub-population dispersal) and the resulting population viability estimates were at the recovery region level as per requirements in the recovery plan. This was the first suggestion within the literature that golden-cheeked warblers exhibit "metapopulation" structure, and in fact the report recommends that a spatially explicit PVA be developed that models dispersal between habitat patches, thus suggesting that future works should consider metapopulation structure and focus on dispersal studies (e.g., emphasize banding of birds).

Alldredge et al. (2002) and Alldredge et al. (2004) built on the USFWS (1996) model and conducted a PVA for the warbler wherein they assumed that "the fragmented landscape of publicly managed golden-cheeked warbler breeding habitat creates a potential metapopulation dynamic" (Alldredge et al. 2002:2). That is, they hypothesized a metapopulation structure based on the availability of public lands within their study area. Although the authors acknowledged that the model assumed a metapopulation structure and was limited in terms of demographic data (e.g., dispersal), the concept that warblers are organized in multiple populations, and thus that the metapopulation theory applies to this species, took hold in the warbler literature (Lindsay et al. 2008, Athrey et al. 2011, Horne et al. 2011).

Subsequently, Horne et al. (2011) analyzed potential changes in population viability of the warbler due to changes in the distribution and characteristics of habitat patches. They made the same assumption as Alldredge et al. (2004), in that warblers were structured as a metapopulation. Although we are not criticizing the analytical approach used by Horne et al. (2011), their inferences hinge on inappropriate assumptions regarding the biological population concept and suffer from a lack of knowledge about both the species and system under study. For example, in discussing the breeding distribution of the warbler, Horne et al. commented that, despite a large number of birds that occur on Fort Hood, "a viable population . . . is not guaranteed" (Horne et al. 2011:2479). This assumes that birds occurring within the jurisdiction of Fort Hood must form a "viable population," which by definition assumes that a biological population exists and is largely isolated from other such populations. There are, however, a large number of woodland patches occupied by the warbler beyond the borders of Fort Hood and throughout the ecoregion (Butcher et al. 2010; Collier et al. 2010, 2012). In addition, as noted above, although mixed woodlands are not contiguous in the area, woodland patches are not separated or isolated by large distances throughout most of the breeding range (Collier et al. 2012). This lack of physical separation violates a fundamental assumption of the metapopulation concept (Hanski and Simberloff, 1997), especially when considering that the species is a long-distance migrant (see below).

Regardless of the distribution patterns exhibited by warbler habitat patches, the critical process for determining population structure, and that which a metapopulation designation depends on, is movement patterns (Levins 1969, Hanski and Simberloff, 1997). For non-migratory species, the concept of habitat corridors and connectivity is logical, in that an individual might require specific habitat in order to move from one point to another. However, it has been long acknowledged that detecting population structure in migratory birds is challenging unless there is discrete geographic separation within the species at some point during their annual cycle (Esler 2000). For example, a metapopulation structure might exist if migratory birds winter on separate islands or different latitudes such that local factors create differentiation in vital rates. For golden-cheeked warblers, little is known about their wintering distribution and studies on the breeding ground acknowledge the lack of information available on movement patterns, such as natal and breeding site dispersal or emigration among habitat patches (see review in Groce et al. 2010). Regardless, limited dispersal distances would not be expected to compromise the viability of a species inhabiting a widely distributed vegetation type. However, this has not hindered several authors from making unsupported statements that golden-cheeked warblers have limited dispersal ability in order to support their research assumptions, as in recent PVA assessments (USFWS 1996; Alldredge et al. 2002, 2004; Horne et al. 2011) and the conservation genetics literature (Lindsay et al. 2008). Additionally, without relying on the assumption that breeding dispersal is zero, there is no evidence from genetic studies that warblers should be separated into multiple populations (Lindsay et al. 2008, Athrey et al. 2011). For example, Athrey et al. (2011) stated that the genetic differentiation observed in their study is "expected when habitat becomes fragmented and remnant populations become isolated on patches of preserved habitat—the current situation with *S. chrysoparia*" (Athrey

et al. 2011:1351). However, there is no evidence in the scientific literature that any part of the warbler population is currently isolated, which is not surprising because few studies on migratory birds have supported a metapopulation structure based on genetics information (Veit et al. 2005, Mayer et al. 2009). As reviewed by Haig et al. (2011), migratory species tend to show low levels of genetic structure because their ability to fly makes them good dispersers. These dispersal abilities usually minimize genetic differentiation within such species. Further, habitat fragmentation has not been found to have much detectable effect on genetic structure in most recent avian studies (Haig et al. 2011).

Although Collier et al. (2012) and Mathewson et al. (2012) represented the first range-wide assessments of the distribution and abundance of the warbler, there were earlier papers that should have alerted scientists that the paradigm about golden-cheeked warblers being rare and fragmented was likely incorrect. As summarized by Mathewson et al. (2012; table 1), estimates of potential carrying capacity have ranged as high as 228,426 individuals in earlier studies. Thus, we can see how the history of studies on the warbler, as reviewed above, show that a prevailing paradigm can lead to recommendations for further research based on inappropriate assumptions. Unfortunately, this practice is widespread in ecology and can substantially retard the pace at which new information is gathered and new ideas become acceptable to the scientific community (Morrison 2012).

CONCLUSIONS

It is evident that the golden-cheeked warbler is widely distributed throughout its breeding range (Collier et al. 2012), is breeding successfully in a variety of habitat conditions (Butcher et al. 2010, Klassen et al. 2012, see also Campomizzi et al., this section), and is more abundant than previous estimates have indicated (Mathewson et al. 2012). Within those areas with the longest record of research, the warbler has been shown to occur at a roughly stable abundance and shows a level of breeding success expected for similar species (Groce et al. 2010). Additionally, there is scant evidence that habitat or other resources are limited outside of the Texas breeding range. We are not implying that there are no potential threats that could negatively impact the warbler's distribution and abundance; however, given current estimates of habitat and abundance, their situation may not be as dire as it was originally assumed.

Evidence from recent statewide surveys of the warbler, when combined with the genetic evidence showing no discernible subpopulations, indicate that the warbler exists as a single population across its breeding range. Rather than forcing a metapopulation structure on the species through maintaining a viable population in each recovery region, we suggest that the warbler can be maintained across the current breeding range given that reasonable steps are in place for maintaining landscape coverage of mixed woodlands in a variety of ages, sizes, and conditions. For example, maintaining patches of mixed woodland across the landscape, and encouraging retention of larger patches, would serve as the foundation for a conservation plan that involved both public and private land managers. Although the absolute amount of woodland available for warbler occupancy has declined during the past approximately 20 years (Groce et al. 2010), most of that loss has been concentrated around expanding urban centers (e.g., Austin, San Antonio). A conservation plan that ensures maintenance of an adequate distribution of habitat across the breeding range is feasible given the large amount of potential habitat available to the species, and the apparent fact that not all suitable habitat is currently occupied (e.g., results of conspecific attraction studies; Farrell et al. 2012).

A paradigm is generally defined as a set of assumptions, concepts, and values that constitutes a way of viewing reality for the group of people that shares them, including in an intellectual discipline. A paradigm is difficult to change because it gains strength and inertia as more and more people come to accept it. It is not enough to make assumptions on the structure of a population; rather, conducting rigorous science requires that assumptions be thoroughly explored and the likelihood that the assumption actually applies needs to be conducted (i.e., due diligence). The paradigm that the golden-cheeked warbler is a rare and fragmented species is based on information now 2 decades old. More recent and thorough information indicates that a new perspective of the warbler is needed, that being one of a widely distributed and abundant species that is adapted to occupy a number of environmental conditions.

ACKNOWLEDGMENTS

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Associate Editor: Brennan.

IN THE UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

GENERAL LAND OFFICE OF THE STATE OF TEXAS, Plaintiff, v. UNITED STATES FISH AND WILDLIFE SERVICE, et al Defendants.	No. A-17-CA-00538-SS

DECLARATION OF MARK MCANALLY
IN SUPPORT OF PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT

I, Mark McAnally, hereby declare as follows:

1. I am over the age of eighteen (18) and am competent to testify in this matter. I have personal knowledge of the following facts and if called upon to do so could competently testify to them under oath. As to those matters which reflect a matter of opinion, they reflect my personal opinion and judgment upon the matter.

2. I am the Deputy Director/Chief Appraiser for General Land Office of the State of Texas ("GLO") and I am authorized to sign this declaration on its behalf.

3. On March 1, 2017, GLO provided the United States Fish and Wildlife Service (the "Service") and its officials with a 60-day written notice of violation of the Endangered Species Act, the Service's implementing regulations, and the Administrative Procedure Act. A true and accurate copy of this document is attached as Exhibit 1.

4. GLO owns or operates numerous properties throughout Texas, including public school lands, State Veterans Cemeteries and State Veterans Homes. Some of these properties are occupied by a species known as the Golden-cheeked Warbler ("Warbler").

5. Texas has dedicated half of the public school lands administered by GLO to the Permanent School Fund, which is maintained for the benefit of the public schoolchildren of the State of Texas.

6. The GLO is responsible for maximizing revenues from Texas public school lands. Proceeds from the sale and mineral leasing of public school lands flow to the Permanent School Fund via the GLO.

7. The ability of the GLO to maximize revenues from Texas public school lands, and to maintain State Veterans Cemeteries and State Veterans Homes to a high standard, is undermined by the restrictions imposed due to the presence of Warblers on GLO properties.

8. This encumbrance on the property makes development of the property vastly more expensive and significantly decreases its market value if sold, resulting in less money for the Permanent School Fund, State Veterans Cemeteries, and State Veterans Homes.

9. The presence of Warblers on certain GLO property significantly impacts the market value of such property. For example, an appraisal was conducted on a 2,316.45-acre property located in Bexar and Kendall counties (the "Rancho Sierra property"). A true and accurate copy of this document is attached as Exhibit 2.

10. The appraisal found that approximately 84.5% of the Rancho Sierra property contains Warbler habitat. (Exhibit 2 at 25).

11. Clearing or development on the Rancho Sierra property would require a lengthy and costly mitigation process, and in order to clear or develop the property under the Service's

mitigation program, GLO must replace every one acre of cleared land with three acres of Warbler habitat. (Exhibit 2 at 25).

12. An "as is" valuation of the Rancho Sierra property was also conducted. A true an accurate copy of this document is attached as Exhibit 3.

13. The valuation estimated that the presence of Warbler breeding habitat diminishes the value of the Rancho Sierra property by approximately 35%. (Exhibit 3 at 75).

14. GLO also owns and leases 429 acres in Williamson County, approximately 5 miles east of Jonah. It is my understanding that Warblers inhabit areas throughout Williamson and surrounding counties.

