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Submitted via certified mail and email

Dear Chief Christiansen,

Pursuant to the right to petition the government as provided in the First Amendment to the United States Constitution[1] and the Administrative Procedure Act (APA),[2] the Grand Canyon Trust, Center for Biological Diversity, Utah Native Plant Society, and Xerces Society, hereby petition the United States Department of Agriculture's Forest Service to eliminate the use of categorical exclusions for permitting apiaries on National Forest lands. More specifically, we request that the Forest Service take the following actions:

> Amend the regulation at 36 C.F.R. § 220.6(d)(8) to remove 36 C.F.R. § 220.6(d)(8)(ii), the example that explicitly mentions approving the use of Forest Service lands for apiaries by categorical exclusion.
>
> End the permitting of apiaries on National Forest lands pursuant to 36 C.F.R. § 220.6(e)(3) because apiaries do not constitute a minor special use that requires less than five contiguous acres of land.
>
> Issue a policy directive stating that requests for placement of apiaries on National Forest Lands must be accompanied by an Environmental Impact Statement or, at a minimum, a comprehensive Environmental Assessment.

[1] U.S. Const. Amend. I. *See also United Mine Workers v. Ill. State Bar Assn*, 389 U.S. 217, 222 (1967) (noting that the right to "petition for a redress of grievances [is] among the most precious of the liberties safeguarded by the Bill of Rights.").
[2] The Petitioners are "interested persons" within the meaning of the APA. *See* 5 U.S.C. § 553(e) (granting any "interested person the right to petition for the issuance, amendment, or repeal of a rule"). Should the Forest Service fail to respond to this petition in a timely manner, the Petitioners may pursue relief in federal court.

These actions are necessary for the Forest Service to fulfill its mission to "sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations."[3] Further, these actions are necessary to bring the Forest Service into compliance with the legal mandates of the Administrative Procedure Act, National Environmental Policy Act, and the Endangered Species Act. In addition, the requested change will help protect biodiversity throughout the sensitive and fragile lands of our National Forests.

We request that the Forest Service provide a formal written response to this Petition in a timely manner, indicating that the requested action will occur by a date certain or that the Petition is denied, accompanied by a "brief statement of the grounds for denial."[4]

I. BACKGROUND

Bee pollination is essential for both natural and developed ecosystems.[5-7] While bee declines are caused by many factors including habitat loss, disease, pesticide use, and climate change,[8-11] scientists have also documented significant adverse impacts of managed honey bees to wild pollinators. As detailed below, scientists have found that honey bees can outcompete, displace, and transmit diseases to native bees, as well as threaten plants that rely on pollination by specific native species. In 2017, bee research biologists, along with biodiversity and public lands advocates, learned that a commercial beekeeper sought to pasture nearly 9,000 honey bee hives on Forest Service lands in south central Utah. While aware of the challenges the commercial beekeeping industry is facing due to pesticides, habitat/forage loss, and other threats, this group also recognized that allowing 9,000 honey bee hives on the forest would pose a certain and significant threat to native bee populations. In early 2018, the Grand Canyon Trust, Center for Biological Diversity, and Dr. Vincent Tepedino began to systematically examine the practice of permitting honey bee apiaries on public lands on and around the Colorado Plateau, and educate the public on this issue.

In addition to gathering information on the current status of apiary permitting on the Colorado Plateau, Petitioners gathered and shared the scientific evidence on honey bee impacts with both land managers and the public through direct communication, published articles, and presentations. Through a series of FOIA requests, the Grand Canyon Trust and Center for Biological Diversity have thus far obtained documentation of 19 permits for apiaries to use Forest Service lands issued from 2009 through 2019. Of

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[3] *See generally,* https://www.fs.usda.gov/about-agency/meet-forest-service.
[4] 5 U.S.C. § 555(e).
[5] Klein, A., Vaissie B. E., Cane, J. H., Steffan-Dewente, I., Cunningham, S. A., Kremen, C. & Tscharntke, T., 2007. Importance of pollinators in changing landscapes for world crops. *Proceedings of the Royal Society B*, Volume 274, pp. 303-313.
[6] Ollerton, J., Winfree, R. & Tarrant, S., 2011. How many flowering plants are pollinated by animals? *Oikos*, Volume 120, pp. 321–326. Rhoades, P., 2013. The importance of bees in natural and agricultural ecosystems. *Forest and Conservation Nursery Associations*
[7] Rhoades, P., 2013. The importance of bees in natural and agricultural ecosystems. *Forest and Conservation Nursery Associations National Proceedings RMRS-P-69* (pp. 77-79). Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.
[8] Potts, S., Biesmeijer, J., Kremen, C., Neumann, P., Schweiger, O. & Kunin, W., 2010. Global pollinator declines: Trends, impacts and drivers. Trends in Ecology & Evolution, Volume 25, pp. 345-53.
[9] Sánchez-Bayo, F. & Wyckhuys, K. A., 2019. Worldwide decline of the entomofauna: A review of its drivers. Biological Conservation, Volume 232, pp. 8-27.
[10] Cameron, S. A. & Sadd, B. M., 2019. Global trends in bumble bee health. *Annual Review of Entomology*, Volume 65, pp. 10.1 – 10.24.
[11] Kerr, J.T., Pindar, A., Galpern, P., Packer, L., Potts, S.G., Roberts, S.M., Rasmont, P., Schweiger, O., Colla, S.R., Richardson, L.L., Wagner, D.L., Gall, L.F., Sikes, D.S., Pantoja, A., 2015. Climate change impacts on bumble bees converge across continents. *Science*, Volume 349, pp. 177–180.

