

1. Should APHIS amend Section 3.81 of the Animal Welfare Act regulations: 1) to require research facilities to construct and maintain an ethologically appropriate environment for primates; and 2) to specify the minimum standards that must be met in order for an environment to be considered ethologically appropriate?

Yes, APHIS should amend Section 3.81 of the Animal Welfare Act (AWA) to require research facilities to construct and maintain an ethologically appropriate environment for primates; and to specify the minimum standards that must be met in order for an environment to be considered ethologically appropriate.

As thoroughly illustrated in ALDF’s petition for rulemaking (“Petition”), submitted with co-petitioners New England Anti-Vivisection Society, North American Primate Sanctuary Alliance, and Laboratory Primate Advocacy Group, the current AWA regulations are woefully inadequate to promote the psychological wellbeing of primates used in research.¹ The current regulatory framework is insufficient to fulfill the intended purpose of the AWA, *e.g.*, to “insure that animals intended for use in research facilities . . . are provided humane care and treatment.”² The current applicable regulations are also contrary to clearly stated Congressional intent and findings that it is “**essential to regulate** . . . housing, care, handling, and treatment of animals by carriers or by persons or organizations engaged in using them for research or experimental purposes . . .”³ (emphasis added). By failing to articulate threshold standards to promote psychological wellbeing of primates, the USDA has failed to adequately “regulate”⁴ the use of primates in research, which renders existing regulations virtually meaningless and leaves licensees to police themselves.

Moreover, maintaining an ethologically appropriate environment for primates used in research and experiments is a critical component of an “appropriate plan for environment enhancement” that is “**adequate** to promote the psychological well-being of nonhuman primates.”⁵ Given that the definition of “adequate” is: “as much or as good as necessary for some requirement or purpose; fully sufficient, suitable, or fit”⁶ conditions in labs—including unjustified solitary housing of primates⁷—demonstrate the extent to which *minimum standards* are necessary to ensure that environmental enhancement plans are “fully sufficient.”⁸

ALDF’s position that minimum standards must be articulated in the AWA implementing regulations in order to fulfill the AWA’s intended purpose of “insur[ing]” the “humane care and treatment”⁹ of primates used in labs has been further vindicated by findings published by the USDA’s own Office of the Inspector General (OIG). Indeed, since submission of the Petition, the OIG completed and published Audit Report 33601-0001-41 (hereinafter, “OIG 2014 Audit”) after

¹ See Petition for Rulemaking (Ex. 1), §§ 1, 3.C, 5, 6.

² 7 U.S.C. § 2131.

³ *Id.*

⁴ *Id.*

⁵ 9 C.F.R. § 3.81 (emphases added).

⁶ See Definition of “Adequate,” Dictionary.com; available at <http://dictionary.reference.com/browse/adequate?s=t>.

⁷ See, *e.g.*, Ex. 1, § 3.C.

⁸ See Definition of “Adequate,” *supra* n. 6.

⁹ 7 U.S.C. § 2131.

completing another internal audit of the Animal and Plant Health Inspection Service’s (APHIS) efficacy in overseeing the use of animals in research facilities.¹⁰ Consistent with the concerns ALDF and its co-petitioners raised in the Petition, the OIG 2014 Audit found that “AC has reduced assurance that protocols are properly completed, approved, and adhered to and that animals are **always receiving basic humane care and treatment.**”¹¹ This finding underscores the extent to which it is totally inappropriate for licensees to be permitted to self-regulate their plans for the environmental enrichment of primates.

These findings are also highly concerning since previous OIG reports, discussed at length in the Petition, suggest that many deficiencies pertaining to the use of animals in experiments have not been adequately addressed or remedied over the past twenty years. According to OIG:

In 2005, OIG performed an audit on animals in research facilities and found that APHIS **was not aggressively pursuing enforcement actions** against violators of AWA and was assessing minimal monetary penalties. Inspectors believed the lack of enforcement action undermined their credibility and authority to enforce AWA. In addition to reducing the penalty by 75 percent, APHIS offered other concessions—making penalties basically meaningless. Violators continued to consider the monetary stipulation as a normal cost of business, rather than a deterrent for violating the law.”¹²

The OIG 2014 Audit also reports that APHIS veterinary medical officers (VMO) do not consistently cite research facilities for noncompliances even where there are clear regulatory requirements in place.¹³ For example:

During one of [OIG’s] visits . . . a research facility in Texas reported most of its non-human primates in the “with pain, with drugs” category without any regard to actual pain categories involved in the experiments. Although the facility admitted to the VMO that its annual report was completed incorrectly, the VMO did not cite the facility for submitting an inaccurate annual report and did not require the facility to submit a corrected one.¹⁴