15. The reduction in property values caused by the presence of Warbler habitat translates to less money available for fulfilling GLO's mission to maximize revenues from Texas public school lands for the benefit of Texas schoolchildren.

16. It is my understanding that removal of the Warbler from the endangered species list would remove these impediments to GLO's land values.

Pursuant to 28 U.S.C. § 1746, I, Mark McAnally, declare under penalty of perjury that the foregoing is true and correct. Executed on this May 11, 2018, in Austin, Texas.

MARK MCANALLY
Deputy Director/Chief Appraiser
General Land Office of the State of Texas

Texas Public Policy FOUNDATION

March 1, 2017

VIA FEDERAL EXPRESS
The Honorable Ryan Zinke
Secretary of the Interior
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

VIA FEDERAL EXPRESS
Dr. Benjamin N. Tuggle
Southwest Regional Director
U.S. Fish and Wildlife Service
500 Gold Avenue, SW
Albuquerque, NM 87102

VIA FEDERAL EXPRESS
The Honorable Jim Kurth
Acting Director
U.S. Fish and Wildlife Service
1849 C Street, NW
Washington, DC 20240

RE: Notice of Intent to File Suit Concerning the status of the Golden-Cheeked Warbler under the Endangered Species Act

Dear Secretary Zinke, Director Kurth, and Regional Director Tuggle:

Pursuant to the citizen suit provision of the Endangered Species Act ("ESA"), 16 U.S.C. § 1540(g)(2), this letter serves as a 60-day notice on behalf of the General Land Office of the State of Texas ("GLO") of intent to sue the Secretary of the Interior ("Secretary"). As detailed below, the Secretary has violated the ESA (16 U.S.C. § 1531, *et seq.*) and its implementing regulations (50 C.F.R. § 424.01, *et seq.*), as well as the Administrative Procedure Act (5 U.S.C. § 551 *et seq.*) by maintaining the Warbler in endangered status for over 26 years while simultaneously refusing to designate critical habitat, failing to adequately examine the new data contained in the 2015 Petition to Delist ("Petition") and supporting 2015 study produced by the Texas A&M Institute of Renewable Natural Resources ("Texas A&M Study"), and failure to prepare an Environmental Impact Study ("EIS") prior to listing the Warbler as endangered.

PARTIES

The General Land Office of the State of Texas is the oldest state agency in Texas, established by the Constitution of the Republic of Texas. Upon annexation by the United States, Texas retained

EXHIBIT 1

control of its public lands. Texas constitutionally dedicated half of these public lands to the Permanent School Fund, which is maintained for the benefit of the public schoolchildren of the State of Texas. T.X. Const. art. VII §2. The GLO is responsible for maximizing revenues from Texas public school lands. Tex. Nat. Res. Code Ann. §31.051. Under the Texas Constitution, proceeds from the sale and mineral leasing of public school lands flow to the Permanent School Fund via the GLO. T.X. Const. art. VII § 5(g). The Texas Legislature established the School Land Board in 1939 to manage the sale and mineral leasing of Permanent School Fund lands. The Commissioner of the Texas General Land Office chairs the School Land Board.

Additionally, the GLO owns and maintains State Veterans Cemeteries to honor those who have served, as well as State Veterans Homes that provide care and dignity for veterans, their spouses, and Gold Star parents. The ability of the GLO to maximize revenues from Texas public school lands, and to maintain State Veterans Cemeteries and State Veterans Homes to a high standard, is undermined by the restrictions imposed due to the presence of Warblers or Warbler habitat on GLO properties.

For example, in Bexar and Kendall counties, GLO owns a 2,316.45-acre parcel of land – approximately 84.5% of which contains Warbler habitat. In order to clear or develop the property under the Service's mitigation program, GLO must replace every one acre of cleared land with three acres of Warbler habitat. This encumbrance on the property makes development of the property vastly more expensive and significantly decreases its market value if sold, resulting in less money for the Permanent School Fund, State Veterans Cemeteries, and State Veterans Homes. In fact, after conducting three studies on the presence of Warbler habitat on this property, experts concluded that the presence of Warbler habitat decreased the property's value an average of 43%.

GLO also owns and leases 429 acres in Williamson County, approximately 5 miles east of Jonah. Warbler habitat is located throughout Williamson and surrounding counties.

If the Service does not correct the noted deficiencies within 60 days of this notice, GLO will seek to have the challenged Negative Finding declared unlawful and set aside. In addition, all other appropriate relief, including costs and fees, will be sought.

BACKGROUND

A. THE ESA 90-DAY FINDING

The ESA requires the Secretary of the Interior, acting through the U.S. Fish and Wildlife Service ("Service"), to the maximum extent practicable, within 90 days after receiving a petition to delist a threatened or endangered species under the ESA, make a finding as to whether the petition presents substantial information indicating that delisting may be warranted. 50 C.F.R. §424.14(b)(1). If the Secretary makes a positive 90-day finding by determining that a petition presents substantial information indicating the petitioned action may be warranted, the Secretary is required to commence a review of the species' status and make a determination as to whether listing is warranted. This second determination is called a "12-month finding." If the Secretary makes a negative 90-day finding, the petition is rejected and no further review is conducted by the

agency. A negative 90-day finding is then subject to judicial review. 16 U.S.C. §§ 1533(b)(3)(C)(ii), 1540(g).

Making a positive 90-day finding is a low bar, as it simply triggers further review of the status of a species. At the 90-day finding stage, the Secretary is required to determine only whether a petition presents substantial scientific information indicating that the petitioned action may be warranted. Service regulations define "substantial information" as "that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted." 16 U.S.C. § 1543(b)(3)(A); 50 C.F.R. § 424.14(b)(1). The Secretary does not critically analyze petitions, conduct additional research, or make a determination as to whether listing under the ESA is warranted at the 90-day finding stage. *See, e.g., Colorado River Cutthroat Trout v. Kempthorne*, 448 F.Supp.2d 170, 176-77 (D.D.C. 2006) (recognizing the Service's explicit acknowledgement, in the agency's routine statement in 90-day findings on petitions, that it does not conduct additional research or subject the petition to rigorous critical review at the 90-day finding stage). In a 90-day review, the Service may utilize the information that it already has in its files regarding the species in addition to the information provided in the petition; however, the Service may not solicit or consider outside information and opinions. *E.g., Ctr. For Biological Diversity v. Morgenweck*, 351 F.Supp.2d 1137 (D.Colo. 2004); *Wildearth Guardians v. U.S. Secretary of the Interior*, 2011 WL 1225547, *4, *7 (D.Idaho Mar. 28, 2011); *McCrary v. Gutierrez*, 2010 WL 520762 (N.D.Cal. Feb. 8, 2010).

Importantly, it is well-established that a lower standard of evidence is required at the 90-day finding stage than is required to make a 12-month finding, because the question before the service at that preliminary stage is whether the petitioned action *may be warranted*, not whether it *is warranted*. *E.g., Moden v. U.S. Fish and Wildlife Serv.* 281 F.Supp.2d 1193, 1203-4 (D.Or. 2003) (concluding that "the standard for evaluating whether substantial information has been presented by an 'interested person' is not overly-burdensome, does not require conclusive information, and uses the 'reasonable person' to determine whether…action may be warranted."); *Humane Society of the U.S. v. Pritzker*, 2014 WL 6946022, *5-8 (D.D.C. Nov. 14, 2014) (summarizing case law verifying the lower evidentiary standard for a 90-day finding and determining that the agency was arbitrary and capricious in its failure to apply the correct evidentiary standard where there was "conflicting evidence" regarding the species and the agency's "own conclusion regarding the need for more thorough analysis suggest[ed] that a reasonable person might conclude that a review of the status of the species concerned was warranted"); *Ctr. for Biological Diversity v. Kempthorne*, 2008 WL 659822, *9 (D.Ariz. Mar. 6, 2008) (holding that "the application of an evidentiary standard requiring conclusive evidence in the context of a 90-day review is arbitrary and capricious"); *Morgenweck*, 351 F.Supp.2d at 1141; *Colorado River Cutthroat Trout*, 448 F.Supp.2d at 176 (holding that the 90-day finding stage is intended to be a "threshold determination" and a "less searching review").

B. THE GOLDEN-CHEEKED WARBLER

On May 4, 1990, the Service listed the Warbler as endangered on an emergency basis, based upon its belief that the species was rare and that its breeding habitat was primarily limited to Travis County, Texas. 55 Fed. Reg. 18844. The Service published the final rule listing the Warbler as endangered on December 27, 1990. 55 Fed. Reg. 53153. Pursuant to the listing factors identified

in the ESA, the Service provided the following justifications for the listing of these species as endangered:

> **Listing Factor A (the present or threatened destruction, modification, or curtailment of its habitat or range):** The Service stated "[w]idespread clearing of juniper as a range management practice and urban encroachment continue to threaten the golden-cheeked warbler and its habitat." At that time, the Service found the greatest rate of Warbler habitat loss had occurred in the southern and eastern portions of the Edwards Plateau. The Service also cited habitat fragmentation due to highway construction, proposed residential and commercial developments, and proposed reservoirs and water delivery systems, as well as habitat loss in the Warbler's winter territory in Mexico and Central America.
>
> **Listing Factor B (overutilization for commercial, recreational, scientific, or educational purposes):** The Service determined that none of these factors were present at the time of listing.
>
> **Listing Factor C (disease or predation):** The Service determined that it was difficult to assess the extent of next predation due to the difficulty in observing Warbler nests, but listed scrub jays, blue jays, crows, grackles, feral cats and dogs, rat snakes, raccoons, opossums, and squirrels as nest predators. The Service noted that fire ants "could become a threat."
>
> **Listing Factor D (the inadequacy of existing regulatory mechanisms):** The Service determined that although the Warbler is protected under the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*) and was listed as a threatened species by the Texas Parks and Wildlife Department, making it illegal to "shoot or physically harm, possess, sell or transport" Warblers without a permit, there was not provision of the protection of habitat in the regulations. The Service also noted that the City of Austin had limited power to protect Warbler habitat.
>
> **Listing Factor E (other natural or manmade factors affecting its continued existence):** The Service determined that "[h]abitat destruction that causes habitat fragmentation is an immediate threat to the golden-cheeked warbler." The Service also listed brown-headed cowbird parasitism and lack of reproduction of deciduous trees as factors affecting the continued existence of the Warbler.
>
> 55 Fed. Reg. 53153-60.

Essentially, the listing decision was based on the following key assumptions: (1) habitat loss and fragmentation due to urbanization and range clearance would continue unchecked; (2) current protections under the Migratory Bird Treaty Act and the Texas' endangered species law were insufficient to protect Warbler habitat; and (3) predation might occur, although the difficulty in observing Warblers made this uncertain.