these, seven permits active into 2020 or later represent 946 hives permitted across the Uinta-Wasatch-Cache, Apache-Sitgreaves, Kaibab, Prescott, and Tonto National Forests. With an individual honey bee hive containing 10,000 – 60,000 bees,[12] these permits collectively allow up to 56.8 million honey bees in Forest Service lands on the Colorado Plateau alone. Two permits – one for six hives and one for up to 384 hives across four sites – cited 36 C.F.R. § 220.6(d)(8)(ii), which shows that the Forest Service is actively using this categorical exclusion as a means to allow apiaries, in some cases with large numbers of hives, on the land under their jurisdiction.

The regulation at 36 C.F.R. § 220.6 contains categorical exclusions used by the Forest Service. Among the categorical exclusions is one that can be used for: "(8) Approval, modification, or continuation of minor, short-term (1 year or less) special uses of NFS lands. Examples include, but are not limited to:

. . .

(ii) Approving the use of NFS land for apiaries"

36 C.F.R. § 220.6(d)(8)(ii). In 2019, the Intermountain Regional Forester advised the region's forest supervisors that 36 C.F.R. § 220.6(e)(3), which allows for "approval, modification, or continuation of minor special uses of NFS lands that require less than five contiguous acres of land," may apply when permitting apiaries for more than one year.[13]

As the following legal and scientific arguments make plain, the application of categorical exclusions to allow honey bee apiaries on national forests must end immediately because these actions can be expected to have significant environmental impacts and require more than five contiguous acres of land, and consequently do not meet the baseline criteria for categorical exclusions.

II. ARGUMENT

For the science-based and legal reasons described below, the Forest Service must act to grant this petition and ensure that categorical exclusions are not used to allow apiaries on national forest lands.

a. Scientific Basis for Why Honey bee Apiaries Must Not be Allowed on National Forest Lands Pursuant to Categorical Exclusions

The science is clear that honey bees can present a serious threat to native bees, thus having significant environmental impacts. Therefore, requests to place honey bees on federal public lands cannot be categorically excluded from NEPA analysis.

i. *Honey bees Displace and Outcompete Native Bees*

European honey bees (*Apis mellifera)* were introduced to North America in the 17th century for honey and wax production, and are now used largely in commercial operations for crop pollination and honey production. Honey bees live in colonies (hives) of 10,000-60,000 bees. By contrast, most of the over

[12] Sagili, R.R. & Burgett D.M., 2011. *Evaluating honey bee colonies for pollination*. Corvallis, OR: Oregon State University, Pacific Northwest Extension.

[13] Rasure, N., June 4, 2019. Intermountain Region guidance on Apiary Special Use Proposals. Letter File Code 2720, Ogden UT: U.S. Department of Agriculture, Forest Service, Intermountain Region.

4,000 species of North American native bees are solitary though a few groups (e.g., bumble bees) live in small colonies of a few hundred individuals. Large colony size combined with honey bees' foraging system of scouting available pollen and nectar sources and then recruiting nestmates allows them to displace native bees from available floral resources.[14] The effects of permitting even one beehive are consequential for native bees because one average-sized honey bee hive extracts enough pollen in one month to support the development of 33,000 native bees. Thus, one apiary containing 100 average-sized hives would remove enough pollen to rear about 10 million native bees over three months.[15] Most requests are for pasturing a number of localized 50-100 hive apiaries for several summer months, thereby reducing the capacity of the land to support the development of native bees.

Competition with honey bees has been shown to directly reduce native bee (1) floral visitation rates,[16] (2) fecundity,[17] (3) diversity,[18] and (4) nectar foraging success.[19] For example, the Western bumble bee (*Bombus occidentalis*), a once-common pollinator that has declined by over 50% in recent decades,[20] shows reduced pollen collection rates and reproductive success when their colonies are located in proximity to small numbers of honey bee hives.[21] These negative effects and others, including worker weight loss, have also been shown to occur in proximity to introduced honey bees in several other bumble bee species.[22,23]

