FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

KERN COUNTY FARM BUREAU; KERN COUNTY WATER AGENCY; NORTH KERN COUNTY WATER STORAGE DISTRICT; COALITION OF PRIVATE PROPERTY RIGHTS; ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT; SEMITROPIC WATER STORAGE DISTRICT; WHEELER RIDGE MARICOPA WATER STORAGE DISTRICT; COUNTY OF KERN, *Plaintiffs-Appellants,* v. DAVE ALLEN, Regional Director of the U.S. Fish and Wildlife Service, Region 1; STEVEN A. WILLIAMS, Director of the U.S. Fish and Wildlife Service; GALE A. NORTON, Secretary of the Interior; UNITED STATES DEPARTMENT OF THE INTERIOR; U.S. FISH AND WILDLIFE SERVICE, *Defendants-Appellees,* and CENTER FOR BIOLOGICAL DIVERSITY, *Intervenor-Defendant-Appellee.*	No. 04-15540 D.C. No. CV-02-05376-AWI OPINION

Appeal from the United States District Court
for the Eastern District of California
Anthony W. Ishii, District Judge, Presiding

Argued and Submitted
February 16, 2006—San Francisco, California

Filed June 20, 2006

Before: J. Clifford Wallace, Michael Daly Hawkins, and Sidney R. Thomas, Circuit Judges.

Opinion by Judge Hawkins

COUNSEL

Robert D. Thornton, Nossaman, Guthner, Knox & Elliott, Irvine, California, for the plaintiffs-appellants.

Matthew J. Sanders, U.S. Department of Justice, Environmental & Natural Resources Division, Washington, D.C., for the defendants-appellees.

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OPINION

HAWKINS, Circuit Judge:

Kern County Farm Bureau, et al. ("Kern"), appeal from the district court's judgment denying their claim against the U.S. Fish & Wildlife Service ("FWS") for listing the Buena Vista Lake shrew ("the BVL shrew") as an endangered species, contending that FWS violated the Endangered Species Act ("ESA") and the Administrative Procedure Act ("APA") by failing to provide public review and comment on new studies that became available after the close of the comment period, not basing its listing decision on the best scientific data available, not summarizing the data underlying its decision, and not showing the relationship between the data and its decision. Because the post-comment information was only important, not critical, to FWS's decision, and given the deference owed to agencies in making such scientifically-based decisions, we affirm the district court's judgment.

I. Factual History

The BVL shrew is a subspecies of ornate shrews endemic to Kern County, California. 67 Fed. Reg. 10101 (Mar. 6, 2002) (codified at 5 C.F.R. pt. 17). Fewer than thirty are known to exist. *Id.* at 10110.

On June 1, 2000, FWS published a rule proposing to list the BVL shrew as an endangered subspecies under the ESA. 65 Fed. Reg. 35033 (June 1, 2000). The proposal explained that only thirty-eight BVL shrews had been observed since their rediscovery in 1986, and that the only known population existed in a small wetland area on private property. *Id.* at 35033-34. The proposal emphasized that the amount of suitable habitat for the BVL shrew had been significantly reduced while noting that additional patches of habitable land in the area that might have supported the BVL shrew were "marginal at best and would not likely [have] support[ed] a signifi-

cant number of animals." *Id.* at 35036 (citation omitted). The Proposed Rule explained that this "loss and fragmentation of habitat due to human activities" was "[t]he primary cause of decline of the [BVL] shrew." *Id.* Additionally, FWS found that the BVL shrew was threatened "by agricultural activities, modifications and potential impacts to local hydrology, uncertainty of water delivery . . . , possible toxic effects from selenium poisoning, and by random naturally occurring events." *Id.* at 35038. FWS concluded that there was a high probability that these threats would have "result[ed] in the extinction of the [BVL] shrew . . . ." *Id.*