EXHIBIT 1

At the time of the listing, the Service relied on the only available studies of the Warbler, which were based upon 10-year old satellite mapping using the dated technology then available, as well as a 14 year-old study of warbler density that significantly underestimated the extent of Warbler habitat and the size of the warbler population at that time.
In making the listing decision, the Service did not simultaneously designate critical habitat as required by the ESA, 55 Fed. Reg. 18843, nor did it take any action to comply with the requirements of the National Environmental Policy Act. 42 U.S.C. § 4332(C).

C. THE PETITION TO DELIST THE GOLDEN-CHEEKED WARBLER

On June 29, 2015, a group of petitioners[1] submitted to the Service a petition to delist the Warbler. The petition provides substantial new scientific information indicating that delisting may be warranted. The petition provides the current body of information on the Warbler and documents almost five times more Warbler breeding habitat than was known at the time of the listing, as well as roughly nineteen times more Warblers in existence than was known at the time of the listing. The petition includes scientific support showing that the Warbler does not currently meet the ESA's definition of "endangered" or "threatened," and is not today "in danger of extinction throughout all or a significant portion of its range," nor is it likely to become so in the foreseeable future. In addition, the petition points to research indicating that there is consensus among the scientific community that breeding warblers inhabit a much wider range of habitat types than were identified in the early studies on which the Service relied in making its listing determination.

In rejecting the Petition to Delist, the Secretary did not undertake to designate critical habitat, did not use the best available scientific and commercial data, and did not comply with NEPA. The Secretary has thereby failed to perform mandatory substantive and procedural duties under federal law and has acted arbitrarily, as set forth below.

LEGAL CHALLENGE

A. FAILURE TO DESIGNATE CRITICAL HABITAT IS INCONSISTENT WITH CONTINUED LISTING

The ESA defines "critical habitat" as either "the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 1533 of this title, on which there are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection," and "specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 1533 of this title, upon a determination by the Secretary that such areas are essential for the conservation of the species." 16 U.S.C. § 1532(5)(A).

The crucial importance of habitat to the protection of endangered species as at the forefront of legislators' minds during the initial discussions on the ESA: "Often, protection of habitat is the only means of protecting endangered animals which occur on nonpublic lands." S.Rep. No. 307,

[1] Texans for Positive Economic Policy, Susan Combs, the Texas Public Policy Foundation, and the Reason Foundation. A copy of the Petition to Delist is attached to this 60-day notice.

93 Cong., 1st Sess. 4 (1973). In 1978, Congress amended the ESA to expressly link the timing of the critical habitat designation to the decision to list a species. 16 U.S.C. §1533(a)(3). The duty to designate critical habitat is a "non-discretionary duty" and a "Congressional mandate." *Schoeffler v. Kempthorne*, 493 F.Supp.2d 805, 809 (W.D. Louisiana 2007).

In the years since, courts have regularly emphasized the central importance in protecting habitat in the ESA. *See, e.g., Catron County Board of Commissioners v. FWS*, 75 F.3d 1429 (10th Cir. 1996) ([T]he main purpose of the ESA is to prevent extinction of species by preserving and protecting the habitat on which species depend from the intrusive activities of humans.); *Palila v. Hawaii Department of Land & Natural Resources*, 649 F.Supp. 1070 (D. Hawaii 1986), *aff.* 852 F.2d 1106 (9th Cir. 1986) (Main purpose of ESA is conservation and preservation of ecosystems upon which endangered species depend.).

Despite this, critical habitat for the Warbler has never been designated. When the final listing was made in December 1990, the Service claimed that the Warbler's critical habitat was undeterminable at that time, but that the Service was "presently funding a study to determine minimum patch size requirements for the species" and gave itself a deadline of May 4, 1992, to designate critical habitat. 55 FR 53153, 53160 (1990). The Service never fulfilled its obligation to designate critical habitat, despite repeatedly affirming that the Warbler is endangered and faces its greatest threat from habitat destruction. Further, the Service has never articulated a rational connection between its primary reason for listing the Warbler (habitat destruction) and its decision not to designate critical habitat. Claiming that the Warbler is endangered while at the same time refusing to designate critical habitat is both logically and legally inconsistent. The Service cannot have it both ways. Either critical habitat must be designated or the Warbler must be delisted.

The fact that the Warbler has been listed for nearly 27 years without a critical habitat designation strongly supports delisting, especially in light of the new evidence on species recovery brought to the Service's attention in the Petition to Delist. Failure to designate critical habitat for over two decades after listing the Warbler is a violation of the mandatory duty set forth in 16 U.S.C. § 1533(a)(3)(A). Failure to delist under these circumstances is arbitrary and capricious, calling into question the validity and necessity of the Warbler's listing as an endangered species in the first place, which constitutes a continuing violation of 16 U.S.C. §1533(c)(2). *See Schoeffler v. Kempthorne,* 493 F. Supp 2d 805, 809 (W. D. La. 2007); *See also Dickson v. Quarterman,* 2006 WL 2457073, *7 (5th Cir. 2006) ("If the entire United States government bureaucracy performed its duties as the United States Department of Interior performed, or rather failed to perform, its duties in this case, the Republic could no longer endure. The citizens of the United States, the taxpayers who pay the freight, have the right not only to expect more, but to demand more from their Government.")

B. FAILURE TO CONSIDER BEST AVAILABLE DATA IN PETITION TO DELIST

The 90-day finding, in which the Service denied the Petition to Delist, impermissibly ignored the data contained in the Petition, which is the best available data on the Warbler. For example, in its analysis of Factor A, the Service dismissed the study conducted in 2015 by the Texas A&M Institute of Renewable Natural Resources ("Texas A&M Study") as summarizing "information already known to the Service and discussed in the 5-year review" and praised the Service's 2014

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5-year review as representing "the best available body of science known to the Service pertaining to the status of the Warbler."[2] However, in the very next line, the Service states that it "recognizes that the modeling studies described in the Texas A&M Study do represent the most recent and comprehensive efforts to estimate range-wide Warbler habitat and population size to date." It is contradictory to claim that the 2014 5-year review is the "best available body of science" on the status of the Warbler, when the more recent 2015 Texas A&M Study is the most "recent and comprehensive" research on Warbler habitat and population size, which are key factors in determining the viability of the Warbler's status as endangered.

The Texas A&M Study presents considerable new information on the amount of existing Warbler habitat and the most scientifically advanced methods of calculating the amount of habitat, both of which are critical to a review of the Warbler's endangered status. Despite this, the Service concluded in its 90-day finding that the Texas A&M Study "does not present substantial information not previously addressed in the 2014 5-year review for this species and does not offer any substantial information indicating that the petitioned action to delist the species may be warranted."[3] The Service provided no credible analysis to support its summary dismissal of the Texas A&M Study.

The weaknesses in the 90-day finding are clear. First, as indicated, in its analysis of Factor A10, the Service dismissed the Texas A&M Study as summarizing "information already known to the Service and discussed in the 5-year review," and praises its 2014 five-year review as representing "the best available body of science known to the Service pertaining to the status of the warbler." The Service then adds that it "recognizes that the modeling studies described in the 2015 Texas A&M Study do represent the most recent and comprehensive efforts to estimate range-wide warbler habitat and population size to date." Logically, the 2014 five-year review cannot be the "best available body of science" on the status of the warbler when the more recent 2015 Texas A&M Study is the most "recent and comprehensive" research on warbler habitat and population size, which are key factors in determining the viability of the warbler's status as endangered.

Second, the Service mentions habitat destruction multiple times throughout its 90-day finding, in its analysis of Factor A, Factor C, Factor D, and Factor E. In its analysis of Factor D, the Service claims that "an estimated 29 per cent of existing breeding season habitat was lost between 1999-2001 and 2010-2011," and cites "increasing urbanization" and "habitat loss" as reasons why the warbler should not be delisted. This stands in stark contrast to the Service's refusal to designate critical habitat. It begs the question posed above from a different angle. How can destruction of the warbler's habitat be the primary reason for denying the delisting petition when the Service has explicitly stated that it cannot determine which areas of Texas are critical habitat for the warbler?

Third, in its analysis of Factor C, the Service states that the delisting petition's claim that predation does not constitute a significant threat to the continued existence of the warbler is refuted by the 2014 five-year review, which concluded that urbanization and habitat fragmentation "have likely resulted in increased rates of predation of warbler nests by a wide variety of animal predators, especially rat snakes." The 2014 five-year review merely lists animals which have been known to

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2 A copy of the Texas A&M Study is attached to this 60-day notice.
3 A copy of the 90-day finding is attached to this 60-day notice.

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prey on warbler nests, which the Service acknowledges is a "natural occurrence in [Warbler] habitat," but goes on to extrapolate from these perfectly natural instances of predation the unsupported contention that increased urbanization leads to higher than normal levels of predation. (2014 5-year review at 11). There is no concrete support given for this analytical leap, which the Service then relied upon in its denial of the delisting petition.

Fourth, in its analysis of Factor E, the Service states that "habitat fragmentation, habitat degradation, inappropriate habitat management practices, and excessive noise all contribute to reductions in overall warbler habitat quality and present a real and significant threat to the long term viability of the species." In discussing each of these threats, the Service states that they each have the potential to significantly affect Warbler habitat, but does not cite to any examples of instances where this has actually been the case. For instance, the Service states that "catastrophic wildfires have the potential to significantly diminish occupancy by Warblers in previously occupied habitat." This is likely true, but in the same way that a meteor strike has the potential to significantly diminish Warbler occupancy of previously occupied habitat. Nowhere does the Service state that wildfires, or any of the other natural or man-made threats, have actually impacted Warbler habitat in any way. In fact, without being able to determine where the Warbler's critical habitat exists, the Service's conclusions are speculative at best and incoherent at worst.

Finally, in its concluding "Petition Finding" paragraph, the Service claims that the Texas A&M Study "does not present substantial information not previously addressed in the 2014 five-year review for this species and does not offer any substantial information indicating that the petitioned action to delist the species may be warranted." However, the Texas A&M Study presents considerable new information on the amount of existing warbler habitat and the most scientifically advanced methods of calculating the amount of habitat, both of which are critical to a review of the warbler's endangered status. It is clear that the Service chose to dismiss outright the new information presented in the Texas A&M Study and did so with almost no analysis to support its decision.

In short, the Service failed to examine the relevant data and articulate a satisfactory explanation for its action, including a rational connection between the facts found and the choice made, especially in light of the Service's two-decades-plus failure to designate critical habitat. *See Motor Vehicle Manufacturers Ass'n of US, Inc. v. State Farm Mutual Auto Ins. Co.*, 463 US 29, 43 (1983).

Under 50 CFR §424.11, the Service has a mandatory duty to delist a species if any one of the three delisting criteria – extinction, recovery, or "original data for classification in error" – is present. Arguably, two of the three criteria are met in the case of the Warbler. The Texas A&M Study shows that the data relied upon in the initial listing decision was inaccurate, showing far fewer birds than actually existed. Alternatively, even if the Warblers were endangered in 1990, the Texas A&M Study results show that the species has since recovered.