These effects are not limited to a small area around hives, as is commonly assumed. Indeed, honey bees typically forage over long distances, in some extreme cases as far as 12 km (7.5 mi) from their hive, potentially impacting over 110,000 acres.[24] Other studies have documented foragers from small hives (5,000 workers) commonly moving distances greater than 1.5 km (.9 mi),[25] while another study estimates that hives of 10,000 workers require 80 acres of forage.[26] Apiary permits commonly request placement of 50-100 hives; thus apiaries of 50-100 *small* hives would each require 4,000 to 8,000 acres of Forest Service land (between 6.25 and 12.5 sq. mi). However, commercial hives are much larger (up to 60,000 bees) and more numerous than those investigated in the studies cited above. Thus, the scale of

[14] Henry, M. & Rodet, G., 2018. Controlling the impact of the managed honey bee on wild bees in protected areas. *Scientific Reports*, Volume 8(1), pp. 1-10.
[15] Cane, J.H. & Tepedino, V.J., 2017. Gauging the effect of honey bee pollen collection on native bee communities. *Conservation Letters* Volume 10 (2), pp. 205–10.
[16] Torné-Noguera, A., Rodrigo, A., Osorio, S. & Bosch, J., 2016. Collateral effects of beekeeping: Impacts on pollen-nectar resources and wild bee communities. *Basic and Applied Ecology*, Volume 17(3), pp. 199-209.
[17] Paini, D. R. & Roberts, J. D., 2005. Commercial honey bees (*Apis mellifera*) reduce the fecundity of an Australian native bee (*Hylaeus alcyoneus*). *Biological Conservation*, Volume 123(1), pp. 103-112.
[18] Badano, E. I. & Vergara, C. H., 2011. Potential negative effects of exotic honey bees on the diversity of native pollinators and yield of highland coffee plantations. *Agricultural and Forest Entomology*, Volume 13(4), pp. 365-372.
[19] Henry, M. & Rodet, G., 2018. Controlling the impact of the managed honey bee on wild bees in protected areas. *Scientific Reports*, Volume 8(1), pp. 1-10.
[20] USDA Forest Service, 2014. *Species Fact Sheet for Bombus occidentalis, Western Bumble Bee*. [Online] Available at: https://www.fs.fed.us/r6/sfpnw/issssp/documents3/sfs-iihy-bombus-occidentalis-2014-02.doc [Accessed 13 April 2020].
[21] Thomson, D., 2004. Competitive interactions between the invasive European honey bee and native bumble bees. *Ecology*, Volume 85(2), pp. 458-470.
[22] Elbgami, T., Kunin, W. E., Hughes, W. O. H. & Biesmeijer, J. C., 2014. The effect of proximity to a honey bee apiary on bumble bee colony fitness, development, and performance. *Apidologie*, Volume 45(4), pp. 504–513.
[23] Goulson, D. & Sparrow, K. R., 2009. Evidence for competition between honey bees and bumble bees; effects on bumble bee worker size. *Journal of Insect Conservation*, Volume 13(2), pp. 177-181.
[24] Ratnieks, F. L. W., 2000. How far do bees forage. *Bee Improvement,* Volume 6, pp. 10-11.
[25] Visscher, K. & Seeley, T.D., 1982. Foraging Strategy of Honey bee Colonies in a Temperate Deciduous Forest. *Ecology*, Volume 63(6), pp. 1790-1801.
[26] Smart, M. D., Pettis, J. S., Euliss, N. & Spivak, M. S., 2016. Land use in the Northern Great Plains region of the US influences the survival and productivity of honey bee colonies. *Agriculture, Ecosystems & Environment*, Volume 230, pp. 139-149.

potential impacts is substantial, and far outside the range of what can properly be allowed to fall under a categorical exclusion, including both 36 C.F.R. §§ 220.6(d)(8) and 220.6(e)(3); it cannot be emphasized enough: apiaries are not a "minor" use and require much more than five contiguous acres of land.

ii. *Disease Risks of Apiary Permitting*

In addition to displacing native bees through competition, commercial apiary permitting threatens both honey bee and native bee populations with debilitating diseases, which can be transmitted between commercial honey bees and wild, native bees at shared flowers. Honey bees are currently under pressure from many diseases and parasites; it has been established that honey bees in almond orchards carry a host of pathogens before they are moved into summer production areas, including national forests.[27,28] Although research on disease spillover between honey bees and native bees is in its infancy, already several studies have shown that pathogens can be passed to native bees at flowers and that some of these diseases are debilitating to native species.[29-32] For example, studies have shown that honey bees pass the deformed wing virus to bumble bees, causing fatally deformed wings in bumble bees.[33] Black queen cell virus, which blackens and kills queen bee pupae, has also been transmitted between honey bees and bumble bees.[34] Permitting honey bees on public lands would thus seriously endanger bumble bees,[35-37] a pollinator group that is already experiencing significant declines in North America. In addition to affecting bumble bees, scientists have documented that viruses have been transferred from honey bees to several other genera of native bees (*Ceratina, Andrena, Anthophora, Osmia, Xylocopa*) and that these viruses replicate and can cause disease in these taxa.[38-40] Independent of disease transmission between species, the impacts of naturally occurring diseases in native bees may also be exacerbated by

