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Public Comments Processing
Attn: Docket No. FWS-R3-ES-2015-0112
U.S. Fish & Wildlife Service, MS: BPHC
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Re: Comments of the Independent Petroleum Association of America, American Petroleum Institute, and American Exploration & Production Council on the U.S. Fish & Wildlife Service's Proposed Decision to List the Rusty-Patched Bumble Bee as Endangered under the Endangered Species Act

Dear Sir or Madam:

The Independent Petroleum Association of America (“IPAA”), American Petroleum Institute (“API”), and American Exploration & Production Council (“AXPC”) submit the following comments on the U.S. Fish & Wildlife Service’s (“Service” or “FWS”) proposal to list the rusty-patched bumble bee (“RPBB”) as an endangered species under the Endangered Species Act (“ESA”). *See* 81 Fed. Reg. 65,324 (Sept. 22, 2016) (“Proposed Listing Decision” or “Proposal”).

IPAA is a national trade association representing the thousands of independent crude oil and natural gas explorers and producers in the United States. It also operates in close cooperation with 44 unaffiliated independent national, state, and regional associations, which together represent thousands of royalty owners and the companies that provide services and supplies to the domestic industry. IPAA is dedicated to ensuring a strong, viable domestic oil and natural gas industry, recognizing that an adequate and secure supply of energy developed in an environmentally responsible manner is essential to the national economy.

API is a national trade association representing over 625 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies

that support all segments of the industry. API and its members are dedicated to meeting environmental requirements, while economically developing and supplying energy resources for consumers.

AXPC is a national trade association representing 32 of America's largest and most active independent oil and natural gas exploration and production companies. AXPC members are "independent" in that their operations are limited to exploration for and production of oil and natural gas. Moreover, its members operate autonomously, unlike their fully integrated counterparts, which operate in additional segments of the energy business, such as downstream refining and marketing. AXPC members are leaders in developing and applying innovative and advanced technologies necessary to explore for and produce oil and natural gas, both offshore and onshore, from non-conventional sources.

SUMMARY

IPAA, API, and AXPC appreciate the opportunity to comment on the Service's Proposed Listing Decision and to identify additional information that the Service should consider before taking final action. As set forth in greater detail below, IPAA, API, and AXPC comment as follows based on the information provided in the Proposed Listing Decision, the administrative record, and the additional information cited in this submission:

- In evaluating the RPBB's status, the Service incorrectly substitutes a new "overall viability" standard, which is not found anywhere in the ESA, for the statute's definition of "endangered," and fails to provide adequate information or a rationale to reconcile the two in a manner that can allow interested parties to comment meaningfully.
- The Service relies on inappropriate and unreliable data and analysis to conclude that the RPBB's population level and range have declined, has not based the Proposal on a comprehensive administrative record (and the record that it has compiled does not support the Proposal), and bases its assertions of threats to the RPBB on speculation rather than science. These issues reflect another deficiency of the Proposal – a failure to compile and use the best available scientific and commercial data – and underscore that FWS still has significant work to do before it may make a final decision on the RPBB.
- We agree that designating critical habitat is not determinable at this time. As reflected in our comments on the Proposed Listing Decision, there is insufficient scientific understanding of the RPBB's biology to allow the Service to identify the requisite physical and biological features necessary to designate critical habitat for the species.
- While the administrative record does not support the Proposed Listing Decision, if the Service ultimately concludes that a threatened listing for the RPBB is warranted, FWS should propose a special § 4(d) rule to help protect the species without unduly restricting ongoing commercial activities that have no demonstrated population level effect on the RPBB. The Service has ample authority under the ESA to develop such a § 4(d) rule and could structure it to create a program to support defined species conservation goals that FWS identifies.

- The Service should exercise its authority to extend the final listing decision deadline by six months. Doing so will provide the additional time needed to perform the significant work required to evaluate the RPBB appropriately and to consider the relevant new information and data about the RPBB discussed herein and in the submissions of industry and government commenters.

COMMENTS

I. Neither the ESA Nor the Administrative Record Supports the Proposed Listing Decision.

The ESA requires the Service to list a species as “endangered” whenever FWS concludes that the species is “in danger of extinction throughout all or a significant portion of its range.” 16 U.S.C. § 1532(6). In contrast, the Service must list a species as “threatened” if it concludes that the species “is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” *Id.* § 1532(20). To help the Service evaluate a species for potential listing, the statute enumerates five factors that the agency must consider:

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

Id. § 1533(a)(1)(A)-(E); 50 C.F.R. § 424.11(c)(1)-(5). When conducting this fact-intensive analysis, the agency must rely solely on “the best scientific and commercial data available.” 16 U.S.C § 1533(b)(1). Failure to do so renders a listing decision arbitrary and capricious. *See* 5 U.S.C. § 706.

The Proposed Listing Decision for the RPBB falls short of these requirements in at least three fundamental respects: (1) it incorrectly substitutes a new “overall viability” standard for the ESA’s “endangered” definition without harmonizing the two; (2) it bases its assertions about the RPBB’s population level and range on inappropriate, unreliable, and incomplete data that do not support FWS’s conclusions; and (3) it relies upon speculation, rather than the best data available, when applying the above listing factors. Any one of these deficiencies would render a final decision premised upon it arbitrary and capricious.