C. FAILURE TO COMPLY WITH NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act ("NEPA") requires any federal agency to prepare an EIS any time the agency proposes a major federal action significantly affecting the quality of the human environment. 42 U.S.C. § 4332(2)(C). The EIS must detail the environmental impact of the action,

unavoidable adverse environmental effects, alternatives to the action, the relationship between the short-term uses and long-term productivity of the affected environment, and irretrievable and irreversible commitments of resources should the action be implemented. 42 U.S.C. § 4332(2)(C)(i)-(v).

Until September 21, 1983, the Service prepared Environmental Assessments ("EAs") for all endangered species listing regulations. *See* Endangered and Threatened Wildlife and Plants, 48 Fed. Reg. 49244-02 (Oct. 25, 1983). After recommendations from the Council on Environmental Quality (CEQ), the Service adopted CEQ's judgment that Section 4 listing actions are exempt from NEPA review "as a matter of law." *Id.*

The Service listed three supporting reasons for this change:

1. That of the 130 EAs conducted in the past 10 years in connection with Section 4 actions, none resulted in a decision to prepare an EIS;
2. The Sixth Circuit's finding in *Pacific Legal Foundation v. Andrus*, 657 F.2d 829 (6th Cir. 1981) that as a matter of law an EIS is not required for listings under the Act, and that preparing an EIS on listing actions does not further the goals of NEPA or ESA; and
3. ESA Amendments of 1982 require listing decisions under the ESA to be based solely upon biological grounds and not upon consideration of economic or socioeconomic factors.

Id. The Service claimed that foregoing EAs for all Section 4 listings would "allow better utilization of personnel and fiscal resources and will eliminate the preparation of documents that did not further the goals of either NEPA or ESA. *Id.*

Compliance with NEPA is excused when there is a statutory conflict with the agency's authorizing legislation that prohibits or renders compliance impossible. *Flint Ridge Dev. Co. v. Scenic Rivers Ass'n*, 426 U.S. 776, 788 (1976). Courts have varied in their interpretation of what constitutes a "conflict," and have approved foregoing NEPA on the basis of statutory conflict after finding either an unavoidable conflict between two statutes that renders compliance with both impossible, or duplicative procedural requirements between the statutes that essentially constitute functional equivalents, making compliance with both statutes superfluous. *See Catron County Bd. Of Commissioners, New Mexico v. US Fish & Wildlife Service*, 75 F.3d 1429, 1435 (10th Cir. 1996).

In *Catron County*, the court found that "given the focus of the ESA together with the rather cursory directive that the Secretary is to take into account 'economic and other relevant impacts,' we do not believe that the ESA procedures have displaced NEPA requirements." *Id.* at 1436. Additionally, NEPA's procedures allow all parties to determine what the effect of the agency's action will be, and compliance with NEPA furthers the goals of the ESA. *Id.* Although *Catron County* did not deal with listing or delisting decisions, the court rejected the argument that the legislative history of the ESA indicates congressional endorsement of the Secretary's decision to cease complying with NEPA. *Id.* at 1339. The court explicitly refused to extend the holding of the Sixth Circuit in *Pacific Legal Foundation v. Andrus*, 657 F. 2d 829 (6th Cir. 1981), to designations

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of critical habitat, instead holding that "the available material indicates that Congress intended that the Secretary comply with NEPA when designating critical habitat under ESA when such designations constitute major federal action significantly affecting the quality of the human environment." *Id.* The decision to list the Warbler as endangered was a major federal action that significantly affected the quality of the human environment, thus triggering the EIS requirement. For the same reason, the rejection of the petition to delist triggered the EIS requirement. At the very least, NEPA required that an EA be performed to determine whether an EIS was necessary. In any event, the Service's utter refusal to even consider complying with NEPA was arbitrary, capricious and not in accordance with the law.

The Service was required to comply with NEPA and conduct an EIS before the Warbler's final listing as endangered, but failed to do so. The decision to list the Warbler as endangered was a major federal action that significantly affects the quality of the human environment, and should have been subjected to the rigorous examination of an EIS. Likewise, the decision to reject the delisting petition was a major federal action affecting the quality of the human environment, and should have been subjected to the same rigorous NEPA analysis.

Respectfully submitted,

Robert Henneke
General Counsel & Director,
Center for the American Future
Texas Public Policy Foundation
Attorney for the Texas General Land Office

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City of San Antonio Analysis