FWS opened a sixty-day comment period for the proposal, seeking information about threats to the BVL shrew, locations of any additional populations, and "the range, distribution, and population size and genetics of this subspecies." *Id.* at 35039. FWS then reopened the comment period for another sixty days "to provide all interested parties additional opportunity to . . . [comment] on the proposal." 65 Fed. Reg. 49530 (Aug. 14, 2000). Further, FWS "solicited the expert opinions of five independent specialists regarding the biological and ecological information about the [BVL] shrew contained in the proposed rule." 67 Fed. Reg. at 10105. Of the four peer reviewers who responded within the comment period, three "stated that the proposed rule was an accurate summary of the species biology and status," while one "felt that additional surveys and improved management of known populations . . . could eliminate the need to list the species." *Id.* at 10106. Ultimately, three supported the listing, while the fourth remained neutral.[1]

After the comment period, but before issuance of the Final Rule, three new studies became available. Two of the studies dealt with morphological and genetic variations among the multiple subdivisions of ornate shrews, while the third

[1]The fifth peer reviewer, Daniel Williams, responded one year after the open comment period and recommended postponing the listing.

assessed the distribution, habitat, and status of the BVL shrew. *See infra* Section IV.A. Following the release of these new studies, FWS did not reopen the public comment period. Instead, on March 6, 2002, it published the Final Rule listing the BVL shrew as an endangered subspecies. 67 Fed. Reg. at 10101. The Final Rule responded to various comments on the Proposed Rule and incorporated some of the data from the new studies. Nevertheless, it listed factors nearly identical to those mentioned in the Proposed Rule to justify its listing decision and concluded that listing the BVL shrew as endangered was "the preferred action." 67 Fed. Reg. at 10110.

Kern soon thereafter filed its complaint, primarily alleging various APA and ESA violations. After a bench trial, judgment was entered in favor of FWS, and Kern filed this appeal.

II. Statutory Framework

The APA requires federal agencies to publish a general notice of proposed rule making in the Federal Register to "give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation," and "[a]fter consideration of the relevant matter presented, . . . [to] incorporate in the rules adopted a concise general statement of their basis and purpose." 5 U.S.C. § 553(b)-(c); *see also* 16 U.S.C. § 1533(b)(4) (ESA listing decisions must comply with the APA, 5 U.S.C. § 553).

Under the ESA, an endangered species is "any species which is in danger of extinction throughout all or a significant portion of its range . . . ." 16 U.S.C. § 1532(6).[2] A "species" includes "any subspecies of . . . wildlife . . . and any distinct population segment of any species of . . . wildlife which interbreeds when mature." 16 U.S.C. § 1532(16). The decision to

[2]FWS is one of the agencies responsible for administering the ESA. *See* 50 C.F.R. § 402.01(b) (1986).

list a species as endangered is based on five statutorily prescribed factors, any one of which may support a listing determination: (1) "the present or threatened destruction, modification, or curtailment of its habitat or range;" (2) "overutilization for commercial, recreational, scientific, or educational purposes;" (3) "disease or predation;" (4) "the inadequacy of existing regulatory mechanisms;" or (5) "other natural or manmade factors affecting its continued existence." 16 U.S.C. § 1533(a)(1)(A)-(E).

Listing determinations must be made "solely on the basis of the best scientific and commercial data available . . . ." 16 U.S.C. § 1533(b)(1)(A). Additionally, FWS must include in any proposed or final listing decision "a summary . . . of the data on which such regulation is based and [must] show the relationship of such data to such regulation . . . ." 16 U.S.C. § 1533(b)(8).

III. Standard of Review

The APA provides that final agency action shall be set aside if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law," or if it is taken "without observance of procedure required by law." 5 U.S.C. § 706(2)(A), (D); *accord Idaho Farm Bureau Fed'n v. Babbitt*, 58 F.3d 1392, 1401 (9th Cir. 1995). The arbitrary and capricious standard is "highly deferential, presuming the agency action to be valid and [requires] affirming the agency action if a reasonable basis exists for its decision." *Indep. Acceptance Co. v. California*, 204 F.3d 1247, 1251 (9th Cir. 2000) (quotations and citations omitted). Under such deferential review, we may not substitute our judgment for that of the agency. *Marsh v. Or. Natural Res. Council*, 490 U.S. 360, 376 (1989).