A. The Proposed Listing Decision Applies the Wrong Standard for an Endangered Listing.

The Service proposes to list the RPBB as an “endangered” species, but it does not use the ESA’s definition of that term to do so. Instead, the Proposal incorporates an entirely new standard to justify the endangered listing – “overall viability.” 81 Fed. Reg. at 65326. By abandoning the statutory definition of “endangered” in favor of this new concept, and never attempting to harmonize the two, the Proposal rewrites the most fundamental requirement for

listing a species as endangered under the ESA. That renders the Proposal unsupportable and requires FWS to withdraw the Proposed Listing Decision, prepare a new version that applies the correct standard, and issue the corrected version for public comment.

An essential aspect of any endangered listing under the ESA is the timing of the risk to the species. As discussed above, FWS must list a species as “endangered” if it determines that the species is “*in danger of extinction* throughout all or a significant portion of its range,” whereas the Service must list the species as “threatened” if it finds that the species “*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(6), 1532(20) (emphasis added). These definitions make clear that the timing of the risk influences whether a species’ condition warrants listing that species under the ESA and, if so, whether it warrants a threatened or an endangered listing. Both the federal courts and the Service recognize as much. For example, in *Defenders of Wildlife v. Norton*, the U.S. Court of Appeals for the Ninth Circuit observed that Congress designed the ESA to provide “incremental protection to species in varying degrees of danger” by differentiating between the timing of the threat to “endangered” species and “threatened” species. 258 F.3d 1136, 1142-43 (9th Cir. 2001). Indeed, the ESA “provides protection to a broader range of species by affording the Secretary the power to list animals which he determines are likely *in the foreseeable future* to become extinct, as well as those animals which are presently threatened with extinction.” *Id.* (quoting 120 Cong. Rec. 25,668 (1973) (statement of Sen. Tunney)) (emphasis in original). FWS similarly has explained that the “in danger of extinction” standard required for an endangered listing means that the species is “*currently on the brink of extinction* in the wild.” See Memorandum from Acting FWS Director Dan Ashe Re: Determination of Threatened Status for Polar Bears (Dec. 22, 2011) (“Polar Bear Memo”) (emphasis added). Yet the Proposed Listing Decision all but ignores this indispensable standard for an endangered listing.

In place of the “in danger of extinction” temporal element that Congress incorporated into the ESA’s definition of “endangered,” the Proposed Listing Decision relies on the new concept of the RPBB’s “overall viability.” The Proposal defines “viability” as “the ability of the species to persist over the *long term* and, conversely, to avoid extinction.” 81 Fed. Reg. at 65326 (emphasis added). The Proposal breaks down this “long term” viability into three conservation biology principles: (1) resiliency, “the ability of a species to withstand environmental stochasticity”; (2) representation, “the ability of the species to adapt over time to long-term changes in the environment”; and (3) redundancy, “the ability of the species to withstand catastrophic events.” See *id.* But it never explains how FWS reconciles the conflicting timing elements between the concept of “long term” viability with the statutory standard of endangerment or attempts to harmonize the two. See generally *id.* On the contrary, as discussed below, the RPBB Species Status Assessment Report (“SSA Report”), on which FWS relies almost entirely for the Proposed Listing Decision, conservatively found that RPBB populations would persist for at least 30 years, and the Proposal does not explain how that timescale equates to a species “currently on the brink of extinction.” Accordingly, the failure to rely on the ESA’s standard for listing a species as “endangered” and failure to demonstrate how the “overall viability” standard may serve as an appropriate substitute renders the Proposal arbitrary and capricious.

The significance of this error cannot be overstated. It affects every aspect of the

Service's Determination and, therefore, colors the entire Proposed Listing Decision. As a result, it is not a deficiency that FWS simply may correct in the final rule. Indeed, the Proposal must "provide sufficient factual detail and rationale for the rule to permit interested parties to comment meaningfully." *Honeywell International, Inc. v. EPA*, 372 F.3d 441, 445 (D.C. Cir. 2004) (internal quotation marks omitted). And while the final rule "need not be the one proposed," it must be a "logical outgrowth" of it, meaning that the agency "expressly ask[s] for comments on a particular issue or otherwise ma[kes] clear that the agency [is] contemplating a particular change." *CSX Transportation, Inc. v. Surface Transportation Board*, 584 F.3d 1076, 1081 (D.C. Cir. 2009). Here, the use of the wrong listing standard ensures that the Proposal lacks the sufficient rationale necessary to allow interested parties to comment meaningfully, and reworking the analysis to incorporate a different (albeit correct) standard could not satisfy the "logical outgrowth" test. FWS therefore should withdraw the Proposal, analyze the RPBB using the correct listing standard, and issue a new proposal for public review and comment if warranted under the correct standard.