SAN ANTONIO MAP

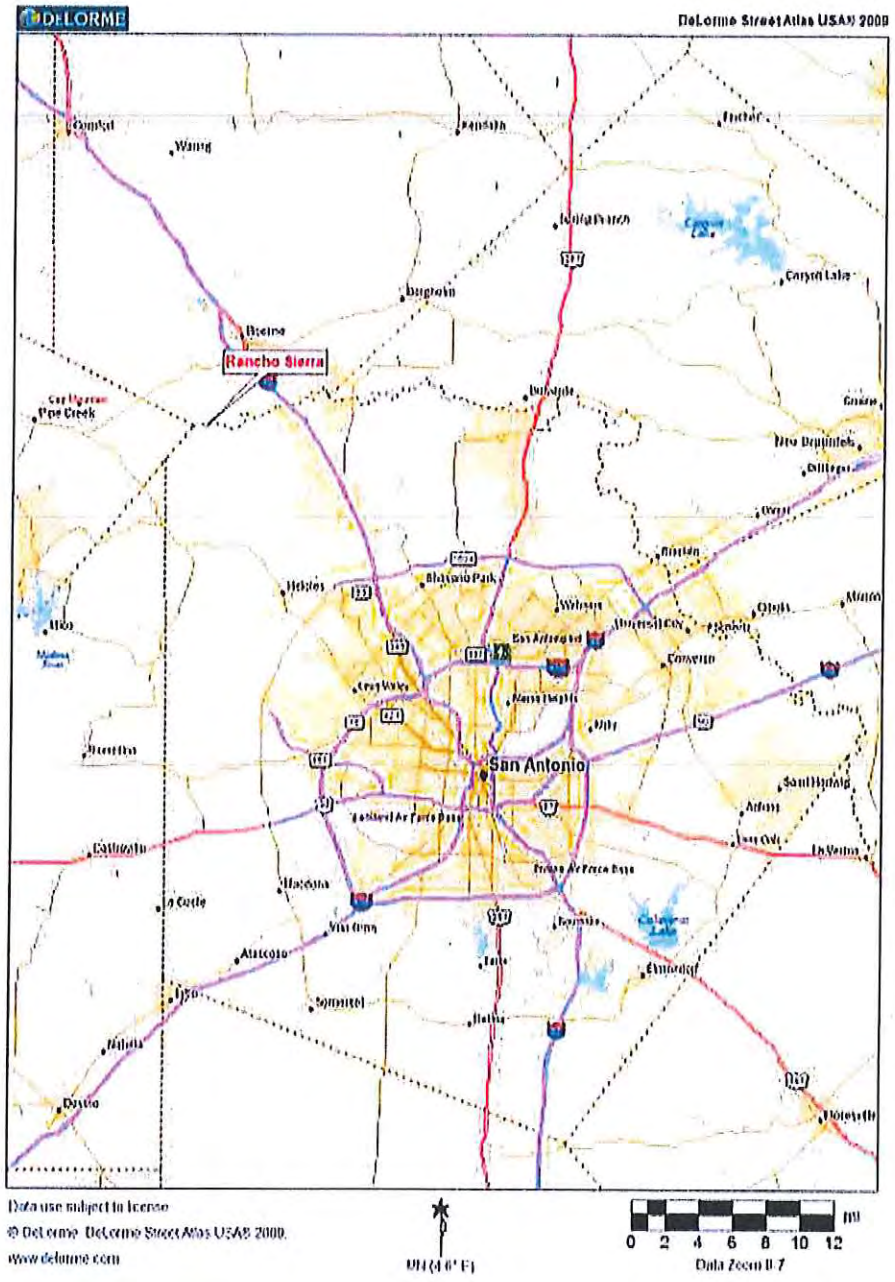


EXHIBIT 2

Valbridge
PROPERTY ADVISORS

LOCATION MAP

EXHIBIT 2

NEIGHBORHOOD MAP

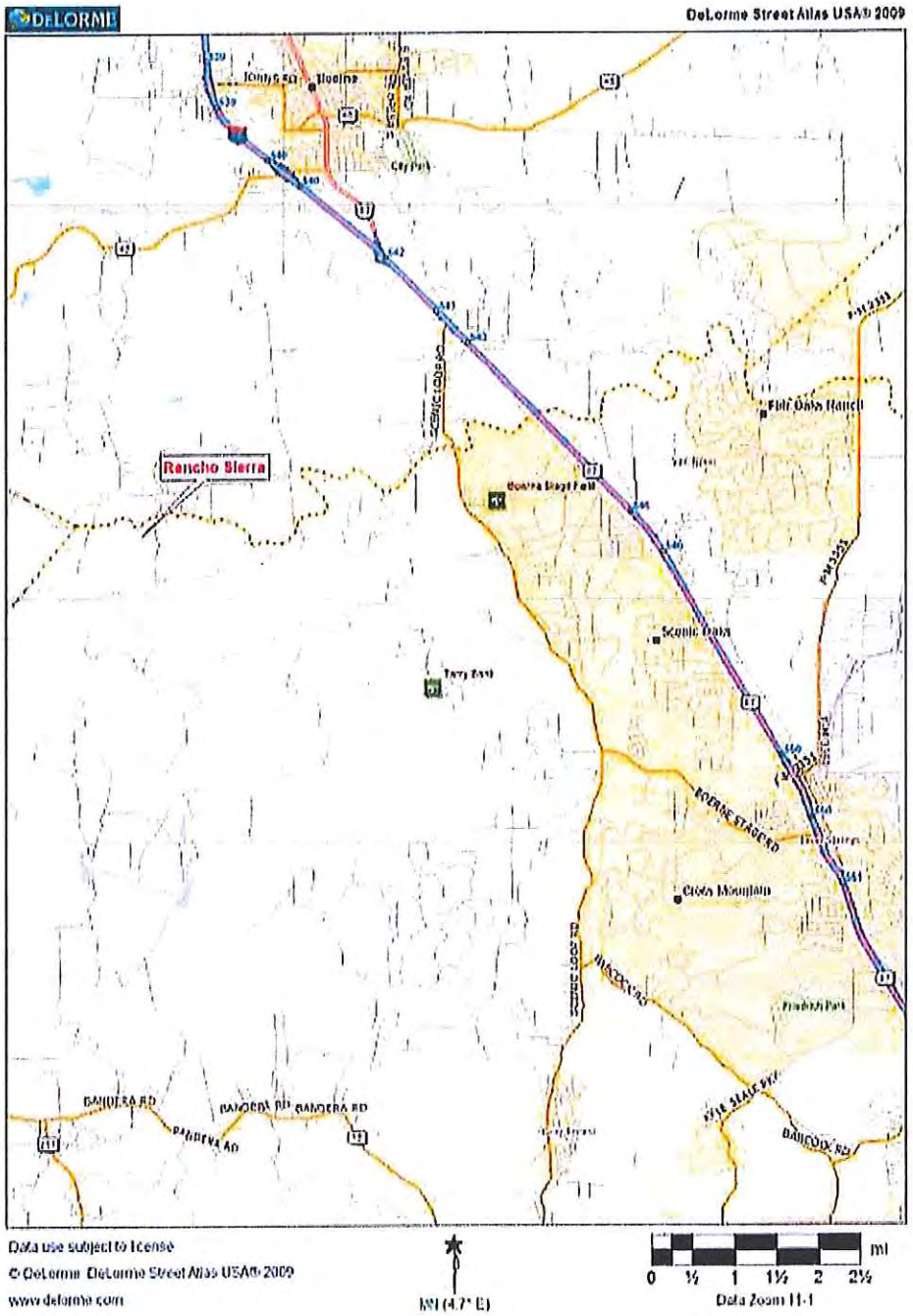
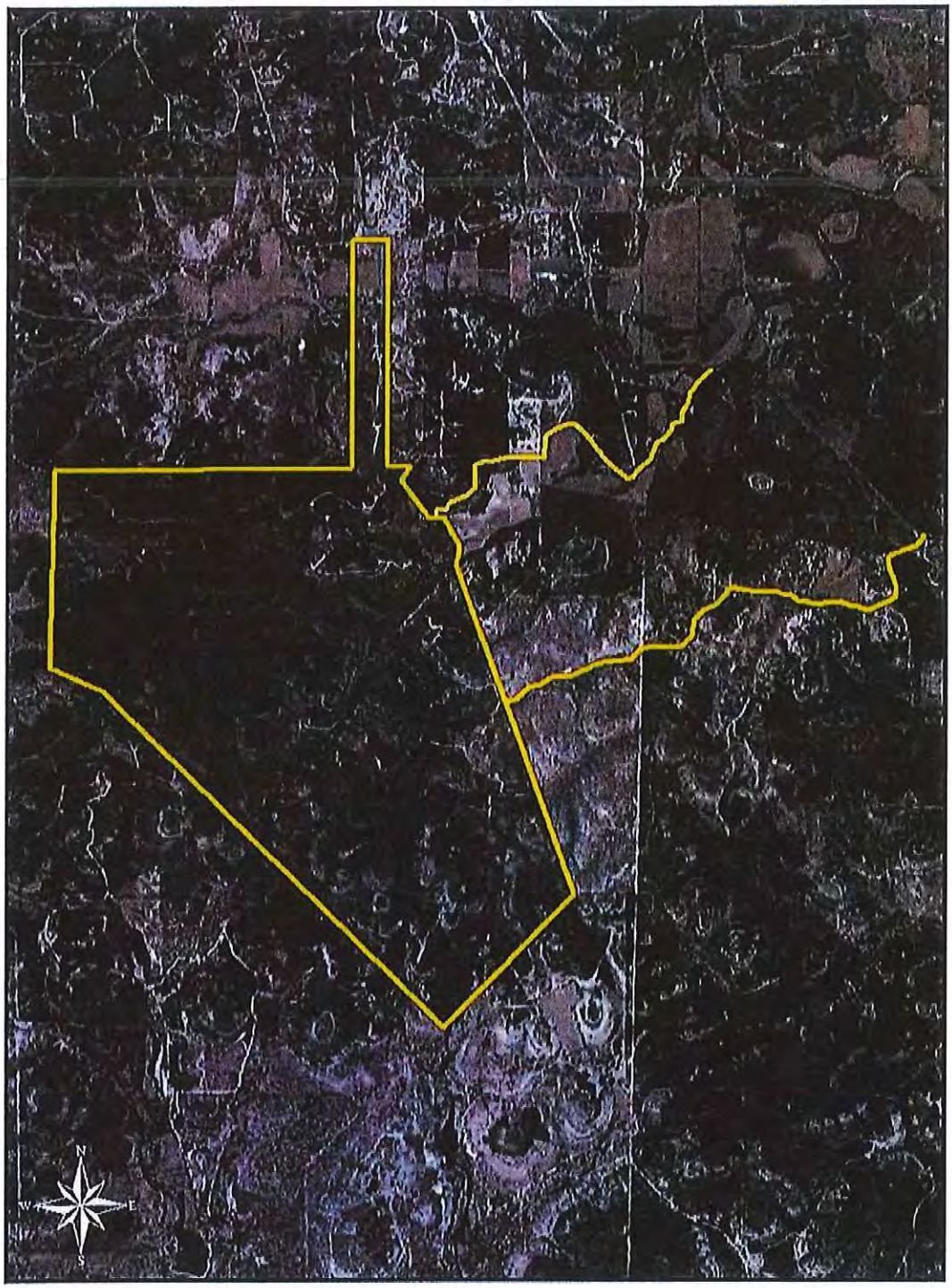


EXHIBIT 2

AERIAL MAP



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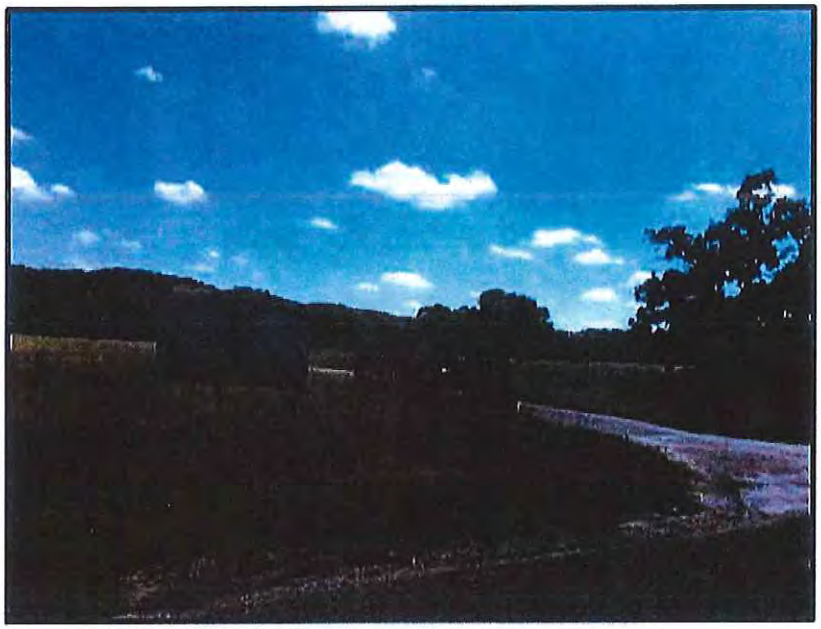
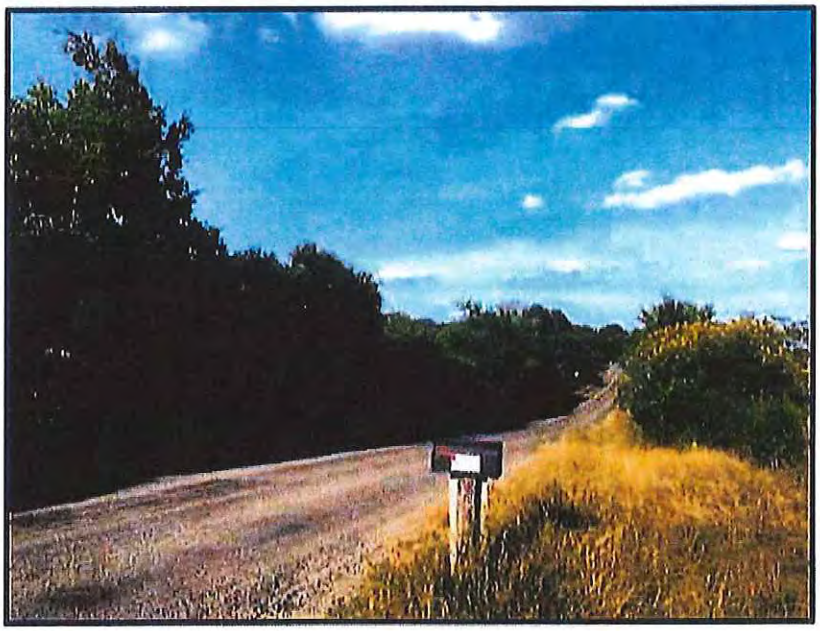
Photographs of the Rancho Sierra



Looking south at the entrance into Rancho Sierra from Dodge Road.



Looking east along Dodge Road. Rancho Sierra is to the right.

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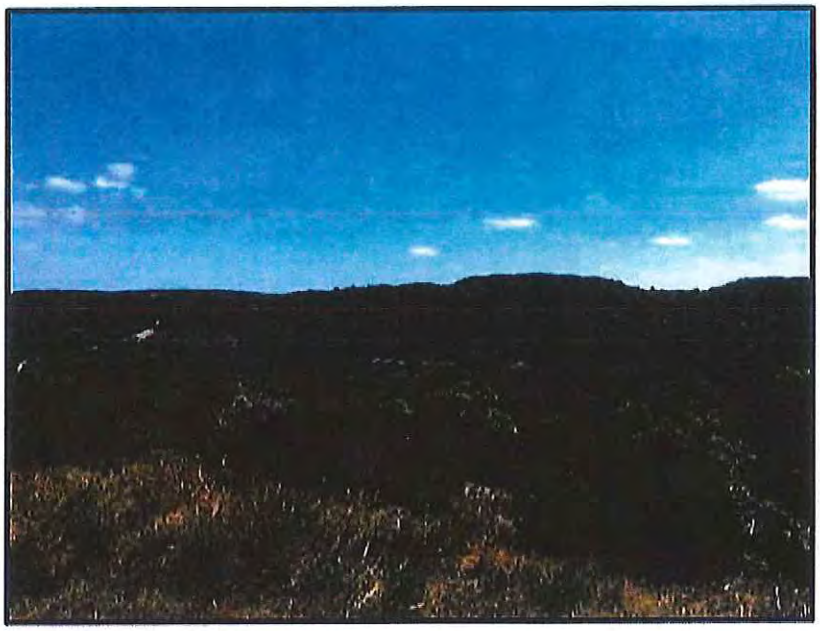
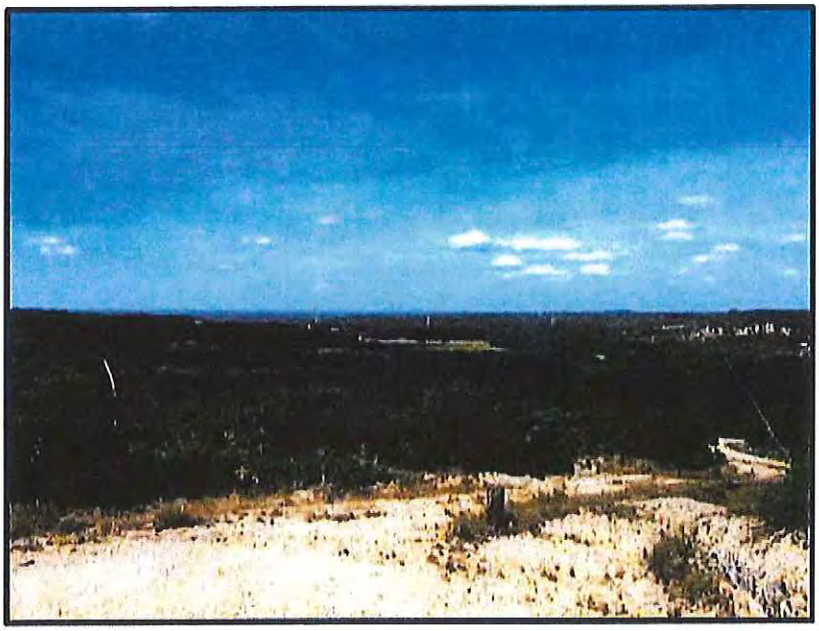
Photographs of the Appraised Property