Unlike substantive challenges, however, our review of an agency's procedural compliance is exacting, yet limited. *See Coalition For Gov't Procurement v. Fed. Prison Indus., Inc.*,

365 F.3d 435, 457 (6th Cir. 2004) (citing *Natural Res. Def. Council, Inc. v. SEC*, 606 F.2d 1031, 1045, 1048-49 (D.C. Cir. 1979)); *Campanale & Sons, Inc. v. Evans*, 311 F.3d 109, 116 (1st Cir. 2002). We review de novo but are limited to ensuring that " 'statutorily prescribed procedures have been followed.' " *Campanale & Sons*, 311 F.3d at 116 (quoting *Natural Res. Def. Council, Inc.*, 606 F.2d at 1045). Further, we determine "the adequacy of the agency's notice and comment procedure, without deferring to an agency's own opinion of the . . . opportunities it provided." *Natural Res. Def. Council v. EPA*, 279 F.3d 1180, 1186 (9th Cir. 2002).

IV. Discussion

A. Notice and Comment for New Studies

[1] Integral to an agency's notice requirement is its duty to "identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules. An agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary." *Solite Corp. v. EPA*, 952 F.2d 473, 484 (D.C. Cir. 1991) (quotations, punctuation, and citation omitted). Yet, "[n]othing prohibits [an a]gency from adding supporting documentation for a final rule in response to public comments." *Rybachek v. EPA*, 904 F.2d 1276, 1286 (9th Cir. 1990). After publishing a proposed rule, agencies often receive new information, which in turn improves the accuracy of agency action:

> It is perfectly predictable that new data will come in during the comment period, either submitted by the public with comments or collected by the agency in a continuing effort to give the regulations a more accurate foundation. The agency should be encouraged to use such information in its final calculations without thereby risking the requirement of a new comment period.

BASF Wyandotte Corp. v. Costle, 598 F.2d 637, 644-45 (1st Cir. 1979).

[2] Accordingly, the public is not entitled to review and comment on every piece of information utilized during rule making. Instead, an agency, without reopening the comment period, may use "supplementary data, unavailable during the notice and comment period, that expands on and confirms information contained in the proposed rulemaking and addresses alleged deficiencies in the pre-existing data, so long as no prejudice is shown." *Idaho Farm Bureau Fed'n*, 58 F.3d at 1402 (quoting *Solite Corp.*, 952 F.2d at 484) (internal quotations omitted).

In *Idaho Farm Bureau Federation*, we held that FWS committed procedural error in listing the Bruneau Hot Springs Snail as an endangered species because it failed to provide the public with an opportunity to review and comment on new material in the record. 58 F.3d at 1404. The new material "did not merely supplement or confirm existing data," but rather "provided the only scientific information on the cause of the decline in [the Snail's habitat,]" and, therefore, constituted "unique information that was not duplicated in other reports." *Id.* at 1402-03. The need for notice and comment was "greatly heightened because FWS relied largely on the [new] study to support its final rule." *Id.* at 1403. In particular, the study "was critical to FWS'[s listing] decision," because "FWS support[ed] its key analysis by citing the [new] study." *Id.* at 1403; *see also Ober v. EPA*, 84 F.3d 304, 314-15 (9th Cir. 1996) (reopening the public comment period because the additional materials were relied on and "critical" to the agency's decision). Additionally, the need for public comment was exacerbated by the questionable accuracy of the new study.[3] We noted that in *Idaho Farm Bureau Fed'n*, 58 F.3d at 1403,

[3]The report was a provisional draft that the FWS did not want released to the public and was discovered to have had several errors. *Idaho Farm Bureau Fed'n*, 58 F.3d at 1403.

the "[o]pportunity for public comment is particularly crucial when the accuracy of important material in the record is in question."