B. The Species Status Data Do Not Support the Proposed Listing Decision.

The Proposed Listing Decision suffers from serious data-related flaws that undermine the Service's assertions regarding the RPBB's population level and range and ultimately its conclusion that the species warrants an endangered listing. First, the data that the Proposal cites to assert that the RPBB's population level and range have been significantly impacted in recent years are unreliable and incorrectly analyzed. Second, the Proposal fails to consider important sources of species data and analyses that are relevant to evaluating the status of the RPBB. And third, the Proposal relies almost entirely on the SSA Report's projections of the RPBB's future population level and range without accounting for the uncertainties acknowledged in that report or considering the significant epistemic uncertainties inherent in such projections that the report does not acknowledge. Accordingly, the Proposed Listing Decision is not based on the "best scientific and commercial data available." Moreover, even if the data that FWS relies on were accurate and complete and the scientific studies cited in the Proposal were comprehensive, the existing administrative record still does not justify listing the RPBB as endangered. For these reasons, the Proposal should be withdrawn.

1. The Proposal Relies on Skewed Datasets.

The primary bases for the Proposed Listing Decision are the Service's assertions that, over the past decade, the RPBB's population level has significantly declined, its range has significantly contracted, and these trends will continue in the future. But the data that FWS uses to support these conclusions are flawed, and its analyses are replete with statistical biases. In particular, the Proposal attempts to compare historical and contemporary datasets that are incommensurate and makes no valid effort to normalize them or to correct the other biases affecting the data before drawing conclusions. Those conclusions therefore are unreliable.

The Proposed Listing Decision seeks to demonstrate that the population level and range of the RPBB have decreased significantly since 2000 by analyzing two datasets – "historical" data (1900-1999) and "current" data (2000-2015). *See* 81 Fed. Reg. at 65327. Notwithstanding that those datasets represent two very different time periods (100 years vs. 16 years) in which vastly different practices were employed to generate and record species occurrence data, the

Proposal neither acknowledges nor accounts for those differences. This failure is particularly troubling given that the SSA Report on which FWS principally relies concedes the impact that such data flaws have on its analysis:

Although the database is comprised of an impressive number of records spanning more than 100 years, the data were generally collected through unsystematic, opportunistic surveys and reporting, and there are very few repeated surveys in any one location. Thus, it is difficult to compare the number of occurrences over time. Additionally, because bumble bee nest locations vary year-to-year (see Chapter 2), tracking colonies, and thus populations, over time is difficult. Furthermore, more targeted surveys were conducted in recent years by those interested in the species' apparent decline. We also have very little sampling data for 2014 and 2015.

SSA Report at 11. The failure to address these issues in the Proposed Listing Decision drastically skews the Service's analysis and invalidates the resulting conclusions.

In addition, there are at least two other significant problems with the data underlying the Proposal. First, the Service cites the SSA Report to assert that the RPBB may be at an enhanced risk because it believes that 93% of current RPBB populations are documented by low numbers of individuals (e.g., 5-10 individuals). 81 Fed. Reg. at 65327. But it neglects to mention that the SSA Report recognizes that “[b]ee populations and communities commonly experience large annual fluctuations in population size (Multiple sources in Murray et al. 2009, p. 211-212)” SSA at 51. That annual fluctuation reasonably could contribute to the lower “current” population numbers reported in the Proposal – particularly when combined with the limited data comprising the current dataset. Further, the Proposal does not explain how these current population counts compare to the historical data (e.g., whether the historical dataset consistently identifies numbers of individuals in each colony recorded; whether the historical data describes the relative health of each colony; and whether the analysis accounts for the percentage of historical information for which these data points are unknown). As a result, the two datasets provide no basis for comparison and cannot support the Proposal.

Second, as noted above, much of the historical and current data used to justify the Proposed Listing Decision are anecdotal or circumstantial because they were collected in the context of surveying for other species or based on general field observations rather than targeted RPBB surveys. *See* SSA Report at 11. In fact, it was not until 2015 that the Service published its first National Protocol Framework for the Inventory and Monitoring Of Bees. The absence, until last year, of any formal or uniform survey protocols further calls into question the accuracy of dataset comparisons using data collected across more than a century using unknown and informal methods.

In sum, the incommensurability of the datasets and the failure to acknowledge or correct other biases in the analysis casts doubt on the validity of the Proposed Listing Decision. They undermine the Proposal's conclusions regarding the RPBB's population level and range. Those problems, in turn, undermine the Proposal's conclusions regarding the RPBB's abundance, distribution, and population and colony health. And those problems, in turn, undermine the future projections regarding the RPBB's “overall viability.”

2. *The Proposal is Based on an Incomplete Record.*

The Proposal does not comply with the Service's guidelines for ensuring that ESA listing decisions consider the "best scientific and commercial data available." Those guidelines instruct FWS, in part, to (1) "gather and impartially evaluate biological, ecological, and any other information that disputes official positions, decisions, and actions proposed or taken by the Services during their implementation of the Act"; and (2) "document [its] evaluation of information that supports or does not support a position being proposed as an official agency position on a . . . listing action." FWS, Notice of Interagency Cooperative Policy on Information Standards Under the Endangered Species Act, 59 Fed. Reg. 34271 (July 1, 1994). The guidance further dictates that "[t]hese evaluations will rely on the best available comprehensive technical information regarding the status and habitat requirements for a species throughout its range." *Id.* The Proposed Listing Decision violates this policy in two crucial respects.