[27] Cavigli, I., Daughenbaugh, K.F., Martin, M., Lerch, M., Banner, K., Garcia, E., Brutscher, L.M. and Flenniken, M.L., 2016. Pathogen prevalence and abundance in honey bee colonies involved in almond pollination. *Apidologie*, Volume 47(2), pp. 251-266.
[28] Gisder, S. & Genersch, E., 2017. Viruses of commercialized insect pollinators. *Journal of Invertebrate Pathology*, Volume 147, pp. 51-59.
[29] Tehel, A., Brown, M.J. & Paxton, R.J., 2016. Impact of managed honey bee viruses on wild bees. *Current Opinion in Virology*, Volume 19, pp. 16-22.
[30] Koch, H., Brown, M. J. F. & Stevenson, P.C., 2017. The role of disease in bee foraging ecology. *Current Opinion in Insect Science*, Volume 21, pp. 60-67.
[31] Adler, L.S., Michaud, K.M., Ellner, S.P., McArt, S. H., Stevenson, P.C. & Irwin, R.E., 2018. Disease where you dine: Plant species and floral traits associated with pathogen transmission in bumble bees. *Ecology*, Volume 99(11), pp. 2535–2545.
[32] Figueroa, L.L., Blinder, M., Grincavitch, C., Jelinek, A., Mann, E.K., Merva, L.A., Metz, L.E., Zhao, A. Y., Irwin, R.E., McArt, S. H. & Adler, L.S., 2019. Bee pathogen transmission dynamics: deposition, persistence and acquisition on flowers. *Proceedings of the Royal Society B*, Volume 286, 20190603.
[33] Genersch, E., Yue, C., Fries, I., & de Miranda, J. R., 2006. Detection of Deformed Wing Virus, a honey bee viral pathogen, in bumble bees (*Bombus terrestris* and *Bombus pascuorum*) with wing deformities. *Journal of Invertebrate Pathology*, Volume 91(1), pp. 61-63.
[34] Peng, W., Li, J., Boncristiani, H., Strange, J. P., Hamilton, M. & Chen, Y., 2011. Host range expansion of honey bee Black Queen Cell Virus in the bumble bee, *Bombus huntii*. *Apidologie*, Volume 42(5), pp. 650-658.
[35] Fürst, M.A., McMahon, D.P., Osborne, J.L., Paxton, R.J. & Brown, M.J.F., 2014. Disease associations between honey bees and bumble bees as a threat to wild pollinators. *Nature*, Volume 506 (7488), p. 364.
[36] Graystock P., Yates, K., Darvill, B., Goulson, D., Hughes, W.O.H., 2013. Emerging dangers: deadly effects of an emergent parasite in a new pollinator host. *Journal of Invertebrate Pathology*, Volume 114, pp. 114–119.
[37] Graystock, P., Goulson, D., Hughes, W.O.H., 2014. The relationship between managed bees and the prevalence of parasites in bumble bees. *PeerJ*, Volume 2, e522.
[38] McMahon, D.P., Fürst, M.A., Caspar, J., Theodorou, P., Brown, M.J. & Paxton, R.J., 2015. A sting in the spit: Widespread cross-infection of multiple RNA viruses across wild and managed bees. *Journal of Animal Ecology*, Volume 84(3), pp. 615-624.
[39] Radzevičiūtė, R., Theodorou, P., Husemann, M., Japoshvili, G., Kirkitadze, G., Zhusupbaeva, A. & Paxton, R.J., 2017. Replication of honey bee-associated RNA viruses across multiple bee species in apple orchards of Georgia, Germany and Kyrgyzstan. *Journal of Invertebrate Pathology*, Volume 146, pp. 14-23.
[40] Santamaria, J., Villalobos, E.M., Brettell, L.E., Nikaido, S., Graham, J.R. & Martin, S., 2018. Evidence of Varroa-mediated deformed wing virus spillover in Hawaii. *Journal of Invertebrate Pathology*, Volume 151, pp. 126-130.

competition from honey bees (a process known as facilitation [41]), as there is evidence that increased energy expenditure, lack of a diverse diet and lack of nutrition can increase stress and reduce a bee's ability to survive infections.[42-44]

Concurrently, native bees also carry diseases to which honey bees may be susceptible.[45] Thus, honey bees could act as vectors transmitting and amplifying diseases around the country as they move from summer to winter to almond and other crop feeding grounds. This has been demonstrated among North American bumble bees, wherein pathogen spread back and forth between commercial and wild populations likely facilitated the decline of several native *Bombus* species.[46] In light of the drastic historical effects of disease transmission between wildlife and domestic animals, introducing novel pathogens into native bee and honey bee populations without thorough environmental analysis is contradictory to science and ignores the potentially significant consequences of disease transmission between managed and wild pollinator populations.[47]

iii. *Apiary Permitting Impacts Protected Species, Including Endangered Pollinators and Native Plants*

