



February 24, 2020

Public Comments Processing
Docket Number FWS-R3-ES-2019-0100
U.S. Fish and Wildlife Service Headquarters
MS: JAO/IN
5275 Leesburg Pike
Falls Church, VA 22041-3803

Re: Comments on the Draft Recovery Plan for the Rusty Patched Bumble Bee

The Center for Biological Diversity on behalf of itself and its 1.7 million members and supporters, along with Friends of Blackwater, Inc. and the Center for Food Safety (collectively “Conservation Groups”), respectfully submit the following comments on the Draft Recovery Plan (“Draft Recovery Plan”) for the rusty patched bumble bee (“RPBB”). While the Conservation Groups will fully support a robust recovery plan for the rusty patched bumble bee, this plan is currently inadequate and we urge the Service to revise it in order to meet its basic legal standard and properly facilitate recovery. The plan addresses threats to this species far too generally, and fails to meaningfully address one of the most substantial threats to the RPBB, pesticides. It also fails to address the threat of highway and pipeline development. Without specific actions to address the threat of pesticides, which compound all other threats, and destructive projects, this plan violates the plain language and conservation purposes of the Endangered Species Act (“ESA”).

Legal Overview

The ESA requires the U.S. Fish and Wildlife Service (“FWS” or “Service”), through the authority given to the Secretary of the Interior, to “develop and implement [recovery] plans ... for the conservation and survival of endangered species and threatened species listed pursuant to this section[.]”¹. When “developing and implementing” those recovery plans, the Service is required “to the maximum extent practicable” to incorporate in each plan—

- (i) a description of such site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species;
- (ii) objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list; and
- (iii) estimates of the time required and the cost to carry out those measures needed to achieve the plan’s goal and to achieve intermediate steps toward that goal.²

¹ Endangered Species Act. 16 U.S.C. § 1533(f)(1).

² *Id.* § 1533(f)(1)(B)

CENTER *for* BIOLOGICAL DIVERSITY

The objective, measurable criteria set forth in a recovery plan must be based on the best available scientific data in order to potentially justify the species' removal from the list.³

The Service is also required “prior to final approval of a new or revised recovery plan,” to “provide public notice and an opportunity for public review and comment on such plan. The Secretary shall consider all information presented during the public comment period prior to approval of the plan.”⁴ The Service must consider the information in these comments and their attachments prior to promulgating a final recovery plan for the RPBB.

Factual Background

The rusty patched bumble bee (*Bombus affinis*) was broadly distributed across the eastern United States from North Dakota to Maine and south into Georgia, but has experienced a rapid decline. This species currently only inhabits 11% of the counties it was found in historically, according to the Species Status Assessment (“SSA”) issued by FWS in 2016⁵.

The RPBB population has crashed to a small fraction of its historical range and population. The SSA finds that the RPBB inhabits 5% of its historic range and had decreased in relative abundance from 8% to 1%. The states of Indiana and Illinois contain the majority of the 69 remaining populations⁶, and the remaining populations are experiencing significant threats including: pathogens, pesticides, habitat loss and degradation, climate change, and small population dynamics. The decline of the RPBB is likely the result of a combination of factors that contribute to weakening individuals and populations to the point that it lowers their survival rate. Pesticide usage, especially the rising amounts of neonicotinoids, is closely correlated to observed declines in population, and is known to worsen the impacts of all other threats⁷.

The SSA of RPBB demonstrates that this species is at risk of continuing to lose inhabited area. The species is currently experiencing a 25% rate of decline per year⁸. Scenario modeling in the special status assessment assumes that the main threats to this species will not decline significantly across the species range. Even under the better case scenario the number of populations is modeled to decline by half within the first five years (from 2016) and that the species will go extinct by year 30.⁹ To prevent this beautiful bumble bee's extinction, and to recover the species such that it no longer requires the protections of the ESA, it needs a recovery plan that contains site specific actions on its top threats, especially pesticides, and cannot simply ignore destructive projects such as pipelines and highways.