First, FWS has not prepared a comprehensive record of the available RPBB population and range data. In our comments on the 90-Day Finding for the species, IPAA and API urged the Service to compile and consider this outstanding data by proactively requesting all available data from each of the states within the RPBB's historic range. But there is no evidence in the SSA Report, the Proposal, or elsewhere in the administrative record that FWS took this necessary step. Nor is there any evidence suggesting that the Service proactively or systematically requested such information from the Cooperative Extensions of the USDA Natural Resources Conservation Service, which have extensive relevant information that will help to inform the analysis of the RPBB's population level, range, and available habitat. Thus, contrary to the Service's policy, there remains a large volume of important scientific and commercial data about the RPBB available that FWS has not considered yet, or it has not documented the fact that it has done so.

Second, the Service has not compiled, evaluated, and documented all information that "disputes" the official position that it has taken in the Proposed Listing Decision. As just one example, despite that IPAA and API highlighted it in our comments on the 90-Day Finding, the Service has not accounted for the information set forth in *S. Colla et al.*, Assessing declines of North American bumble bees (*Bombus spp.*) using museum species, 21 BIODIVERS. CONSERV. 3585, 3586, 3591-92 (2012). This is a significant omission because that study concludes that "yearly fluctuations in bee numbers make comparisons of modern short-term studies to long-term historical data collections problematic" and that the "presence in recent time periods for each [bumble bee species] may be underrepresented." Moreover, the 2012 Colla et al. study ultimately found that there has been no significant change in the RPBB's relative abundance over time. *See Colla et al.* at 3591. In addition, the map that the Colla study's data produced is nearly identical to the map that the Service now uses to conclude that RPBB's population and range are in significant decline. *Compare Xerxes Petition to List RPBB at 5, Figure 1 with SSA Report at Figures 4.1 and 7.6 (reproduced at 81 Fed. Reg. at 65327).* At a minimum, the fact that two different parties have come to contradictory conclusions based on virtually identical data raises substantial questions about the conclusiveness of that data. Yet the Proposed Listing Decision considers only the information that purportedly supports an endangered listing. That is contrary to the ESA's mandate to base listing decisions on the "best scientific and commercial data available."

For these reasons, we reiterate our request for the Service to compile and impartially evaluate all relevant data and analyses before making a final listing decision for the RPBB. Doing so would help to provide the environmental baseline that the Proposal currently lacks, while allowing the Service to consider and address information that contradicts its conclusions and evidences genuine scientific disagreement over the data that FWS has relied on and the findings it has made.

3. *The Proposal Fails to Account for Assumptions in the SSA Report or the Uncertainties Underlying its Projections.*

The SSA Report on which the Proposed Listing Decision relies almost exclusively acknowledges that the species survey data used to estimate the RPBB's current population level and range and to project future trends are varying and imprecise, which required the Report's authors to make a series of key assumptions to generate modeling data. *See* SSA Report at 11-12, 74. As the Report explains, “[i]nherently, predicting the future condition requires us to make plausible assumptions[, and therefore our] analyses are predicated on multiple assumptions, which could lead to over- and underestimates of viability. *Id.* at 74. While the Report acknowledges that such assumptions were necessary and includes a table listing 12 key assumptions that were made, it does not in any way analyze those assumptions or evaluate how its conclusions would be affected if one or more of those assumptions is incorrect. *See id.* Perhaps of even greater concern, the Service fails to acknowledge those crucial assumptions in the Proposal, let alone evaluate the impact on its analysis if they are wrong. *See generally* 81 Fed. Reg. 65324. That failure is contrary to FWS's policy of ensuring that “any information used by the Service to implement the Act is reliable, credible, and represents the best scientific and commercial data available.” *See* 59 Fed. Reg. at 34271.

Beyond the assumptions and uncertainties that were admitted in the SSA Report, there are deeper issues underlying the Report that neither its authors nor the Service in its Proposal have acknowledged. The scientific community has long recognized the inherent limitations and epistemic uncertainties associated with conservation biology and projections of species viability of the sort that the SSA Report presents and that FWS relies on for the Proposed Listing Decision. *See* Dale E. Goble, *Endangered Species Act: Law, Policy, and Perspectives* (Baur and Irvin, eds.) (2010) at 92 n. 19 (compiling authority and explaining that “the relevant science is also subject to substantial epistemic uncertainties,” including when “defining a ‘viable’ population”). That is because “the models that are employed to assess viability and risks are informed guesses based on (unavoidable) simplifying assumptions about something (extinction) that is itself poorly understood.” *Id.* Compounding this problem is “the fact that basic data (such as life history traits or current population) are often unknown—a problem that is likely to be particularly acute with at-risk species, which are generally uncommon and thus relatively unstudied.” *Id.* Moreover, “and most importantly, there is a question of the uncertainty associated with the risks themselves: these are ‘stochastic processes,’ that is, processes ‘in which the state of the system cannot be precisely predicted given its current state and even with a full knowledge of all the factors affecting the process.’” *Id.* (quoting Hugh P. Possingham et al., *Population Viability Analysis*, in *ENCYCLOPEDIA OF BIODIVERSITY* 831, 831 (Simon A. Levin ed., 2001)). These same limitations and uncertainties are prevalent throughout the SSA Report and thus throughout the Proposed Listing Decision, but they are not acknowledged or accounted

for in either. That failure, as well as the failure to provide interested stakeholders an opportunity to comment on them, renders the Proposal deficient.