Honey bees have been shown to reduce food (pollen and nectar) availability, transmit diseases, and otherwise lead to decreased reproduction rates in native pollinators, which include nearly 40 federally listed threatened or endangered species of bees, butterflies, and flower flies. Among these federally listed pollinators are several that depend entirely or almost entirely on national forest land for their survival, including the Pawnee Mountain skipper (*Hesperia leonardus montana*), Nevada's Mount Charleston blue (*Icaricia shasta charlestonensis*), and California's Smith's blue (*Euphilotes enoptes smithi*).[48] Additionally, studies have shown direct negative effects from honey bee hives on the reproduction of the Western bumble bee (*Bombus occidentalis*), a candidate species for federal listing.[49] Studies have also linked the local extirpation of another candidate for listing, the Mojave poppy bee (*Perdita meconis*), with the impacts of honey bees (in this case, Africanized honey bees).[50]

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[41] Graystock, P., Blane, E.J., McFrederick, Q.S., Goulson, D., Hughes, W.O.H., 2016. Do managed bees drive parasite spread and emergence in wild bees? *International Journal for Parasitology: Parasites and Wildlife*, Volume 5(1), pp. 64-75.
[42] Brown, M.J.F., Loosli, R., Schmid-Hempel, P., 2000. Condition-dependent expression of virulence in a trypanosome infecting bumble bees. *Oikos,* Volume 91, pp. 421–427.
[43] United States Fish and Wildlife Service, 2018. *Franklin's bumble bee (Bombus franklini) Species Status Assessment*. Final Report, Version 1, p. 39.
[44] Goulson, D., Nicholls, E., Botías, C. & Rotheray, E.L., 2015. Bee declines driven by combined stress from parasites, pesticides, and lack of flowers. *Science,* Volume 347, 1255957.
[45] Singh, R., Levitt, A.L., Rajotte, E.G., Holmes, E.C., Ostiguy, N., Lipkin, W.I., Toth, A.L. & Cox-Foster, D.L., 2010. RNA viruses in hymenopteran pollinators: evidence of inter-taxa virus transmission via pollen and potential impact on non-*Apis* hymenopteran species. *PloS One*, Volume *5*(12), p. e14357.
[46] Cameron, S.A., Lim, H.C., Lozier, J.D., Duennes, M.A., Thorp, R., 2016. Test of the invasive pathogen hypothesis of bumble bee decline in North America. *Proceedings of the National Academy of Sciences of the United States of America,* Volume 113, pp. 4386–4391.
[47] Grozinger, C. M. & Flenniken, M.L., 2019. Bee Viruses: Ecology, Pathogenicity, and Impacts. *Annual Review of Entomology*, Volume 64, pp. 205-226.
[48] U.S. Fish and Wildlife Service. (2018, June 7). Pollinators Federally-listed as Endangered or Threatened Species. https://www.fws.gov/pollinators/Programs/Endangered.html.
[49] Thomson, D., 2004. Competitive interactions between the invasive European honey bee and native bumble bees. *Ecology*, Volume 85(2), pp. 458-470.
[50] Portman, Z. M., Tepedino, V. J., Tripodi, A. D., Szalanski, A. L., & Durham, S. L., 2018. Local extinction of a rare plant pollinator in Southern Utah (USA) associated with invasion by Africanized honey bees. *Biological Invasions*, Volume 20(3), pp. 593-606.

Honey bees on national forests may also impact many rare and threatened plants that depend on specialized native pollinators – such as the 25 plant species of conservation concern on the Manti-La Sal National Forest[51] that are likely to be pollinated by bees.[52] Native bees that specialize in pollinating a limited number of closely related native plant species are typically very important pollinators of those species. By outcompeting and spreading diseases to these specialist pollinators, honey bees can leave sensitive, range-restricted plants un- or under-pollinated and unable to reproduce.[53] For behavioral and physiological reasons, honey bees are also likely to be less effective pollinators of many of the other more common native plants that native bees have co-evolved with.[54,55] Thus, in addition to negatively impacting native bee populations, honey bees are likely to significantly reduce seed production of a segment of the native flora by reducing effective pollination.

In addition to these risks to native plants, honey bees can degrade public land ecosystems by preferentially pollinating invasive plant species.[56] Since honey bees' worker recruitment strategy leads them to forage preferentially on the most abundant, concentrated, and nectar-rich floral resources,[57] they will usually favor visiting and pollinating abundant invasive species such as yellow star thistle and myrtle spurge, leading to increased seed set in these noxious weeds.[58,59]

By depleting pollinator food sources, spreading diseases to native pollinators, increasing invasive plant populations, and threatening pollination services to rare and range-restricted plants, honey bees can have significant adverse impacts on federally listed endangered and threatened species. As discussed *infra*, 36 C.F.R. § 220.6(b)(2) states, "it is the existence of a cause-effect relationship between a proposed action and the potential effect on these resource conditions, and if such a relationship exists, the degree of the potential effect…that determines whether extraordinary circumstances exist." There is scientific evidence for a cause-effect relationship between honey bee apiaries and negative impacts on federally listed threatened or endangered species, and that the degree of the potential effect can be significant. These negative impacts therefore constitute extraordinary circumstances related to placing apiaries on Forest Service lands, and suggest apiary placement should "warrant further analysis and documentation in an EA or an EIS." 36 C.F.R. § 220.6(b).