In contrast, the D.C. Circuit, in *Solite Corp.*, upheld the EPA's failure to provide a public opportunity to comment on new data used in the Final Rule. 952 F.2d at 484-85. The EPA had "replaced one report with a later report as the source of data on which final quantitative measurements were based." *Idaho Farm Bureau Fed'n*, 58 F.3d at 1402 (explaining *Solite Corp.*, 952 F.2d at 484). In affirming the EPA's actions, the court found it significant that the accuracy of the new data was not challenged, that the record did not suggest that the agency hid the information or conducted rule making in bad faith, that the new data confirmed prior assessments, and that the agency's methodology remained constant. *Solite Corp.*, 952 F.2d at 484-85.

Here, the first post-comment study was a range-wide genetic study of 251 shrew specimens by Dr. Jesus Maldonado. Jesus E. Maldonado, et al., *Tripartite genetic subdivisions in the ornate shrew* (Sorex ornatus), 10 MOLECULAR ECOLOGY 127 (2001) [hereinafter *2001 Maldonado Study*]. This study evaluated genetic variations among ornate shrews at twenty localities and postulated that ornate shrews in California could be organized into three "clades" — northern, central (to which the BVL shrew belongs), and southern.[4] *Id.* The study noted that "[t]he ornate shrew is one of the most threatened small mammals" in California, "primarily due to destruction of wetlands and riparian habitats . . . ." *Id.* at 143. The study did not purport to change the taxonomic classification of the BVL shrew, referring to it as a separate subspecies. *Id.*

[4]A clade is a "group of organisms, such as a species, whose members share homologous features derived from a common ancestor." *American Heritage Dictionary of the English Language* (4th ed. 2000), *available at* http://www.bartleby.com/reference.

A second post-comment study, also conducted by Dr. Maldonado,[5] examined the morphological characteristics of over 500 ornate shrew skulls throughout the species' range to determine if any differences existed, and, if so, whether they corresponded to the three genetic clades identified in his 2001 study. *See* Jesus E. Maldonado, *Discordant Patterns of Morphological Variation in Genetically Divergent Populations of Ornate Shrews* (Sorex Ornatus) (forthcoming 2004) [hereinafter *Morphological Study*]. Maldonado found "significant morphological differences between ornate shrew populations," which did not correspond to the three genetic clades he had previously identified. *Id.* at 12. Further, the morphological differences between subspecies "seem[ed] to portray the patterns of variation [between shrew populations] better than the genetic regions" identified in the *2001 Maldonado Study*. *Id.* He concluded that the "current boundaries for the seven subspecies that were analyzed in [the] study[ ] correspond[ed] to morphological divergence and should therefore continue to be considered [Evolutionarily Significant Units]."[6] *Id.* at 13.

The third post-comment study, authored by Daniel Williams and Adam Harpster, assessed "the distribution, habitat association, and population status of the [BVL] shrew" by trapping for shrews at six sites.[7] *See* Daniel Williams & Adam Harpster, *Status of the Buena Vista Lake Shrew* (Sorex Ornatus Relictus) (Oct. 29, 2001) (unpublished report, on file with the U.S. Bureau of Reclamation) [hereinafter *Status Review*]. The trapping caught sixteen shrews at three of the six sites. *Id.*

[5]This study was unpublished during the rule making process, but was later published. *Discordant Patterns of Morphological Variation in Genetically Divergent Populations of Ornate Shrews* (Sorex Ornatus), 85 J. OF MAMMOLOGY 886 (2004).

[6]An Evolutionarily Significant Unit is "a set of populations that has been historically isolated and, accordingly, is likely to have a distinct potential." *Id.* at 13 (quotations and citation omitted).