³ *Id.* § 1533(b)(1)(A).

⁴ *Id.* § 1533(f)(4).

⁵ Jennifer Szymanski et al., “Rusty Patched Bumble Bee (*Bombus Affinis*) Species Status Assessment” (U.S. Fish and Wildlife Service, June 2016), 36, <https://ecos.fws.gov/ServCat/DownloadFile/120109>.

⁶ Szymanski et al., 36.

⁷ Szymanski et al., 47.

⁸ Szymanski et al., 57.

⁹ Szymanski et al., 59.

The Draft Recovery Plan Fails to Contain Site-Specific Management Actions Sufficient to Achieve the Conservation and Survival of the Rusty Patched Bumble Bee

Overall, the management actions identified in the Draft Recovery Plan are too vague to meet the statutory requirement to provide “a description of such site-specific management actions as may be necessary to achieve the plan’s goal for the conservation and survival of the species.” When drafting a recovery plan, the Service’s site-specific management actions must be “as explicit as possible in describing steps to be taken in the recovery of a species.”¹⁰ Far from explicit, the Draft Recovery Plan contains general “prioritized recovery actions,” stating that “[a] Recovery Implementation Strategy describing the stepped-down activities to implement the recovery actions will be developed...”¹¹ Regardless, even these prioritized recovery actions fail to adequately address the threats facing the RPBB.

As an initial matter, the later preparation of a Recovery Implementation Strategy (“RIS”) in this case does nothing to fulfill the Service’s obligation to identify site-specific management actions in the Recovery Plan, now. The Service cannot put off its responsibility to develop site-specific management actions in a recovery plan. The failure to do so violates the ESA. The primary concern with the development of a RIS here is that it appears that it is already being developed without the participation of the greater public, even though the Service is required to provide notice and an opportunity for comment on a recovery plan’s site-specific management actions.¹² An approach that defers identification of site-specific actions to a subsequent, non-public process runs afoul of both the explicit statutory language of the ESA and the intent of its recovery planning provisions—that the Service disclose and accept public comment on explicit site-specific management actions.

The Service allegedly developed the RIS concept in order to ensure that recovery plans do not become outdated when circumstances change or new information becomes available.¹³ While the Conservation Groups appreciate the Service’s efforts to ensure that recovery plans remain effective, the Service cannot use this as an opportunity to shirk its immediate statutory duties by delaying the development and publication of site-specific management actions until after a recovery plan is finalized and without the participation of the general public. To put it directly: a RIS process that works only with “conservation partners” with economic interests in destroying RPBB habitat seems guaranteed not to result in effective recovery actions. For a multi-stage recovery planning effort to be effective, there must be full opportunity for scientific and conservation input at the Recovery Plan stage.

¹⁰ S. Rep. No. 240, 100th Cong., 2d Sess. 9 (1988), *reprinted in*, 1988 U.S.C.C.A.N. 2709.

¹¹ U.S. Fish and Wildlife Service, “Draft Recovery Plan for the Rusty Patched Bumble Bee (*Bombus Affinis*)” (Midwest Regional Office, Bloomington, MN.: U.S. Fish and Wildlife Service, 2019), 11.

¹² 16 U.S.C. § 1533(f)(4).

¹³ U.S. Fish and Wildlife Service, *Recovery Planning and Implementation* (Apr. 2019).