4. *The Existing Administrative Record Does Not Support the Proposed Listing Decision.*

While the administrative record underlying the Proposal is incomplete and does not represent the “best scientific and commercial data available,” the record would not support the Proposed Listing Decision even if it met the ESA’s informational standards. As explained above, for the Service to find that a species is “endangered” or “in danger of extinction throughout all or a significant portion of its range,” it needs to show that the species is “currently on the brink of extinction in the wild.” *See* Polar Bear Memo at 15. FWS has not done that here.

The Service has explained that endangered species generally fit into at least one of four categories: (1) species facing an imminent and certain catastrophic threat (*e.g.*, snail darter); (2) species with an extremely limited endemic range or population size (*e.g.*, Devil’s Hole pupfish); (3) species with a previously expansive range that has dramatically contracted (*e.g.*, California condor); and (4) species with relatively widespread distribution that have suffered major reductions in population size (*e.g.*, red-cockaded woodpecker). *Id.* at 4-6. While the Proposal suggests that the Service likely believes that the RPBB fits into the third and/or fourth category, the administrative record shows that it fits into neither.

The Proposed Listing Decision suggests that “a marked decrease in the [RPBB’s] spatial extent has occurred in recent times,” with the species’ current range being “reduced to 8% of its historical extent.” 81 Fed. Reg. at 65327. As discussed above, in light of the significant problems with the data used to support the Proposal, this conclusion is questionable and must be reevaluated after all available information is compiled and analyzed. But even if it were accurate, the record would demonstrate that the species still maintains a range occupying 13 States/Provinces, with an especially significant presence in the Upper Midwest. *See id.* As FWS has observed, “[r]ange reduction in and of itself does not mean that a species is in danger of extinction.” Polar Bear Memo at 5. That is the case for the RPBB because it still maintains a sizable multi-state, multi-region range that will help to protect it from the other threats that the Proposal asserts are affecting the species. Thus, the RPBB is not “in danger of extinction” on account of its range.

The Proposed Listing Decision also asserts that the RPBB’s population level has plummeted since 2000 and that the “number of populations has declined by 91 percent.” 81 Fed. Reg. at 65327. Again, that assertion is dubious in light of the numerous flaws underling the data cited in the Proposal. Even assuming that it is accurate, however, it does not show that the RPBB is “in danger of extinction throughout all or a significant portion of its range” as the ESA requires for an endangered listing. The SSA Report summarizes three “future risk scenarios” for the RPBB: “status quo,” “most likely,” and “better case.” Under all three scenarios, the Report projects the RPBB to persist for at least 30 years. *See* SSA Report at 58-61, 72-73. Such projections do not equate to the species being “currently on the brink of extinction in the wild.”

C. The Proposed Listing Decision Is Premised on Uncertainty Rather than Data.

The Proposal identifies five key “stressors” that FWS believes are behind the RPBB’s reported population level decline and range contraction: pathogens, pesticides, habitat loss and degradation, small population size, and climate change. *See* 81 Fed. Reg. at 65327-29. The Service concedes, however, that there is significant uncertainty about whether these asserted stressors are causally linked to the species’ condition. Accordingly, the identified stressors do not support the Proposed Listing Decision. Moreover, that uncertainty further highlights the questionable nature of the data underlying the Proposal and the conclusions premised upon it. Each identified stressor is addressed in turn.

The Proposed Listing Decision first asserts that the RPBB is suffering impacts from a variety of pathogens without citing any evidence that pathogens in fact are affecting the species. Instead the Proposal offers (1) a “suggestion” that the purported decline in the RPBB might have been caused by transmission of the *N. bombi* fungus, and (2) a reference to “other viruses, bacteria, and parasites” that are “being investigated” but about which “little is known.” *Id.* at 65328. These passing assertions amount to little more than speculation, which is inappropriate in a listing decision. As the U.S. Supreme Court has recognized:

The obvious purpose of the requirement that each agency “use the best scientific and commercial evidence available” is to ensure that the ESA not be implemented haphazardly, on the basis of speculation or surmise. While this no doubt serves to advance the ESA’s overall goal of species preservation, we think it readily apparent that another objective (if not indeed the primary one) is to avoid needless economic dislocation produced by agency officials zealously but unintelligently pursuing their environmental objectives.

Bennett v. Spear, 520 U.S. 154, 176 (1997). To that point, the Proposal undercuts its own speculation with admissions that (1) experts have “surmised that *N. bombi* may not be the culpable [] pathogen,” (2) hypothesized impacts of pathogen spillover are “debatable,” and (3) “no studies specific to the [RPBB] have been conducted.” 81 Fed. Reg. at 65328. Thus, the asserted impacts from pathogens do not support the Proposal.