iv. *Global Pollinator Declines*

[51] USDA Forest Service, 2017. Identification of the Manti-La Sal National Forest Plant Species of Conservation Concern. [Online] Available at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd570030.pdf [Accessed 13 April 2020].
[52] V. Tepedino, personal communication, April 1, 2020.
[53] Norfolk, O., Gilbert, F. & Eichhorn, M.P., 2018. Alien honey bees increase pollination risks for range-restricted plants, *Diversity and Distributions,* Volume 24 (5), pp. 705–713.
[54] Geslin, B., Gauzens, B., Baude, M., Dajoz, I., Fontaine, C., Henry, M., Ropars, L., Rollin, O., Thébault, E. & Vereecken, N.J., 2017. Massively introduced managed species and their consequences for plant–pollinator interactions. *Advances in Ecological Research*, Volume 57, pp. 147-199.
[55] Russo, L., 2016. Positive and negative impacts of non-native bee species around the world. *Insects*, Volume 7(4), 69.
[56] Hanley, M. E. & Goulson, D., 2003. Introduced weeds pollinated by introduced bees: Cause or effect? *Weed Biology and Management*, Volume 3(4), pp. 204-212.
[57] Hung, K. L. J., Kingston, J. M., Lee, A., Holway, D. A. & Kohn, J. R., 2019. Non-native honey bees disproportionately dominate the most abundant floral resources in a biodiversity hotspot. *Proceedings of the Royal Society B*, Volume 286 (1897), 20182901.
[58] Barthell, J. F., Randall, J. M., Thorp, R. W. & Wenner, A. M., 2001. Promotion of seed set in yellow star-thistle by honey bees: evidence of an invasive mutualism. *Ecological Applications*, Volume 11(6), pp. 1870-1883.
[59] Goulson, D. & Derwent, L.C., 2004. Synergistic interactions between an exotic honey bee and an exotic weed: pollination of *Lantana camara* in Australia. *Weed Research,* Volume 44 (3), pp. 195–202.

Sustaining a diverse assemblage of native bees and other native pollinators is essential to maintaining ecosystem functions on public lands. Native bees provide pollination services that form a critical component of healthy ecosystems and resilient agricultural systems.[60,61] However, native bees and other pollinators are facing steep declines worldwide. A recent, massive study estimates that current rates of insect decline could lead to the extinction of 40% of the world's insect species over the next few decades and lists Hymenoptera (the order that includes bees) as one of the most vulnerable orders.[62] Another recent review addresses global bumble bee declines, reporting precipitous decreases in bumble bee populations in North America, South America, Europe, and Asia.[63] It is thus more imperative than ever to carefully analyze the impacts of activities that may threaten wild pollinators and exacerbate their declines. Alien species, which include commercial honey bees in the U.S., are one of the drivers of pollinator declines. [64-66]

The best available science makes clear that honey bee apiaries do indeed have "a significant impact on the human environment" and thus cannot be allowed on National Forest lands pursuant to categorical exclusions. Furthermore, the best available science demonstrates that extraordinary circumstances including harm to endangered species are associated with apiary placement, precluding the application of categorical exclusions to these activities and requiring either an EIS or EA.

b. Legal Basis for Why the Forest Service Must Prohibit the Use of Categorical Exclusions Regarding Honey bee Apiaries on National Forest Lands

NEPA per se precludes the permitting of apiaries pursuant to categorical exclusions because commercial apiaries cannot be certain to have no significant environmental impacts and also because extraordinary circumstances exist that preclude the application of categorical exclusions. The extraordinary circumstances are namely the presence of imperiled species and the cause and effect relationship between the placement of apiaries and significant harm to the imperiled species. Because of the significant risk to native bee populations posed by commercial honey bee colonies and the dramatic, cascading effects of pollinator losses on native ecosystems, the permitting of apiaries does not fit within NEPA's framework for categorical exclusions.

The listing of apiary placement on federal lands as an example of a NEPA categorical exclusion was approved by the CEQ in the 1980's, a time when much less was known about native bees, and almost no attention had been given to their conservation or conflicts with honey bees.[67] Despite several queries to the Forest Service we have been unable to uncover any case file or decision memo on record detailing any rationale for the approval of apiaries as a categorical exclusion. As studies of native pollinators have