A. The Plan Fails to Provide Adequate Protection from Pesticides

Conservation and scientific input are essential to identifying mechanisms for mitigating the harms from stressors, especially from pesticides. Independent science and observation have provided the Service ample evidence of the impact that pesticides and other stressors have on the RPBB. The petition, listing documents, and special status assessment discuss one class of pesticides, neonicotinoids, at length, yet astoundingly the draft recovery plan fails to even mention them. Neonicotinoids are heavily implicated in the decline of the RPBB because they are ultra-toxic to bees and are the most popular class of insecticides in the United States. Neonicotinoids are now used across over half of the cropland in the United States and on major crops including: cotton, wheat, soybeans, corn, and alfalfa¹⁴. These pesticides are very highly toxic to bees and have been shown to have very serious sub-lethal effects at very low doses¹⁵. Chronic exposure reduces bumble bee's overall fitness, impairs reproduction, normal colony function, memory, eating and their ability to cope with other stressors.¹⁶ Neonicotinoids poison bees through direct contact with foliar spray through drift, in nectar and pollen of treated plants, and from the soil which is contaminated by spray and treated seeds. RPBB can also be exposed to neonicotinoids from dust spread during planting and in the soil from the hundreds of millions of acres of crops that are planted with neonicotinoid treated seeds. The recovery plan cannot profess to recover the species without addressing this leading threat. There is no mystery here about the devastating impacts of pesticides, and this plan will fail to recover RPBB unless it squarely addresses them.

Yet, in an attempt to dodge the obvious, the draft recovery plan states that there remain uncertainties as to the "...geographic-specific stressors affecting population health and to what extent are they preventing...full recovery..."¹⁷ Pesticide and pathogen exposure will vary by population, but the excuse of not knowing the exact amount of pesticide exposure that affects each population by no means should stop the Service from designating proactive measures that should be implemented to address this issue. The special status assessment showed that 22 out of 25 sites surveyed had at least some pesticide stressor¹⁸ and maps of neonicotinoid usage show significant usage across the entire range of the RPBB.¹⁹

¹⁴ Michael DiBartolomeis et al., "An Assessment of Acute Insecticide Toxicity Loading (AITL) of Chemical Pesticides Used on Agricultural Land in the United States," ed. Simone Tosi, *PLOS ONE* 14, no. 8 (August 6, 2019): e0220029, <https://doi.org/10.1371/journal.pone.0220029>.

¹⁵ Szymanski et al., "Rusty Patched Bumble Bee (*Bombus Affinis*) Species Status Assessment," 44–48.

¹⁶ D. Goulson et al., "Bee Declines Driven by Combined Stress from Parasites, Pesticides, and Lack of Flowers," *Science* 347, no. 6229 (March 27, 2015): 1255957–1255957, <https://doi.org/10.1126/science.1255957>.

¹⁷ U.S. Fish and Wildlife Service, "Draft Recovery Plan for the Rusty Patched Bumble Bee (*Bombus Affinis*)," 3.

¹⁸ Szymanski et al., "Rusty Patched Bumble Bee (*Bombus Affinis*) Species Status Assessment," 88.

¹⁹ USGS, "Imidicloprid 2016 Pesticide Use Map," accessed February 14, 2020, https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2016&map=IMIDACLOPRID&hilo=L&disp=imidacloprid; USGS, "Thiamethoxam 2016 Pesticide Use Map," accessed February 14, 2020, https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2016&map=THIAMETHOXAM&hilo=L&disp=Thiamethoxam.

CENTER *for* BIOLOGICAL DIVERSITY

The Service must make a plan that incorporates and addresses pesticide impacts on both public and private land. For example, despite knowing the risks of these pesticides, the Service has rescinded its ban on their use in National Wildlife Refuges²⁰ which puts a whole ecosystem at risk of the damages from direct and chronic exposure. While this issue is currently being litigated, it does not change the fact that the Service can and should reinstate this policy in order to at least provide neonicotinoid free habitat on the very federal public lands set aside to conserve wildlife. The Service should also call on the rest of its federal family to end the use of neonicotinoids on all federal public lands within the range of the RPBB.

In addition to the obvious step of addressing neonicotinoid use on federal public lands, the Service should call on states, cities and counties to eliminate the use of neonicotinoids on their lands in order to recover RPBB.

The Service should devise a plan for addressing neonicotinoid use on private lands as well. An outreach program to landowners, especially farmers and others who hold land with potential high value to RPBB, should commence. Recognizing that in many instances growers are not even obtaining an economic benefit from using neonicotinoid treated seeds that are driving the extinction of the RPBB²¹, the Service can help private land owners understand that great potential they have in helping to restore this once common and iconic species if they agree to eliminating or greatly reducing their use of bee-killing pesticides.