Second, the Proposal asserts that a variety of pesticides are impacting the RPBB, yet it offers no concrete evidence of such impacts. In fact, the Service acknowledges that “the overall toxicity of pesticides to rusty patched or other bumble bees is *unknown*.” *Id.* (emphasis added). Nevertheless, the Service contends that one type of pesticide in particular, neonicotinoids, “ha[s] been strongly *implicated* as the cause of the decline of bees in general . . . and specifically for [RPBBs], due to the contemporaneous introduction of neonicotinoid use and the precipitous decline of the species.” *Id.* (emphasis added). Just as with the speculative impacts of pathogens, the Proposed Listing Decision cites no RPBB-specific data showing that neonicotinoids have in fact affected the species because, as the Proposal notes, no studies have been performed to examine the asserted impacts of neonicotinoid use on RPBBs. *See id.* Absent such data, alleged impacts from pesticides cannot support the Proposed Listing Decision.

Third, the Proposal asserts that the RPBB is suffering from significant habitat loss and degradation, but its analysis does not support that claim. The Proposed Listing Decision explains that the RPBB “historically occupied native grasslands in the Northeast and upper Midwest” and

that “much of this landscape has now been lost or is fragmented.” *Id.* In fact, the Proposal estimates that as much 99.9% of native grasslands have been lost since “European settlement of North America,” and suggests that this habitat loss has materially impacted the species. *Id.* It is impossible to reconcile this long-term historical habitat loss – occurring over the span of five centuries – with the Service’s assertion that the purported declines in RPBB population and range only began in the late 1990s, however. *See id.* at 65327-28. It is likely difficult to reconcile that asserted impact with the Service’s recognition that the RPBB is a “habitat generalist,” which would minimize such habitat impacts on the species. Notwithstanding these inconsistencies and the fact that the Service acknowledges that “many feel [that habitat loss or degradation] is unlikely to be a main driver of the recent, widespread North American bee declines,” the Proposal hypothesizes that “the past effects of habitat loss and degradation *may continue to* have impacts on bumblebees” and that “even slight changes in resource availability *could* have significant cumulative effects on colony development and productivity.” *Id.* (emphasis added). These unsubstantiated assertions cannot support the Proposed Listing Decision.

Fourth, the Proposal asserts that the alleged “small population size” of the RPBB and the species’ haplodiploidy reproduction strategy together make the RPBB more susceptible to impacts. *Id.* at 65329. This assertion is based on a faulty predicate, however, because it assumes that the species population size and range have dramatically decreased. As discussed above, the Proposal has not yet adequately demonstrated such a population decline or range contraction with reliable data. As a result, before it may rely on the RPBB’s “small population size” as a factor in the listing decision, FWS must compile the data and other information necessary to demonstrate that the species’ population size and range are in fact small enough for this factor to be relevant.

Finally, the Proposal asserts that climate change “is broadly accepted as one of the most significant risks to biodiversity worldwide,” but simultaneously concedes that “the specific impacts of climate change on pollinators are not well understood.” *Id.* Nevertheless, the Proposal lists a number of climate change effects that it suspects are “*likely to have the greatest effects on bumble bees,*” including drought, flooding, increased storm events, and increased temperature and precipitation, and then surmises that these possible changes “*may lead to decreased resource availability.*” *Id.* (emphasis added). As the Proposal’s uncertainty on this point suggests, however, the information about these possible effects is too speculative to rely on. The identified effects have not occurred, and their potential impact on RPBBs remains unstudied and unknown. Moreover, the Proposal does not offer even a general projection of when such effects might be expected to occur—a temporal disconnect that precludes their relevance to any determination that the RPBB *currently* is “on the brink of extinction.”

In sum, substantial uncertainty exists over the stressors that the Proposal cites to support its conclusion that the RPBB is in a precarious position. That uncertainty casts doubt on whether any of these factors are causing the impacts that the Proposal asserts. Indeed, the Service itself admits that the ultimate sources of the RPBB’s alleged decline are “debated” and that “the relative role . . . of the primary stressors are unknown.” *Id.* at 65329. The Service therefore should not rely on them as a basis for the Proposed Listing Decision. More fundamentally, however, the insufficient data and flawed analysis discussed above renders the Service’s conclusions about the health of the RPBB species unreliable. Listing decisions must be based on

the best available scientific and commercial information—not hypothesis, speculation, or supposition. *See* 16 U.S.C. § 1533(b)(1). To meet that standard, the Service must fill in the significant data gaps in the record and address key areas of uncertainty before it may find that listing the RPBB under the ESA is warranted.