[60] Ollerton, J., 2017. Pollinator diversity: distribution, ecological function, and conservation. *Annual Review of Ecology, Evolution, and Systematics*, Volume 48, pp. 353-376.
[61] Winfree, R., Williams, N. M., Dushoff, J. & Kremen, C., 2007. Native bees provide insurance against ongoing honey bee losses. *Ecology Letters*, Volume 10(11), pp. 1105-1113.
[62] Sánchez-Bayo, F. & Wyckhuys, K. A., 2019. Worldwide decline of the entomofauna: A review of its drivers. *Biological Conservation*, Volume 232, pp. 8-27.
[63] Cameron, S. A. & Sadd, B. M., 2019. Global trends in bumble bee health. *Annual Review of Entomology*, Volume 65, pp. 10.1-10.24.
[64] Cameron, S. A. & Sadd, B. M., 2019. Global trends in bumble bee health. *Annual Review of Entomology*, Volume 65, pp. 10.1-10.24.
[65] Potts, S., Biesmeijer, J., Kremen, C., Neumann, P., Schweiger, O. & Kunin, W., 2010. Global pollinator declines: Trends, impacts and drivers. Trends in Ecology & Evolution, Volume 25, pp. 345-53.
[66] Sánchez-Bayo, F. & Wyckhuys, K. A., 2019. Worldwide decline of the entomofauna: A review of its drivers. *Biological Conservation*, Volume 232, pp. 8-27.
[67] D. Bear, former General Counsel, Council on Environmental Quality, 1982-1993; 1995-2007 personal communication, January 11, 2020.

proliferated in recent decades, permitting apiaries as a categorical exclusion is no longer consistent with the best available science, which shows that honey bee apiaries can have a significant effect on the environment by negatively impacting native bee populations and native plant pollination regimes. These studies also show that extraordinary circumstances exist because imperiled native pollinators, and the plants that rely on them, stand to be substantially harmed by the placement of apiaries on National Forest lands.

i. *Categorical Exclusions May Not Be Applied to Apiaries on National Forest Lands Because Apiaries Cannot be Certain to Have No Significant Effects on the Human Environment*

The Forest Service may sometimes bypass the environmental analysis process when a proposed action falls under a categorical exclusion, which is defined as "categories of actions which do not individually or cumulatively have a significant effect on the human environment…." *Sierra Club v. Bosworth*, 510 F.3d 1016, 1019 (9th Cir. 2007); 40 C.F.R. §1508.4. Using a categorical exclusion allows an agency to expedite its review process, and allows for the elimination of aspects of the process such as full analysis of environmental impacts along with opportunities for and consideration of public comments. *See* 40 C.F.R. § 1508.4.

However, for a categorical exclusion to be permissible, the Forest Service must first make certain that the project will not cause significant effects to the environment. 36 C.F.R. § 220.6(c) (emphasis added) ("If the responsible official determines, based on scoping, that it is uncertain whether the proposed action may have a significant effect on the environment, prepare an EA.")

The determination of how significant environmental effects are must be made in light of the same context and intensity factors that are implicated in evaluating individual actions. *Bosworth*, 510 F.3d at 1030-1031. The Forest Service may not evade this required cumulative impacts analysis by asserting that it is impractical or infeasible because the use of a CX is improper where such impacts cannot practically or feasibly be assessed. *Id*. at 1028.

As described in detail *supra*, there is a voluminous body of science showing that native pollinators are facing challenges to their survival, and that honey bees have significant effects on native bees such as outcompeting them for food and spreading disease. Individually, the placement of any commercial apiaries is likely to cause localized harm. The Forest Service may not even know that it is approving a permit on one of the only sites where a rare native bee species exists. As described *supra,* the impacts to plants are also significant.

The placement of commercial apiaries on numerous National Forest lands could easily cause population level harms to numerous native bee species and contribute to well-documented, large scale pollinator declines. Federal public lands can be the last remaining refuges for native bee species, as is the case for the Mojave poppy bee.[68] Further, apiaries can be placed adjacent to National Forest lands, so even if they are not permitted by the Forest Service, the agency must still consider the cumulative impacts of permitting apiaries on National Forest lands with the existence of apiaries adjacent to these lands.

[68] *See* Petition to List the Mojave Poppy Bee (*Perdita meconis*) Under the Endangered Species Act and Concurrently Designate Critical Habitat, *Center for Biological Diversity,* October 17, 2018. *Available at* https://www.biologicaldiversity.org/species/invertebrates/pdfs/Mojave-poppy-bee-petition-10-17-2018.pdf.

In sum, the Forest Service cannot be certain that placing apiaries on federal public lands will not cause significant harm to the environment. Indeed, in many instances it can be certain that significant harm will likely result. As the science makes plain, introducing large numbers of honey bees on National Forests poses an existential threat to native bees, the plants they pollinate, and thus entire ecosystems. Because the permitting of apiaries both individually and cumulatively has a significant effect on the human environment, it cannot be allowed pursuant to categorical exclusions.

ii. *Extraordinary Circumstances Exist Any Time an Apiary Permit is Sought, Thus Precluding the Lawful Application of Categorical Exclusions to Apiaries*

The Forest Service's regulations provide that a "proposed action may be categorically excluded from further analysis and documentation in an EIS or EA only if there are no extraordinary circumstances related to the proposed action…." 36 CFR § 220.6(a). The very first extraordinary circumstance provided is "[f]ederally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species." 36 C.F.R. § 220.6(b)(1)(i). The regulation goes on to state that "the mere presence of this and other conditions does not preclude use of a categorical exclusion (CX). It is the existence of a cause-effect relationship between a proposed action and the potential effect on these resource conditions, and if such a relationship exists, the degree of the potential effect of a proposed action on these resource conditions that determines whether extraordinary circumstances exist." *Id.* at 220.6(b)(2).