Research facilities must submit an annual report to the USDA about their use of animals pursuant to 7 U.S.C. § 2143. The specific, enumerated requirements for submission of a complete and accurate annual report—including certification of the accuracy of its contents—are described in 9 C.F.R. § 2.36. However, the anecdote from the Texas research facility described above is not unique. Indeed, the most recent OIG audit uncovered inaccurate reporting about animals used in research in approximately 45% of the facilities it examined. Indeed, it found that facilities “reported animals in the wrong pain category or could not provide [OIG] with documentation to reconcile their annual report.”¹⁵ If licensees are free to certify¹⁶ inaccurate annual reports without

¹⁰ See generally, USDA OIG Audit 33601-0001-41: APHIS Oversight of Research Facilities (December 9, 2014) (Ex. 2).

¹¹ See *id.*, Summary (emphasis added).

¹² See *id.*, see also USDA OIG Audit 33002-3-SF: APHIS Animal Care Program Inspection and Enforcement Activities (September 2005) (Ex. 3) (emphasis added).

¹³ See Ex. 2, p. 10.

¹⁴ See *id.*

¹⁵ See *id.*

¹⁶ See APHIS Form 7023: Annual Report of Research Facility (requiring certification of completion and accuracy by a representative official) (Ex. 4).

consequences, it is even more unlikely that licensees will be motivated to devise and follow satisfactory psychological enrichment plans given that the existing requirements in 9 C.F.R. § 3.81 are so vague and fraught with exceptions to be virtually unenforceable.

OIG has also consistently found that penalties for AWA violations are “arbitrarily reduced and often so low that violators regarded them as a cost of doing business.”¹⁷ APHIS cannot effectively issue citations—let alone take meaningful enforcement action, pursue it “aggressively,” and assess appropriate penalties—in the absence of clear minimum standards for licensees. Indeed, the OIG findings show, *inter alia*, that class-R licensees need *more*—not less—guidance given the frequency with which they continue to fail to provide even “basic humane care and treatment”¹⁸ to animals they are using. Given that there is *no meaningful* guidance when it comes to primate enrichment plans, it is incumbent upon the USDA to amend 9 C.F.R. § 3.81 to provide specific, enforceable, *bare minimum* threshold requirements for ethologically appropriate environments for AWA-regulated primates.

Dr. Rissler, the veterinarian with APHIS who was tasked with preparing the AWA regulations pertaining to psychological wellbeing of primates used in research, reportedly expressed his displeasure prior to drafting the regulations by telling another veterinarian, “I don’t know what psychological wellbeing of primates is. I’m a vet.”¹⁹ Accepted animal husbandry practices have continued to develop over the past thirty years since Dr. Rissler allegedly admitted that he was out of his depth in crafting the regulations. Therefore, it is not only necessary, but appropriate, to update the existing regulations to ensure that the purpose of the AWA is fulfilled.

2. What constitutes an ethologically appropriate environment for a primate? Does this differ among primate species? If so, how does it differ?

The Petition addressed the fundamental considerations necessary for creating ethologically appropriate environments for primates.²⁰ Considerations include: appropriate social composition for the species, sufficient sensory and motor stimulation, facilitation of species-typical behaviors through exercise, cognitive challenges, perches and visual barriers, calendared rotation of enrichment items to promote novelty, foraging devices, visual, olfactory, auditory stimulation, nesting/sleeping needs, and conditions that permit the animal to exercise a degree of choice and control.²¹ An ethologically appropriate environment for a primate must also include maternal rearing. (Section 6, below, elaborates on the importance of a young primate’s mother.)

While the morphology and behavior of primates differs somewhat between species,²² the complex behavioral, psychological, social, activity, and space requirements for all primates warrant the

¹⁷ See Ex. 2, p. 3, *citing* OIG Audit 33600-1-Ch, *APHIS Enforcement of the Animal Welfare Act* (January 1995) (Ex. 5).

¹⁸ See Ex. 2, Summary.

¹⁹ Bernard Rollin, DVM, *Key Note Address: Importance of Social Housing*, USDA Symposium on Social Housing of Laboratory Animals, Oct. 5-6, 2014; available at <http://awic.nal.usda.gov/symposium-social-housing-laboratory-animals-2014>.

²⁰ See generally, Ex. 1.

²¹ See Guide for the Care and Use of Laboratory Animals: Eighth Edition (2011) (Ex. 6), pp. 52-53; *see also*, Association of Zoos and Aquariums Colobus Monkey Care Manual (Ex. 7), Association of Zoos and Aquariums Chimpanzee Care Manual (Ex. 8).