Looking southwest from the north portion.



Looking south at cleared area from the northeast portion.

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Photographs of the Appraised Property

Looking west along Rundale Creek and at a small dry stock tank in the northeast portion.

View of drilled water well in the southeast/central portion.
The well is not equipped with a pump or electricity. Rancho Sierra includes several "test wells" which were drilled to ascertain water availability on the ranch.

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Photographs of the Appraised Property

Looking south from the central quadrant.

Hunters camp in the southeast portion

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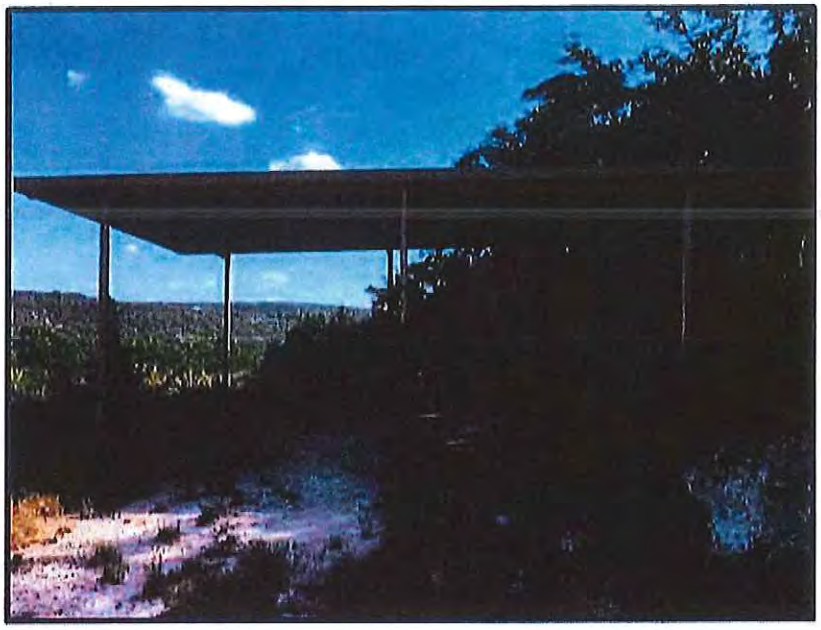
Photographs of the Appraised Property



Well elevated pavilion located in the northwest portion.

Looking east at the fee owned lane. The lane provides access to Toutant Beauregard approximately two miles to the east.

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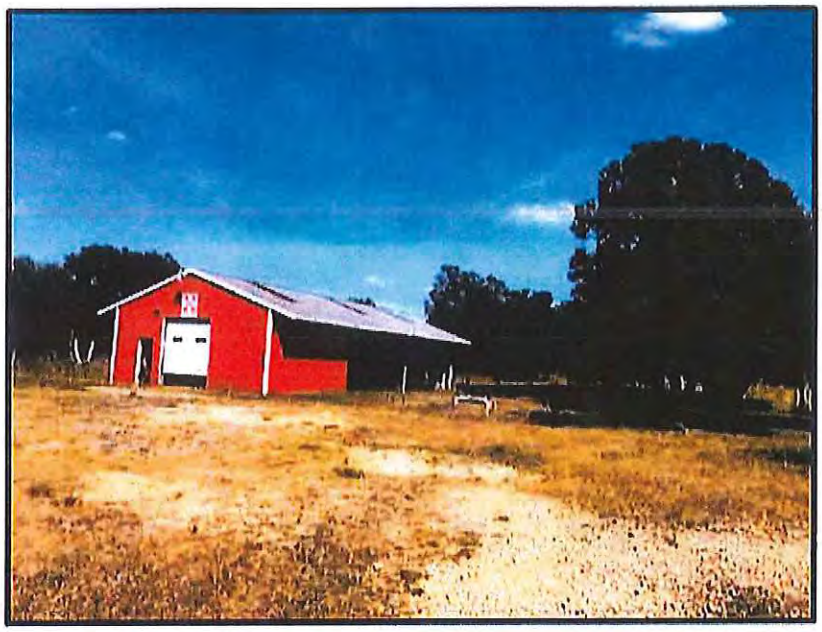
Photographs of the Appraised Property



Barn located in the north portion.

Looking east along Balcones Creek near the house. The creek is holding a small pothole of water.

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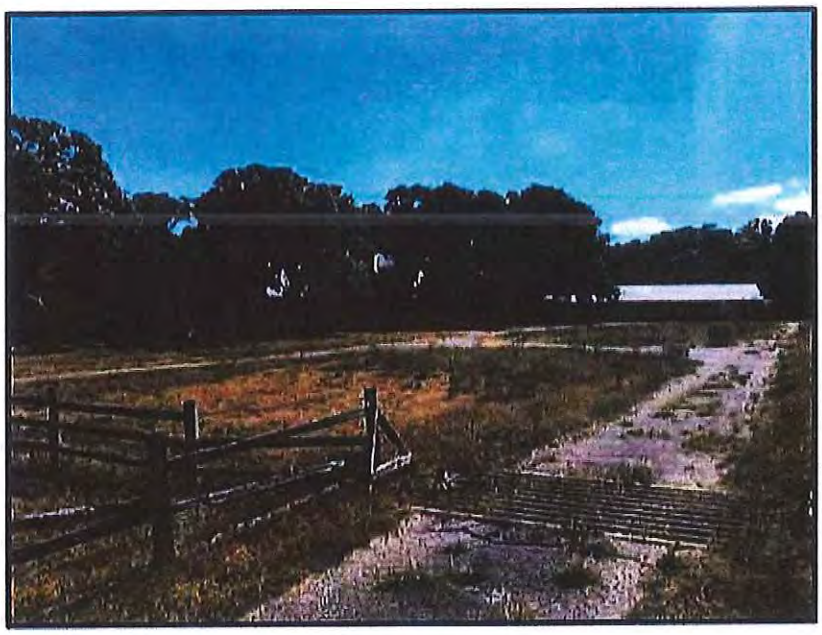
Photographs of the Appraised Property



Front view of the residence and asphalt circle drive.

Alternate front elevation of the residence.

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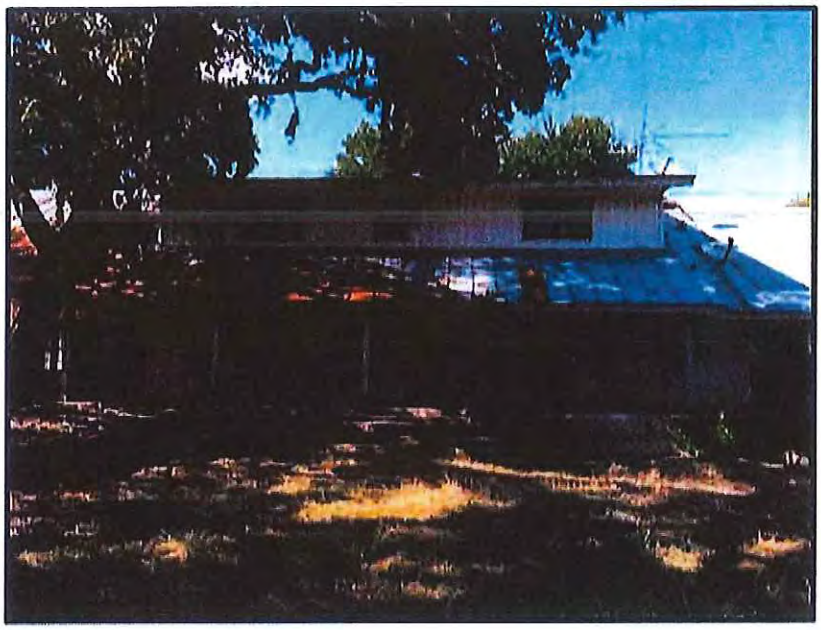
Photographs of the Appraised Property



Rear elevation of the residence which faces the creek.

View of residence and pasture land facing south.

EXHIBIT 2

Introduction

Client and Other Intended Users of the Appraisal

The client in this assignment is McKinney Fund. The intended users of this report are McKinney Fund and The General Land Office of Texas.

Intended Use of the Appraisal

The intended use of this report is for asset decision making purposes by McKinney Fund and the Texas General Land Office of Texas.

Real Estate Identification

Rancho Sierra is located in northwest Bexar County and southwest Kendall County. Approximately 2,277.55 acres or 98.3% are located in Bexar County with the balance located in Kendall County. The property is owned by the State of Texas through the General Land Office on behalf of the School Land Board for the benefit of the Permanent School Fund. The ranch is legally described in three tracts. The first tract is the main body of the ranch; the second tract is a separate fee-owned lane which extends east towards Toutant Beauregard. The third tract is an ingress/egress easement which extends east to Upper Balcones Road. The ranch has three access points including the main property frontage, the fee-owned lane and the recorded easement.