However, right now the Draft Recovery Plan's proposed management actions are wholly inadequate to address the grave threat of pesticides. Under proposed recovery actions, the Draft Recovery Plan outlines possible, general programs for minimizing the exposure to pesticides. These programs lack details regarding the scope of their implementation and the specifics of their execution. The basic parameters and goals for these programs should be outlined to ensure that they are producing effective outcomes for the RPBB. The Draft Recovery Plan is missing basic and essential information such as: what will be the width of buffer area?, what pesticides will be allowed in a labeling program?, what best practices will the Service follow for integrated pest management?, how will the agency work with private entities to reduce their harm to RPBB? The failure to outline the necessary actions to protect RPBB from pesticides renders this recovery plan inadequate.

²⁰ Center for Biological Diversity and Center for Food Safety, 1:19-cv-022898 (United State District Court for the District of Columbia 2019, see (https://biologicaldiversity.org/w/news/press-releases/lawsuit-challenges-trump-administrations-approval-of-bee-killing-pesticide-ge-crop-uses-on-national-wildlife-refuges-2019-09-26/email_view/).

²¹ Clayton Meyers and Elizabeth Hill, "Benefits of Neonicotinoid Seed Treatments to Soybean Production" (Washington, D.C.: Environmental Protection Agency, Washington, DC (United States). Office of Chemical Safety and Pollution Prevention, October 15, 2014), <https://www.epa.gov/pollinator-protection/benefits-neonicotinoid-seed-treatments-soybean-production>; C. H. Krupke et al., "Planting of Neonicotinoid-Treated Maize Poses Risks for Honey Bees and Other Non-Target Organisms over a Wide Area without Consistent Crop Yield Benefit," ed. Sarah Diamond, *Journal of Applied Ecology* 54, no. 5 (October 2017): 1449–58, <https://doi.org/10.1111/1365-2664.12924>.

B. Destructive Projects are Inadequately Covered in the Draft Recovery Plan

Pesticides are not the only threat the Draft Recovery Plan fails to address. The RPBB is also at risk from habitat destruction and degradation from pipelines, mines, and road construction; and the Draft Recovery Plan fails to provide site-specific management actions to address this threat. Mining, fossil fuel pipelines, and highway construction also create deadly pollution and contribute to climate change by increasing our reliance on fossil fuels. These activities are driving the decline of RPBB and will thwart recovery efforts, and their impacts must be addressed specifically in the Recovery Plan.

Road construction and pipeline projects have many direct and indirect effects on the RPBB including killing hibernating queens and active colonies, decreasing floral diversity, and fragmenting habitat.²² Any new construction projects with a federal nexus must include consult with the Fish and Wildlife Service under Section 7 of the ESA if the project may harm any endangered species.²³ In the few short years since the RPBB has been listed, numerous projects have required consultation and have violated the ESA due to consultation failures, such as the Longmeadow Parkway in Northeast Illinois that is expected to be completed in 2021.²⁴ This project sacrificed four acres of undeveloped and forest preserve land with a nearby known population of RPBB based on biased, arbitrary, and incomplete information.²⁵ The Draft Recovery Plan does not mention specific management actions that would mitigate the threats of habitat fragmentation, habitat degradation, noise and light pollution associated with highway development.

Two major pipelines—the Atlantic Coast Pipeline and the Mountain Valley Pipeline—have also run afoul of the ESA and threaten the RPBB. These pipelines would carry fracked gas from West Virginia to North Carolina through National Forest land, cross the Appalachian Scenic Trail, and cross streams vital to wildlife. Both pipelines have already destroyed RPBB habitat. These pipelines have been subject to substantial controversy and litigation due to their impacts to endangered species including the RPBB. The Draft Recovery Plan fails to address the direct threats of habitat fragmentation and degradation that would come from the completion of these and similar, future pipeline projects, including the threat of pipeline spills that are far too common.