[7]The study was commissioned by the Central Valley Project Improvement Act and administered, in part, by FWS.

at 9. These three additional BVL shrew populations were discovered in wetland and riparian habitat that had been reduced to "10 small, degraded, and scattered remnants . . . ." *Id.* at 10. The *Status Review* speculated "that ornate shrews may reside on actively farmed ground, or . . . cultivated fields," but limited its hypothesis to ornate shrews generally (not BVL shrews), and based its belief on a survey of "unknown significance." *Id.* at 13-14. Further, it surmised that BVL shrews "also rarely will be found in more arid, upland communities," but noted that such communities "are extremely reduced and isolated in small parcels," and "might provide extremely low quality habitat for [BVL] shrews . . . ." *Id.* at 13.

Although the study deduced that "measures to conserve and enhance [BVL shrew] populations are justified," and cautioned that it "[did] not have insight into the size and extent of [BVL shrew] populations," the authors did "not believe that [BVL] shrews are endangered now, nor are there foreseeable threats to remaining populations in the near future." *Id.* at 16. It reached this conclusion, in part, by noting that several possible initiatives in the region "hold great promise for greatly enhancing populations of [BVL] shrews." *Id.* Still, the study found that "the long-term persistence of [BVL] shrews depends upon maintenance of riparian and wetland communities in the southern Tulare Basin . . . and enhancing the size and connectivity between the small and mostly isolated habitats where the shrews currently are found." *Id.*

Like the petitioners in *Solite Corp.*, Kern does not point to inaccuracies in the new studies. *Id.* at 484. Nor does the record suggest that FWS hid the information from the public or conducted rule making in bad faith. Rather, Kern contends that the new studies were critical to the listing decision.

The district court correctly concluded that the new studies merely supplemented the data in the Proposed Rule. Unlike the post-comment study in *Idaho Farm Bureau Federation*, the new materials do not provide the sole, essential support

for the listing decision. Instead, as in *Solite Corp.*, the studies confirm and expand on existing data, providing additional grounds for the well-supported conclusions in the Proposed Rule. *Id.* at 485. Moreover, the new studies did not alter the justifications or conclusions that were vital to the listing decision. Just like the Proposed Rule, FWS concluded in the Final Rule that the BVL shrew was a distinct subspecies threatened with extinction, explaining that few BVL shrews remain, that the amount of suitable habitat has been significantly reduced, and that several factors jeopardize the BVL shrew's continued existence. Indeed, the entire discussion of the extinction factors in the Final Rule strongly resembles the factors provided in the Proposed Rule. *Compare* 67 Fed. Reg. at 10106-10 *with* 65 Fed. Reg. at 35036-38.

Despite the limited use of the new studies and the analytical symmetry between the two rules, Kern argues that further notice and comment was required, basing its claim on three assertions: (1) the new studies provided crucial information on whether the BVL shrew is a distinct subspecies; (2) the new studies provided crucial information on whether the BVL shrew is in danger of extinction; and (3) the new studies undermined the listing decision.

1. Subspecies Distinction

[3] To be eligible for an endangered species listing, an animal must first be classified, at a minimum, as a distinct subspecies. *See* 16 U.S.C. § 1532(16). FWS used the *2001 Maldonado Study* and the *Morphological Study* in the Final Rule only to describe further the distinct morphological and genetic characteristics of the BVL shrew subspecies. 67 Fed. Reg. at 10101. FWS sought to "add depth" to its morphological discussion by incorporating these studies into the Final Rule. The Proposed Rule primarily supported the conventional conclusion that the BVL shrew is a distinct subspecies by citing to a 1932 study by Dr. Grinnell, which, according to FWS, is the only scientifically valid, peer-reviewed, and

published taxonomic treatment of the BVL shrew. 65 Fed. Reg. at 35033-34. The Maldonado studies confirmed FWS's previous conclusion by providing additional data on the BVL shrew's morphological and genetic characteristics. Having reached an identical conclusion that affirmed its already-supported subspecies classification, FWS's use of the Maldonado studies in the Final Rule was far from critical to its listing decision.