Legal Description

The subject property is legally described as:

> ***Tract I:*** *Being 2,299.4 acres consisting of 38.9 acres in Kendall County and 2,260.5 acres in Bexar County, out of the Beaty, Seale and Forwood Survey No. 485, Abstract 110, the Beaty, Seale and Forwood Survey No. 487, Abstract 111, the H. G. Mitchell Survey No. 488, Abstract 1062, the U. Barnsteiner Survey No. 483, Abstract 105, the U. Barnsteiner Survey No. 446, Abstract 84, the Frank D. Hahn Survey No. 416, Abstract No. 1159, the G. C. & S. F. R. R. Survey No. 415, Abstract No. 1080, and the Agapito Gayton Survey No. 408, Abstract No. 202, Kendall County and Abstract No. 295 Bexar County, Kendall and Bexar Counties, Texas.*
>
> ***Tract II:*** *Being 17.05 acres out of the Simon Montalvo Survey No. 417, Abstract No. 483, the Francisco Nuñez Survey No. 484, Abstract 556, and the Beaty, Seale and Forwood Survey No. 487, Abstract 111, Bexar County, Texas.*
>
> ***Tract III:*** *A road easement being the center line of an existing roadway extending from the east line of a 221.95 acre tract described in Volume 10887, Page 534, Bexar County, Texas.*

Tract No. II extends to Toutant Beauregard to the northeast while Tract III (the easement road) extends to Balcones Road to the east. The field notes are referenced in the *Addenda* of the appraisal.

Real Property Interest Appraised

The property rights appraised include the unencumbered fee simple title interest in Rancho Sierra subject to easements and other encumbrances of record. A portion, if not all, of the mineral estate is likely intact with the surface. Northern Bexar and Kendall County are not known for mineral production; a portion of

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General Data

Location/Access

Rancho Sierra is located along the south side of Dodge Road approximately ten miles west of Interstate 10. The ranch has approximately 840 feet of frontage along the south side of Dodge Road. Dodge Road is a narrow, two-lane asphalt county maintained road. The ranch has additional access from the west side of Upper Balcones Road and Toutant Beauregard. A 60 foot wide, 17.05 acre, fee owned lane extends east approximately 2.3 miles connecting to Toutant Beauregard from the east quadrant of the property. The ranch has additional access from a recorded ingress/egress easement which extends to Upper Balcones Road from the northeast portion of the ranch.

Primary access to the ranch is from the south side of Dodge Road. The entrance is through an electric steel gate leading along an older asphalt paved road leads to the single family residence and main area of improvements. An all-weather caliche gravel road extends south into the property along the east and southeast boundaries. An additional caliche road extends along the north boundary to the northwest corner. Access within the west and southwest portions of the ranch are difficult with very rugged land and typical ranch roads. Many of the roads within the ranch are "tight" and require the aid of four-wheel drive. It is noted that the roads are eroded in some areas and require blading.

Size/Shape/Configuration

The overall property size is 2,316.45 acres. The main body of the ranch includes 2,299.4 acres with a 17.05 acre fee owned lane which extends east to Toutant Beauregard Road. The shape of the ranch is irregular with an 840 foot wide neck of frontage extending north to Dodge Road. The main body of the ranch measures 1.9 miles wide with the length being 2.5 miles long.

Land Features

The appraised ranch includes rolling to very rugged Hill Country terrain with heavy native brush and various open areas and valleys. Elevations range from approximately 1,545 feet in the north portion of the property near Dodge Road to 1,892 feet in the southwest portion of the property. The lowest elevations are located along Balcones and Rundale Creeks as well as near Dodge Road. Native trees and brush includes cedar, live oaks, Spanish oaks, Texas Shin Oak, etc. Overall, the majority of the property is covered with dense brush with some areas of open improved pasture and native grasses. Approximately 20 acres located in the northern portion in the "neck" along Dodge Road is open improved grasses with scattered live oak trees.

Soils/Productivity

The soils are generally of limestone based and clay varieties. The soils are conducive for typical Bexar and Kendall County tree and vegetation. The soils are classified as Bracket gravely clay loam, Bracket-Eckrant association and Krum clay. The clay soils are predominantly located in Rundale and Upper Balcones Creek. The rocky soils are located predominantly along the hills. Please reference the *Soils Map*, *Soils Legend* provided on the previous pages for specific soil types and appropriate percentages located on the property.

Water Features

Rancho Sierra is improved with several water wells. An electric water well is located in the north portion adjacent to the single family residence and carport. The well includes electricity to the site with a submersible pump. The balance of the water wells are scattered throughout the southern portion of the ranch. The water wells utilize a small gasoline motor/generator and pump to various water troughs throughout the ranch. Balcones Creek bisects the ranch in the north portion. Balcones Creek includes

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potholes of water, and was flowing on the date of property inspection due to recent rain. Rundale Creek bisects the ranch in the north central portion. Rundale Creek is a wet weather creek. Portions of Rundale Creek have potholes of water in wet weather times.

Fencing
Rancho Sierra has low perimeter fencing with wood and steel posts with a combination of barbed wire and net wire. Overall, the fencing is in average condition. There are areas with older cross fencing. The south portion of the ranch is not cross fenced.

Easements and Encumbrances
The appraised property is encumbered with typical electric and utility easements. The ranch is bisected by a pipeline easement in the north portion. The pipeline easement is in favor of Enterprise.

Upon purchase of the appraised property, the GLO conducted three bird studies to identify endangered habitat on the appraised ranch. The studies were conducted circa 2007, 2008 and 2010. The results of the study were that approximately 1,958.12 acres or 84.5% of Rancho Sierra include Golden-cheeked Warbler habitat. The Golden-cheeked Warbler is a federally protected bird and endangered species by the U.S. Fish and Wildlife. In the event clearing or development on the property were to be conducted, the U.S. Fish and Wildlife would require notification and a mitigation program to allow for clearing of certain areas. The mitigation process is lengthy. For every one acre of cleared land, three acres of habitat must be replaced. "Mitigation banks" exist for the purchase of mitigation credits to develop Golden-cheeked Warbler habitat land. The impact of the habitat will be discussed in greater detail in a subsequent section of the report.

Improvements:
Rancho Sierra is improved with a ranch house, carport, and barn. The improvements are detailed as follows.

Ranch House and Carport

- The house and carport are located in a scenic area in the northern portion of the property just south of Dodge Road overlooking Balcones Creek. The two story house includes approximately 4,386 square feet of living area with 3,195 square feet on the first floor and 1,191 square feet on the second floor. The house was built circa 1980's and includes a concrete foundation with masonry-limestone exterior on the first floor and hardi-board exterior on the second floor. The house includes approximately 2,270 square feet of covered porch space. The house includes an older standing seam metal roof and central heat and air conditioning. The metal roof is in fair condition and will need replacing in the near future. It is noted that the roof shows signs of hail damage likely from the April hailstorm which impacted Bexar County. The interior of the house was not toured; however, areas of the home were inspected through windows. The interior of the home appears to include a combination of carpet and Saltillo tile flooring. Some woodpecker holes were observed in some of the siding and fascia boards. Overall, the residence is considered to be in average to fair condition.

- Carport – Adjacent to the residence is a 954 square foot carport. Approximately 634 square feet of the carport includes three open parking bays with the balance being enclosed. The carport is constructed with a concrete slab, combination of masonry and wood exterior with metal roof. The enclosed portion includes carpet flooring with a window AC unit and exposed walls. The carport is connected to the single family residence by a covered walkway. The overall condition is fair to average.

- Site improvements surrounding the ranch house and carport include a flag stone patio located at the rear of the house, asphalt paved circular drive, greenhouse with enclosed lean-to, and 4,000 gallon concrete water cistern. The immediate area of the residence and carport are attractively landscaped with wood cedar fencing and flower beds and grass. Much of the fencing is "falling down" and is in need of repair and deferred maintenance.

- Metal Barn – Includes approximately 1,842 square feet and was constructed circa 1990's. The barn is constructed with a combination concrete slab and dirt floor. The barn is enclosed on three sides with a metal roof, metal exterior and steel frame. The barn also includes a separate set of pens for horses and livestock.

Adjacent to the barn is a fenced pen area with a former enclosed cooler which is currently being used as a livestock pen. Adjacent to the former cooler is a wash bay for horses with a concrete floor. The area is covered with a metal roof with wood supports.

Additional improvements on the ranch include an approximate 576 square foot covered area located in the central portion. The covered area has two bays and can be used to park RVs, equipment, etc. The area overlooks the south portion of the ranch.

Overall, the main improvements are older but attractively designed and adequately maintained. The improvements contribute value above the underlying land.

In summary, Rancho Sierra is a recreational and working ranch close to San Antonio and Boerne. The ranch is mostly located in the northwest quadrant of Bexar County in the path of development. The Golden-cheeked Warbler habitat on the appraised property hinders development in that mitigation credits must be purchased in the event portions of the property are cleared.

"As Is" Valuation Considering the Golden-cheeked Warbler Habitat

In Valuation Scenario 2 – the valuation of Rancho Sierra considering the Golden-cheeked Warbler habitat, the appraisers have interviewed several market participants including the offices of the City of San Antonio, Edwards Aquifer Authority, Pape-Dawson Engineers, and real estate brokers familiar with the area and related habitat. The Golden-cheeked Warbler, also known as the "Gold Finch of Texas", is an endangered bird species that nests in central Texas. The Golden-cheeked Warbler is the only bird species with a nesting/mating range confined to Texas. The birds nest in cedar and live oak trees in ravines in canyons. The birds migrate to Texas in March to nest and raise their young, and leave in July to spend the winters in Mexico and Central America. The Golden-cheeked Warbler is a federally protected bird since it was listed on the endangered species list circa May 1990.

In July 2005, the General Land Office for the Benefit of the Permanent Public School Fund purchased the appraised property. Upon purchasing the property, the owner conducted three bird studies to identify Golden-cheeked Warbler habitat. The first model was conducted by Diamond in 2007; the second model was conducted by Loomis in 2008; and the third model was conducted by the Texas A&M Institute of Renewal and Natural Resources circa 2010. The three assessments serve as the biological value of Rancho Sierra to be used by the U.S. Fish and Wildlife Service to determine the amount of acres impacted by bird habitat.

A summary of the three models predictions regarding potential nesting/mating habitat on Rancho Sierra follow.

Model	Survey Year Date	High Quality Habitat	Medium Quality Habitat	Low Quality Habitat	Total Acres
Diamond	2007	1,484.51	149.92	155.03	1,789.46
Loomis	2008	832.82	775.08	350.21	1,958.12
Texas A&M IRNR	2010	1,870.84		4.58	1,875.43

Based on the models, the usable area unsuitable for Golden-cheeked Warbler nesting ranges from 358.33 to 526.99 acres out of approximately 2,316.45 acres.

As the result of the three models and studies being conducted and evidenced, the current owner has the responsibility to report and mitigate the bird habitat on the appraised property in the event portions of the property are cleared. Since the Golden-cheeked Warbler is a federally protected endangered species, the owner of the property would be required by law to mitigate the land area cleared for development by replacing three acres of habitat for every cleared acre. Mitigation credits can be applied by either dedicating permanent habitat on Rancho Sierra for Warbler habitat, or purchasing credits from mitigation bank properties.