²² Madhumita Bhattacharya, Richard B Primack, and Joel Gerwein, “Are Roads and Railroads Barriers to Bumblebee Movement in a Temperate Suburban Conservation Area?,” *Biological Conservation* 109, no. 1 (January 1, 2003): 37–45, [https://doi.org/10.1016/S0006-3207\(02\)00130-1](https://doi.org/10.1016/S0006-3207(02)00130-1); James H. Baxter-Gilbert et al., “Road Mortality Potentially Responsible for Billions of Pollinating Insect Deaths Annually,” *Journal of Insect Conservation* 19, no. 5 (October 2015): 1029–35, <https://doi.org/10.1007/s10841-015-9808-z>.

²³ 16 U.S.C. § 1536 (a)(2).

²⁴ Gloria Casas, “Longmeadow Parkway Toll Bridge Plan Moving Forward under Deal OK’d by Kane Board, State Toll Authority,” *Chicagotribune.Com*, accessed February 14, 2020, <https://www.chicagotribune.com/suburbs/elgin-courier-news/ct-ecn-longmeadow-parkway-toll-bridge-st-0912-story.html>.

²⁵ Stephanie Parent, “Notice of Intent to Sue for Violations of the Endangered Species Act Regarding the Longmeadow Parkway, Huntley Road to Illinois Route 62, Kane County, Illinois,” October 16, 2017.

Fundamentally, the Draft Recovery Plan must identify specific, enforceable provisions that land management agencies need to adopt in land management plans. Given the indispensable role of public land management in any successful recovery, we urge the Service to incorporate into the Recovery Plan concrete, enforceable, science-based measures in all its relevant land-use plans. Examples of these types of measures for the RPBB include:

- Reduce and/or eliminate the destructive use of pesticides on critical habitat and on all public land especially in National Wildlife Refuges
- Evaluate the development of pipelines, mines, and highways for their impact to potential RPBB habitat with pre-construction monitoring to verify the presence of the RPBB, call for the elimination or sharp reduction of such activities in RPBB habitat, and develop mitigation strategies to reduce and offset their impact to RPBB
- Ensure any subsequent management plans for specific populations actually use, and don't just claim to use, conservation-focused Integrated Pest Management (IPM) strategies and eliminate pesticides, especially bee-killing pesticides, from their management plans to the greatest extent possible
- Create monitoring plans that survey at least 530 sites over the first five years of the plan with monitoring protocol that requires at least nine surveys in the first year to determine species presence
- Establish mandatory buffer zones through land purchasing or easements around all future critical habitat and public land with a verified population of RPBB of at least 1km

The Draft Recovery Plan Fails to Produce Objective, Measurable Criteria for Downlisting and Delisting

The second requirement for any recovery plan is to include “objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of this section, that the species be removed from the list”. The Draft Recovery Plan includes three downlisting criteria and two delisting criteria. Downlisting criteria 1 and 2 are measurable, but not objective, because they do not rely on the best available science.²⁶ Indeed, the Draft Recovery Plan provides no scientific rationale for why 159 distributed and 80 healthy populations are sufficient to recover this species. The minimum number of populations per conservation unit is defined as half of the decadal average occupancy and the minimum number of healthy populations is half of this minimum number of distributed populations. The Service provides no rationale why this minimum number should be half of the average occupancy. Why shouldn't the minimum number of populations meet the full decadal average or more? More justification and ongoing monitoring are needed to assure that these criteria population numbers are sufficient to produce recovery.