As stated *supra*, honey bees reduce food availability, transmit diseases, and otherwise lead to decreased reproduction rates in native pollinators, including many federally listed threatened or endangered species of bees, butterflies, and flower flies.[69] Honey bees can also impact many rare and threatened plants that depend on specialized native pollinators by outcompeting and spreading diseases to these specialist pollinators, leaving sensitive, range-restricted plants unable to reproduce.[70] In addition to these already listed or soon to be listed species, the Gulf Coast solitary bee,[71] the Suckley's cuckoo bee,[72] and the Mojave poppy bee[73] have been petitioned for ESA listing.

Consequently, with the permitting of apiaries on federal public land, there is no question that in almost all instances extraordinary circumstances exist in that federally listed species or critical habitats, species proposed for federal listing or proposed critical habitats, or Forest Service sensitive species will almost always be present. Further, there is also a clear, scientifically proven cause and effect relationship between the placement of apiaries on the federal public lands and the potential effects, which include significant harm to imperiled bee species, harm to those plants that rely on specialized pollination

[69] *See* discussion in Section II(a)(iii).
[70] Norfolk, O., Gilbert, F. & Eichhorn, M.P., 2018. Alien honey bees increase pollination risks for range-restricted plants, *Diversity and Distributions,* Volume 24 (5), pp. 705–713.
[71] Petition to List the Gulf Coast Solitary Bee (Hesperapis oraria) Under the Endangered Species Act and Concurrently Designate Critical Habitat, *Center for Biological Diversity*, March 27, 2019. *Available at* https://www.biologicaldiversity.org/species/invertebrates/pdfs/Gulf-Coast-solitary-bee-petition-H-oraria.pdf.
[72] Petition to List Suckley's Cuckoo Bumble Bee (*Bombus suckleyi*) Under the Endangered Species Act and Concurrently Designate Critical Habitat. *Center for Biological Diversity*, April 23, 2020. *Available at* https://www.biologicaldiversity.org/species/invertebrates/pdfs/Suckleys-cuckoo-bumble-bee-petition.pdf.
[73] Petition to List the Mojave Poppy Bee (*Perdita meconis*) Under the Endangered Species Act and Concurrently Designate Critical Habitat, *Center for Biological Diversity,* October 17, 2018. *Available at* https://www.biologicaldiversity.org/species/invertebrates/pdfs/Mojave-poppy-bee-petition-10-17-2018.pdf.

services, and subsequently harm to the entire ecosystem where the apiaries would be placed. Thus, the extraordinary circumstances threshold is met, and the placement of apiaries on National Forest lands cannot be permitted under categorical exclusions.

Request for Relief

For the reasons stated above, permits for the placement of apiaries on federal public lands must not be allowed pursuant to categorical exclusions. Thus, Petitioners request that the Forest Service:

> Amend the regulation at 36 C.F.R. § 220.6(d)(8) to remove 36 C.F.R. § 220.6(d)(8)(ii), the example that explicitly mentions approving the use of Forest Service lands for apiaries by categorical exclusion;
>
> End the permitting of apiaries on National Forest lands pursuant to 36 C.F.R. § 220.6(e)(3) because apiaries do not constitute a minor special use that requires less than five contiguous acres of land; and
>
> Issue a policy directive stating that requests for placement of apiaries on National Forest Lands must be accompanied by an Environmental Impact Statement or, at a minimum, a comprehensive Environmental Assessment.

The requested policy directive, accompanying the regulation amendment, should clarify that apiaries are not "minor special uses" and that this use requires far more than five acres. As such, the directive should conclude that apiary permitting does not qualify for the categorical exclusion at 36 C.F.R. § 220.6(d)(8), 220.6(e)(3), or any other categorical exclusion. The Forest Service must put all National Forests on notice that even with physical placement of a collection of beehives on a site less than five acres, the honey bees within those hives will necessarily physically use and impact the habitat of native bees on far more acres than the physical site of an apiary.

It is imperative that the Forest Service act to grant this petition in a timely manner because apiary permits are increasingly issued for National Forests across the West, causing potentially irreversible damage to native bees, plants, and whole ecosystems. If you have any questions, please do not hesitate to contact Mary O'Brien at mobrien@grandcanyontrust.org or Kamran Zafar at kzafar@grandcanyontrust.org. Please send all correspondence on this petition to each signer. Contact information is provided below. Thank you for your time and attention to this important matter.

Respectfully submitted,

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