2. Danger of Extinction

[4] Upon concluding that the BVL shrew was a distinct subspecies, FWS sought to determine whether the shrew was "in danger of extinction throughout all or a significant portion of its range . . . ." 16 U.S.C. § 1532(6). FWS found that few BVL shrews remained and determined that several factors subjected the BVL shrew to a substantial risk of extinction throughout its range. The Final Rule used the *Status Review* to expand on its discussion of the BVL shrew's population and range, integrating the *Status Review*'s data with all that was known and cited in the Proposed Rule. Some of the revisions provided by the *Status Review* were unquestionably significant. In discovering three new populations of BVL shrews, the *Status Review* nearly doubled the number of known shrews to thirty. Further, the *Status Review* provided more detailed information on the current range of the BVL shrew and on the suitability of various habitats. None of the new information, however, adversely affected FWS's underlying reasons for its conclusion.[8] The *Status Review*'s data simply supplemented the existing data, confirming that few BVL shrews existed and that their most suitable habitat remained fragmented, degraded, and scattered. *Status Review* at 10-12. Because the *Status Review* provided useful data that supplemented FWS's existing understanding of the BVL shew, but

[8]One FWS official found that the *Status Review* "ma[de] a stronger case for listing than delisting," while another determined that the data from the *Status Review* "d[id] not change the conclusion for the final rule."

did not alter the primary conclusions from the Proposed Rule, it was not critical to FWS's decision.

3. Listing Decision Validity

Kern's primary objection to FWS's use of the *Status Review* essentially emanates from the *Status Review*'s opposing conclusion that the BVL shrew should not be listed as endangered. Despite the conflicting opinion, FWS concluded that the data from the *Status Review* was consistent with its listing decision. Kern's concern is misplaced because FWS is not required to accept the *Status Review*'s conclusion, but rather simply must use the *Status Review*'s data in reaching its listing decision. *See infra* Section IV.B; 16 U.S.C. § 1533(b)(1)(A). To the extent that Kern disputes FWS's interpretation of the data in the new studies or seeks an evaluation of FWS's data and conclusion, its claim constitutes a substantive challenge to the listing decision.

In fact, much of Kern's argument appears to be a substantive claim couched in alleged procedural violations. Kern's principal contention is less concerned with the degree to which the Final Rule relies on the new studies than it is on the extent to which the new studies undercut the Final Rule. Kern initially presents a procedural argument that the new studies were critical to the listing decision and thus require public comment, but then spends most of its analysis attempting to demonstrate how the three studies actually undermine the key premises in FWS's listing decision (a substantive issue meriting the more stringent arbitrary and capricious review). Kern's procedural claims thus appear inextricably intertwined with its substantive contention that FWS misinterpreted the information from the new studies. Because Kern emphasizes that it only raises procedural violations in this appeal, however, such substantive issues are not properly before us.

4. Conclusion

[5] Ultimately, the new studies were not vital to FWS's decision as they were not used to introduce a new premise, to

justify independently the final decision, or to reach a different conclusion. Instead, the Final Rule discusses virtually identical factors as those in the Proposed Rule in deciding to list the BVL shrew. Having used the new studies merely to refine and expand on its pre-existing data, FWS was not required to reopen the public comment period.

B. Best Scientific Data Available

[6] Kern argues that FWS failed to utilize the data from the three studies in reaching its listing decision and, therefore, violated the ESA's requirement to base its determination on the "best scientific and commercial data available." 16 U.S.C. § 1533(b)(1)(A). The best available data requirement "merely prohibits [an agency] from disregarding available scientific evidence that is in some way better than the evidence [it] relies on." *Southwest Ctr. for Biological Diversity v. Babbitt*, 215 F.3d 58, 60 (D.C. Cir. 2000) (quotations omitted). Essentially, FWS "cannot ignore available biological information." *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988).