Additionally, the Draft Recovery Plan fails to be objective because it does not sufficiently outline how criteria 1 and 2 will be measured by proposing a specific monitoring program. There are no specific plans or details regarding the necessary scope of monitoring required for recovery, and without a specific monitoring protocol the Service risks making decisions based on

²⁶ 16 U.S.C. § 1533(b)(1)(A)

poor quality data. Failing to acknowledge the scope of the problem and the challenges of measuring recovery for this species puts this recovery plan on a shaky foundation. Monitoring is an essential and non-trivial task that requires specific protocols to compare observations across a broad area. It is clear that a great deal of survey effort will be necessary for the RPBB²⁷ because this species is becoming rarer over time as indicated in the Draft Recovery Plan²⁸. Survey effort will need to be conducted over a large number of sites at least 530 (323-1019 range 95% confidence) sites and with substantial frequency to account for normal seasonal variations such as on-site forage availability and weather. Assuming a 30% detection rate, there is only a 16% chance of finding the RPBB (if it is present with one survey per year) at the required at least 3 out of 5 years which is an unacceptably low value. This can be ameliorated by increased sampling effort. Evans et al. 2019 recommends a total of nine surveys per season to reach a 95% confidence of detection.²⁹ However, we estimate that 18 sampling events per year would be required to achieve a 95% chance of detecting this species (if it is present) at least 3 out of 5 years. It is clear that producing sufficient survey effort to determine the number of populations will require assistance from partner groups especially to reach a survey goal of nine surveys—let alone 18 surveys. It is clear that the Service has not determined an objective measurement protocol for this species, based on the best available science, if it allows individual districts to make up their own monitoring plans.

The third downlisting criteria also misses the mark as an objective criterion. The Draft Recovery Plan simply claims that population clusters are to be “distributed across a diversity of habitat types”, but does not describe how populations should be distributed using any of the best available science or even relying on historical observations. Again, the Service defers this decision to the RIS which lacks public involvement and shows that the Service is unwilling to do the conservation work and would rather leave district offices and conservation groups to figure out for themselves what the best population distribution should be. This is not an objective criterion and undermines the recovery of the RPBB.

The Draft Recovery Plan Fails to Produce a Specific Timeline that Estimates the Time Required and Costs Necessary to Carry out the Measures Needed to Achieve the Plan’s Goals

The recovery effort for the RPBB will take many years of coordinated and planned effort. The Draft Recovery Plan fails to even outline the basics of when specific recovery actions would take place. Full recovery is expected to take a minimum of 40 years, however there is no information provided that explains how the Service arrived at this number or how they plan to get there. Without a specific timeline the Service fails to do their job of providing a plan for the recovery of this species.

²⁷ Elaine Evans, Michelle Boone, and Dan Cariveau, “Monitoring and Habitat Assessment of Declining Bumble Bees in Roadsides in the Twin Cities Metro Area in Minnesota” (St. Paul, Minnesota: Minnesota Department of Transportation, 2019), <https://conservancy.umn.edu/bitstream/handle/11299/208533/MnDOT2019-25.pdf?sequence=1&isAllowed=y>.

²⁸ U.S. Fish and Wildlife Service, “Draft Recovery Plan for the Rusty Patched Bumble Bee (*Bombus Affinis*),” 4.

²⁹ Evans, Boone, and Cariveau, “Monitoring and Habitat Assessment of Declining Bumble Bees in Roadsides in the Twin Cities Metro Area in Minnesota.”

Conclusion

Currently, the Draft Recovery Plan does not produce sufficient site-specific, management actions for the rusty patched bumble bee. The Draft Recovery Plan also fails to outline the monitoring efforts necessary to determine recovery. The Center for Biological Diversity, Friends of Blackwater, Inc., and the Center for Food Safety urge the Service to work to develop a recovery plan that adequately describes site specific management actions that cover the major threat of pesticides on both public and private lands, and addresses destructive projects such as pipelines and highways to achieve recovery for RPBB. We also urge the Service to develop objective criteria for monitoring and surveying the species in order to achieve downlisting and delisting goals. Finally, we call for necessary information to support estimates of the time required and costs to carry out the measures needed to recover this species so that this plan can actually provide a real road map to recovery. This species has less than 30 years before it's potentially extinct—there is no time to waste.

Sincerely,



Jess Tyler M.S.
Pollinator and Endangered Species Researcher
Center for Biological Diversity
Environmental Health Program
PO Box 11374
jtyler@biologicaldiversity.org