II. Critical Habitat for the RPBB Is Not Determinable.

The Service correctly concludes in the Proposed Listing Decision that designating critical habitat for the RPBB currently is “not determinable” pursuant to Section 4 of the ESA, 16 U.S.C. § 1533(a). As the Service recognizes throughout the Proposal, scientific understanding about the RPBB is lacking. The paucity of information about the species’ biology and life needs, including the widespread uncertainty about its hibernating and nesting habits, make it impossible to designate critical habitat for the RPBB because the Service cannot identify particular habitat features and areas that are “essential” to the species’ survival. *See* 16 U.S.C. § 1532(5)(A). Nor could the Service demonstrate that any particular areas contain the “physical or biological features essential to the conservation of the species,” as the ESA requires. *Id.* § 1533(a). Moreover, the RPBB is a habitat and foraging generalist, which precludes any finding that the species’ habitat requires “special management considerations or protection,” as the ESA requires before designating an area as critical habitat. *See id.*

III. If the Service Determines that a Threatened Listing Is Warranted, It Should Propose a 4(d) Rule for the RPBB.

While the current administrative record does not support the Proposed Listing Decision, should the Service ultimately conclude that a threatened listing is warranted, it should propose a special § 4(d) rule to help conserve the species without unduly restricting ongoing commercial activities that have not been demonstrated to have appreciable effects on the RPBB. The Service has ample authority under the ESA to develop such a rule and could structure it to create a program to ensure that defined species goals are accomplished. To the extent that the Service determines that diverse wildlife habitat would benefit the species by increasing the availability and variety of flowering plants and expanding habitat connectivity, oil and gas operators could contribute to the conservation of the RPBB by establishing those areas upon completing project development. In particular, oil and gas operators already have the internal infrastructure to commit to (1) creating and maintaining flowering plant habitat and overwintering sites by re-vegetating pipeline and other project areas with appropriate native seed mixes, (2) timing their vegetation-related maintenance activities in those areas to minimize impacts on the RPBB, and (3) restricting pesticide and herbicide use at appropriate times of year.

IV. The Service Should Extend the Deadline for Making a Final Listing Decision.

The Service should exercise its authority under the ESA, 16 U.S.C. § 1533(b)(6)(B), to extend the deadline for acting on its Proposed Listing Decision by six months. Doing so would allow FWS sufficient time to consider the many science-backed comments that stakeholders are submitting on the Proposal, collect and evaluate the additional data other information necessary to satisfy its statutory obligations, and ultimately reach a legally defensible decision regarding the RPBB’s status.

As discussed in part above, the SSA Report as well as other *Bombus* literature highlight the numerous significant knowledge gaps relative to the RPBB that could influence whether listing the species is warranted. Among the most significant knowledge gaps include the following:

- Overwintering habitats of RPBB foundress queens;
- The population size required to support a viable population of RPBB across spatial scales;
- Habitat trends specifically relating to RPBB;
- The extent of interdependence of individual plant species with RPBB;
- Unknown current distribution of RPBB;
- Relative role and synergistic effects of the alleged primary stressors to RPBB;
- Possible effects of Acute Bee Paralysis on RPBB;
- Possible effects of Black Queen Cell Virus on RPBB;
- Impacts (synergistic effects, etc.) of neonicotinoids on RPBB;
- Effects of pathogenic bacteria on RPBB;
- Overall toxicity of pesticides to RPBB;
- Lack of understanding of habitat requirements or threats; and
- Lack of information on basic biology (such as phenology, forage requirements and response to restoration practices), dynamics, and nesting requirements.

Moreover, there are a number of ongoing studies by the United States Department of Agriculture, Agricultural Research Service (“USDA ARS”) and various partners (other agencies, academia, etc.) that will aid in addressing these knowledge gaps and therefore assist the Service in making an informed listing decision for the RPBB. Most of these studies conclude next year (2017), a reasonable timeframe that further supports a decision by the Service to extend the final listing deadline. Granting the extension to allow for the inclusion of these studies would help FWS comply with the ESA’s mandate to use only the best available data in the listing decision.

Among the many important studies currently underway that have a direct bearing on the Proposed Listing Decision are the following:

- Effects of Environmental Stressors and Plant Secondary Chemicals on Viral Infections and Physiological Performance in Honey Bees and Bumble Bees
 - Study objective: Investigate the impacts of viral infections in honey bees and bumble bees when bees are simultaneously exposed to either pesticides or plant secondary compounds and determine the impacts on survivorship or physiological performance.
- Influence of Biotic and Abiotic Factors on non-*Apis* Pollinator Health, Sustainability, and Conservation in the United States
 - Study objective: Testing for impacts of biotic and abiotic factors on

pollination abundance and sustainability, developing improved methods for pollinating bee availability, gathering baseline data needed for bee conservation and collecting and analyzing data to better predict future response to biotic and abiotic impacts.

- Managing and Conserving Diverse Bee Pollinators for Sustainable Crop Production and Wildland Preservation
 - Study Objective: Improve the production and management of non-*Apis* bees such as bumble bees for crop pollination by increasing knowledge of bee nutritional needs and environmental effects on bee physiology (especially on diapause and overwintering).
- Modeling Pollinator Movements to Predict Transgene Escape
 - Study Objective: Develop a simulation model of pollinator movements for distinct pollinators of alfalfa in different agricultural landscapes.
- Dimensions: Genomics, Functional Roles, and Community Diversity of the Gut Microbiotae of Honey Bees and Bumble Bees
 - Study Objective: Study the genomics, functional roles, and community diversity of bee gut microbiota and evaluate the impact of antibiotics on bee symbionts, bee parasites and pathogens (such as viruses and trypanosomes), and bee health.
- Intraspecific Evolution in Complex Landscapes: Melding Genomics, Morphology, and Experimental Physiology across Latitude and Altitude
 - Study Objective: Understand the specific reproductive biology of *B. vosnesenskii* and *B. bifarius* species and expand knowledge of other bumble bee species reproduction in general.
- Physiology of Insect Pollinators
 - Study Objective: Improve insect pollinator health through physiological analysis of insects during industrial standard and improved handling techniques.
- Nationwide Bumble Bee Pathogen Survey
 - Study Objective: Determine the potential pathogen travel rate and distance from greenhouse sources.
- Region 1 Bee Study U.S. Fish and Wildlife Service (Region 1): Bee Specimen Identification Study