[7] Because Kern "point[s] to no data that was omitted from consideration," *Building Indus. Ass'n of Superior California v. Norton*, 247 F.3d 1241, 1246 (D.C. Cir. 2001) (quotations omitted), this second claim also fails. "[A]bsent superior data . . . occasional imperfections do not violate § 1533(b)(1)(A)." *Id.* at 1247. Kern does not allege that FWS actually omitted the three new studies from the Final Rule. The Final Rule contains at least twenty citations to the three new studies. Instead, Kern's claim is hitched to its assertion that FWS misinterpreted the new studies. *See supra* Section IV.A.3. Kern essentially contends that all three studies undermine the Final Rule and, therefore, FWS "in reality ignored them."

[8] The record, however, is replete with examples to the contrary. FWS thoroughly evaluated and incorporated the data from all three studies in making its listing decision. The data

from the studies are discussed and evaluated throughout the Final Rule, and e-mail traffic from agency officials demonstrates that FWS examined the data from the new studies in promulgating the Final Rule. Without any evidence in the record that FWS ignored relevant information, we hold that FWS satisfied its duty to base its listing determinations on the best available data.

C. Relationship of Data to Listing Decision

Finally, Kern contends that FWS failed to summarize the data underlying the Final Rule and to show the relationship of the data to the Final Rule, as required by 16 U.S.C. § 1533(b)(8). Kern supports its claim by listing various questions that it claims were left unanswered by FWS. We reject Kern's attempt to mandate that FWS answer its particular questions before making a listing decision. FWS's discussion of the data and analysis of the extinction factors adequately satisfied its ESA requirements.

The Final Rule is extensively documented (citing over 100 sources) and contains abundant data and explanations supporting FWS's ultimate decision. It comprehensively describes the existing data on the BVL shrew, noting that "there are less than 30 known individuals in four populations . . . ." 67 Fed. Reg. at 10110. Such scarce numbers make the BVL shrew "extremely vulnerable" to environmental impacts and risks associated with small, restricted populations. *Id.* These risks, which can lead to extinction, include "the loss or alteration of essential elements for breeding, feeding, and sheltering; the introduction of limiting factors into the environment such as poison or predators; and catastrophic random changes or environmental perturbations, such as floods, droughts, or disease." *Id.* (citation omitted).

The Final Rule goes on to examine particular threats to the BVL shrew's continued existence, finding that (1) the "amount of suitable habitat for the [BVL] shrew has been sig-

nificantly reduced over time," resulting in the elimination of "over 95 percent of the riparian vegetation and associated marsh habitat" that could serve as suitable habitat for the BVL shrew, *id.* at 10106, (2) the water supply is unable to support ecosystem function throughout the BVL shrew's entire habitat, *id.*, (3) "[t]he small population size and restricted distribution [of BVL shrews] increases their vulnerability to epidemic diseases" and deleterious genes through inbreeding, *id.* at 10107, (4) existing regulatory mechanisms "have not been adequate in preventing the destruction of the limited [BVL] shrew habitat," *id.* at 10106-10, and (5) "[s]elenium toxicity represents a serious threat to the continued existence and recovery of the [BVL] shrew," *id.* at 10107-08. Given the "high potential that these threats could result in the extinction of the [BVL] shrew," the Final Rule concludes that "the preferred action is to list the [BVL] shrew as endangered." *Id.* at 10110. Nothing more was required of FWS and, therefore, Kern's third claim is also without merit.

V. Conclusion

[9] For the foregoing reasons, FWS adequately complied with its APA and ESA procedural requirements. Accordingly, we affirm the district court's determination that no serious or substantial reason exists to negate the listing and provide for a new comment period.

AFFIRMED.