Mitigation credits are determined by the U.S. Fish and Wildlife. U.S. Fish and Wildlife determines the credits by a series of studies which identify Golden-cheeked Warbler habitat on a specific property. The property is then listed in a "mitigation bank" with the U.S. Fish and Wildlife. Developers who require mitigation credits can purchase the credits from various land owners to offset developed land. The ratio of mitigation credits to developed land is typically three to one. Essentially, for every one acre of developed land, three acres of permanent habitat must be replaced. It is understood that the mitigation credits cost from $3,000 to $5,000 per credit. Taking the average of the credits, say $4,000 per credit,

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would require a potential developer of Rancho Sierra to potentially pay $13,000 per acre to fully develop 100% of the impacted acreage. Based on the market value of the appraised property, and potential retail pricing of developed lots in the market area, it is not currently feasible to purchase mitigation credits for the full development of Rancho Sierra. Feasible development would require lot pricing to be in the $40,000 to $50,000 per acre range with a low basis in the land.

Pape-Dawson Engineers analyzed Rancho Sierra under two different development plans. The first plan included a 360 lot development with an average lot size of 1.3 acres. The development option would impact roughly 500 acres and would require the balance of the land to be used for mitigation credits for the development. The development of the 360 lots averaging 1.3 acres is highly unlikely at this time, as there are several opportunities for other development land which is not impacted by Golden-cheeked Warbler habitat in the market area. This scenario could potentially be likely in the distant future as San Antonio grows and surrounding land tracts are developed. The second scenario includes the development of 180 lots averaging 20 to 75 acres. This development plan impacts 221 acres. This development plan would allow for additional land to be used for mitigation bank credits and sold in the open market. There is currently on property in proximity to the Rancho Sierra listed with U.S. Fish and Wildlife with mitigation credits available. A recent ranch sale with mitigation credits has occurred; however, the sale was for recreational uses.

Rancho Sierra has the potential to offer 1,958.12 credits to the market. With recent home sales, and the expectation for homebuilding to increase in the near future, it appears demand for the mitigation credits has increased.

Discussions with various market participants have been conducted to ascertain the impact of the Golden-cheeked Warbler habitat on Rancho Sierra's market value. A summary of the discussions with the canvassed parties follows.

- Susan Courage – Edwards Aquifer Authority – Ms. Courage works with the Edwards Aquifer Authority and is directly associated with endangered species and mitigation credits. Ms. Courage reports that since the models have been conducted on Rancho Sierra, mitigation credits must be purchased and applied to Rancho Sierra to develop the property. Ms. Courage reports that a conservation easement could be placed on the property; however, the conservation easement is restrictive since portions of the property cannot be utilized during the nesting/mating season of the Golden-cheeked Warbler. Ms. Courage also states that in the event the property was put into a mitigation bank, mitigation credits could be sold ranging from $3,000 to $5,000 per credit.

- Gene Dawson – Partner, Pape-Dawson Engineers – Mr. Dawson conducted a biological resources assessment on Rancho Sierra and utilized the three previously noted models to ascertain development possibilities for Rancho Sierra. Mr. Dawson reports that Rancho Sierra is a prime candidate for entering into a mitigation bank and applying mitigation credits to the market. Mr. Dawson also reports that in the event Rancho Sierra were developed, the balance of the land would more than likely be required to be utilized for mitigation or permanent Golden-cheeked Warbler habitat to potentially develop approximately 500 acres of the ranch.

- Jesse McClain – Bandera Conservation Bank Manager – Mr. McClain states conservation credits are being sold for $5,000 per credit. He states the demand has increased slightly in the last two years due to the increase in development.

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In our opinion and based on the above, the Golden-cheeked Warbler habitat limits certain property rights related to clearing and developing the ranch. Approximately 500 acres could be developed, but the balance of the land would be required to be put into permanent habitat. The ranch could be put in a mitigation bank, and credits could be marketed; however, the demand for mitigation credits is not strong at this time.

To ascertain the impact of the Golden-cheeked Warbler habitat on Rancho Sierra, the appraisers have conducted a search for land sales which have sold with habitat in place. The appraisers are aware of three transactions which have sold with habitat.

- The first encumbered sale (Sale No. 6) is an August 2013 sale located just north of the appraised property, along State Highway 46, which is impacted with Golden-cheeked Warbler habitat, and was in a mitigation bank prior to selling. The sale is the Majestic Arts Foundation Ranch, and is located just north of Rancho Sierra long S.H. 46. The appraisers have utilized and additional unencumbered sale (Sale No. 7) of 1,147.48 acres which sold December 2012, and is located along Ranger Creek Road in Kendall County for pairing purposes.

- The second encumbered sale (Sale No. 8) is 1,521.26 acres which sold March 2011, and is located along the southern boundary of Sale No. 4 in Comal County. The property was purchased and then deeded to the Nature Conservancy in return for mitigation credits.

- The third encumbered sale (Heep Ranch) is a June 2015 sale located in Hays County near Kyle, and along the Blanco River which is impacted with Golden Cheeked Warbler Habitat.

A map illustrating the location of Sale No. 6 in relation to Rancho Sierra, and a sales data sheet follows on the next several pages.

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Case Study – Matched Pair Analysis No. 1

As noted in the sale sheet, Sale No. 6 includes approximately 503 acres of Golden-cheeked Warbler habitat located just north of the subject along State Highway 46. The appraisers have conducted a matched pair analyses of two sales without bird habitat - Sale No. 7 (Wall Ranch) and Sale No. 8 (MFP Realty) with Sale No. 6 (Majestic Arts Foundation) with bird habitat to arrive at an adjustment for Golden-cheeked Warbler habitat.

After adjustments to Sale Nos. 7 and 8 as compared to the Sale No. 6, the indicated adjustment for the Golden-cheeked Warbler habitat ranges from 52% to 57%.

Details related to the matched paired analysis follows.

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Case Study – Matched Pair Analysis No. 2

The second matched pair analysis is a comparison of two sales out of the same parent ranch. Sale No. 9 is the March 2011 sale located along the southern boundary of Sale No. 4. Approximately 95% of the sale property's (Sale No. 9) land area is Golden-cheeked Warbler Habitat. Both sales sold from the same seller to different buyers. The encumbered sale was purchased for mitigation credits for a different development.

After adjustments to Sale No. 4 compared to Sale No. 9, the control sale, the indicated adjustment for the Golden-cheeked Warbler habitat is 28%. Details related to the matched paired analysis follows.

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Case Study – Heep Ranch – Hays County, Texas

The Heep Ranch is a 2,166.43 acre ranch located 2.5 miles west of downtown Kyle. The ranch includes 1.24 miles of Blanco River frontage. Approximately 136 acres of the ranch is located in the Kyle City Limits with the balance in the Kyle ETJ.

Prior to the sale, the grantor evaluated the likely sale price of the property without bird habitat. The likely selling price was estimated to be $12,000 to $13,000 per acre. The property sold for $8,000 per acre indicating an approximate 40% discount for the habitat.

A sales sheet for the Heep Ranch follows.

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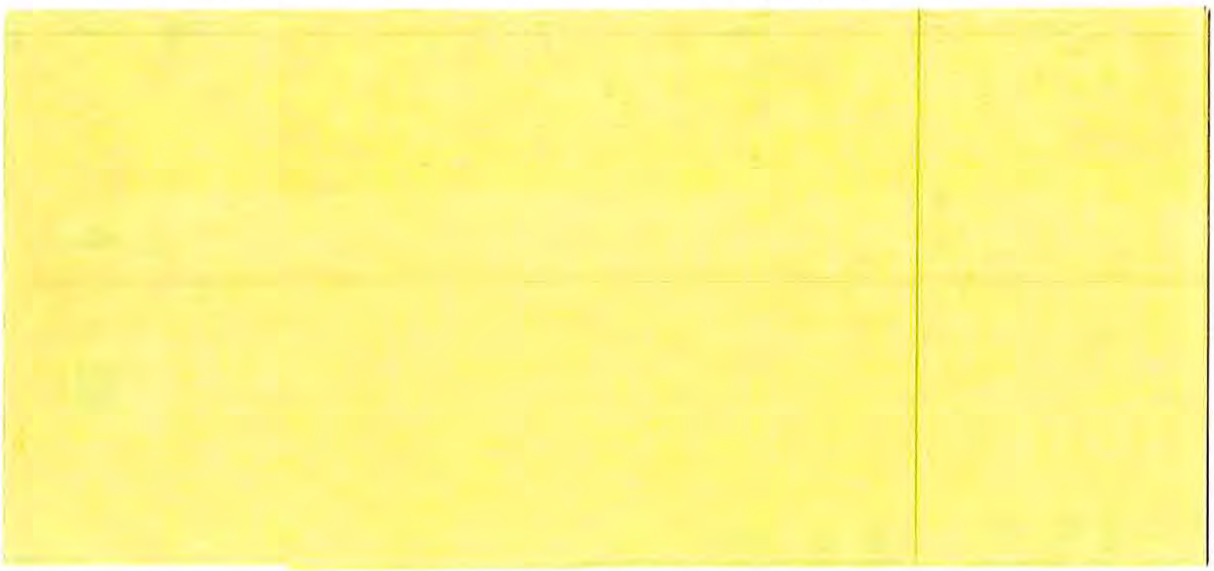
Conclusions

Rancho Sierra is located in northwestern Bexar County in the development growth path of San Antonio. The ranch is heavily impacted by Golden-cheeked Warbler habitat as modeled in the three separate studies. The designated bird habitat negatively affects the market value of the property since a potential purchaser would be required to mitigate the habitat in the event areas of the ranch were cleared. A summary of the various studies related to the Golden-cheeked Warbler habitat follows.

Impact of Golden-cheeked Warbler Habitat from Various Sources

- Case Study No. 1 - 52% to 57%
- Case Study No. 2 – 28%
- Case Study - Heep Ranch 40%
- Conservation Easement Studies – 15% to 41%, 39% Average

The analyzed case studies via matched pair sales analysis and discussions with the listing broker of the Majestic Arts Foundation Ranch indicate an impact of 15% to 57% to the appraised property for the Golden-cheeked Warbler habitat. In our opinion, the discount related to the Golden-cheeked Warbler habitat on Rancho Sierra is estimated to be in the middle of the range, say 35%.



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CERTIFICATE OF SERVICE

I hereby certify that on May 15, 2018, I electronically filed the foregoing with the Clerk of the Court for the United States District Court for the Western District of Texas by using the CM/ECF system, which will serve a copy of the same on the counsel of record.

/s/ Theodore Hadzi-Antich
THEODORE HADZI-ANTICH