- Study Objective: Collect data to conserve pollinators on wildlife refuges and provide background information needed to develop and improve bee habitat.
- The Interaction of Pesticides with Pollinator Health and Behavior in Fruit Production Systems in the United States
 - Study Objective: Understand the exposure to and impacts of pesticides on bee health.

In the Proposed Listing Decision the Service requests information about “[p]ast and ongoing conservation measures for the species, its habitat, or both,” to better provide for consideration of existing regulatory protections. Indeed, consideration of efforts at state and regional levels to conserve pollinators, including bumble bees like RPBB, is required under 16 U.S.C. §1533(b)(1)(A) for making a listing decision. Managed pollinator protection plans, conservation programs and state-level resources benefiting pollinators in the historic range of RPBB, which warrant Service consideration and further justify an extension of the listing deadline, include the following:

- Wisconsin: The Wisconsin Pollinator Protection Plan: Best Management Practices (“BMPs”) for Maximizing Pollinator Health & Pollination Services on Farms.
 - A product of the State of Wisconsin Department of Agriculture, the BMP program details practices for landowners to take for the benefit of pollinators, including bumble bees and monarch butterflies.
- Indiana: The Indiana State Department of Agriculture is working with a number of conservation partners, including the Indiana Department of Natural Resources, Natural Resources Conservation Service, the Indiana Department of Transportation, Purdue University and many in the private and nonprofit sector to highlight ongoing pollinator protection and habitat expansion.
 - In October 2015, the Office of Indiana State Chemist (“OISC”) and the Indiana Pesticide Review Board (“IPRB”) released a draft “Indiana Pollinator Protection Plan,” the goal being to “bring awareness to the issues faced by pollinators and all related stakeholders. The hope is that this plan can serve as a starting point to develop a blueprint of how each stakeholder group might contribute to the task of improving pollinator health.”
- Ohio: Ohio Pollinator Habitat Initiative (“OPHI”).
 - Launched in 2015, the purpose of OPHI is to create and improve pollinator habitat across the State of Ohio and increase and improve pollinator conservation and awareness. OPHI has partnered with several state and federal agencies, such as FWS, Monarch Joint Venture, Natural Resource Conservation Service, and the Ohio Department of Natural Resources.

- Michigan: The Managed Pollinator Protection Plan (“MP3”) (currently under development).
 - Michigan is currently constructing the MP3 to reduce losses of bees and other pollinators. The MP3 will provide non-regulatory guidance designed to improve and protect the health of pollinators in the state by mitigating the risk of pesticide exposure.
- New York: New York State Pollinator Protection Plan.
 - Formed in 2015, the New York State Pollinator Task Force focuses on four key areas to conserve and increase pollinator population: development of BMPs, habitat conservation and enhancement, research and monitoring efforts and outreach and education. The New York State Pollinator Protection Plan was released June 24, 2016 and details BMPs for protecting native and managed pollinators, including bumble bees.
- Other regional conservation programs benefiting pollinators including the RPBB:
 - The Pollinator Partnership and the North American Pollinator Protection Campaign produced “A Regional Guide for Farmers, Land Managers, and Gardeners.” The guide is applicable to New York, Maine, New Hampshire, Vermont, Massachusetts and Connecticut and presents BMPs and plant selection guidance for the benefit of pollinators including bumble bees.
 - FieldWatch: FieldWatch is a non-profit organization that provides voluntary online mapping tools for crop producers, beekeepers, and pesticide applicators. Crop producers can use the DriftWatch mapping tool to alert nearby pesticide applicators of their specialty crops. Pesticide applicators should check the FieldWatch website for neighboring bee hives and specialty crops before applying pesticides.

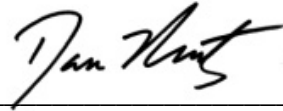
As demonstrated in the above comments and in those of other stakeholders, there is substantial disagreement about the sufficiency and accuracy of the available data relevant to the Proposed Listing Decision. Numerous studies are underway and near completion that will greatly enhance the scientific basis for any listing determination. Similarly, a large number of state and regional conservation efforts and programs have recently been initiated. Under the ESA, FWS must account for those conservation efforts in its final listing decision, but it does not appear that the Service has collected the necessary information to do so. Accordingly, FWS has ample authority and reason to grant an extension here. *See* 16 U.S.C. § 1533(b)(6)(B).

CONCLUSION

Thank you for considering these comments. IPAA, API, and AXPC look forward to continuing to work with the Service to resolve these issues in accordance with the requirements

and limitations of the Endangered Species Act.

Sincerely,



Dan Naatz
IPAA



Richard Ranger
API



Bruce Thompson
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