²² See Fn. 2, 9 C.F.R. § 3.81.

establishment of *minimum standards* necessary to ensure the “humane care and treatment”²³ of primates. To a certain extent, the USDA has already answered this question by acknowledging that:

Nonhuman primates include a great diversity of forms, ranging from the marmoset weighing only a few ounces, to the adult gorilla weighing hundreds of pounds, and include more than 240 species. They come from Asia, Africa, and Central and South America, and they live in different habitats in nature. Some have been transported to the United States from their natural habitats and some have been raised in captivity in the United States. Their nutritional and activity requirements differ, as do their social and environmental requirements. As a result, the conditions appropriate for one species do not necessarily apply to another. Accordingly, these **minimum specifications must be applied in accordance with the customary and generally accepted professional and husbandry practices considered appropriate for each species, and necessary to promote their psychological well-being.**²⁴

Indeed, consideration for the complex needs of animals used in research is acknowledged by experts in the fields of bioethics, animal science, and biomedical science, and veterinary medicine. Dr. Bernard Rollin, DVM who played a key role in shaping the 1985 amendments to the federal Animal Welfare Act known as the *Improved Standards for Laboratory Animals Act*,²⁵ has stated:

As important as reducing the infliction of pain and suffering, which arises only sometimes in research, is the fact that **all animals used in research have basic needs and interests, stemming from their biological and psychological natures.**²⁶

Dr. Rollin further has advocated that we do our best to “meet their interests and needs”²⁷ and has unequivocally stated that “providing animals with the best possible living conditions compatible with their natures and eliminating negative conditions [] is **currently practicable**” in the laboratory setting.²⁸ Dr. Rollin advocates for the creation of research environments that pay close attention to housing conditions in addition to physical needs and control of physical pain.²⁹ He is particularly critical of solitary housing of animals, including primates. He considers single caging—something that is still prevalent in the housing of primates in research facilities³⁰ and by

²³ 7 U.S.C. § 2131.

²⁴ Fn. 2, 9 C.F.R. § 3.81 (emphasis added).

²⁵ Specifically, Dr. Rollin advocated for and advised Congress on the need for what would eventually become the *Improved Standards for Laboratory Animals Act*, an amendment to the federal Animal Welfare Act that passed in December 1985.

²⁶ Bernard Rollin, DVM, *Animal Research: A Moral Science*, European Molecular Biology Organization Reports, Vol. 8, no. 6 (May 18, 2007) (Ex. 9), p.524.

²⁷ *Id.*

²⁸ Bernard Rollin, DVM, *The Moral Status of Invasive Animal Research*, The Hastings Center Report, Vol. 42, no. 6, (2012) (Ex. 10) (emphasis added); available at <http://animalresearch.thehastingscenter.org/report/the-moral-status-of-invasive-animal-research/>.

²⁹ *Id.*

³⁰ See Ex. 1, § 3.C.

exhibitors and dealers—to be a form of “neglect”³¹ that puts the animals and research results in a “highly compromised situation.”³² Indeed, the *Guide for the Care and Use of Laboratory Animals* suggests that “adequate environmental enrichment may reduce anxiety and stress reactivity” and “contribute to higher test sensitivity and reduced animal use,”³³ and the National Institutes of Health (NIH) has stated that “[t]here is universal agreement among oversight agencies that primates should be socially housed.”³⁴

Dr. Thomas Butler, DVM, who submitted comments opposing the Petition, suggested in his comments that nothing should be done to improve minimum required laboratory standards for primates, since—among other reasons—ethological standards may differ for each species used.³⁵ In making this assertion, Butler conveniently ignores or forgets that most AWA regulations outside of the primate-specific requirements apply to numerous *families* of animals—where the morphological and other distinguishing features and needs differ far more than they do between a handful of species within the same genus and family. Moreover, Butler’s assertion is expressed as if there is an overwhelmingly plentiful variety of species and subspecies used in research facilities that it will simply be too onerous for the USDA to pay closer attention to their individual social and enrichment needs for purposes of psychological well-being, or that it will make the establishment of threshold requirements impossible. However, the *vast majority* of the approximately 71,000³⁶ primates used for research in the U.S. are macaques.³⁷ Indeed, the most recent publicly-available information suggests that approximately 63% of primates used for federally-funded research in the U.S. are macaques.³⁸ Other species include marmosets, squirrel monkeys, vervet monkeys, baboons, and tamarins.³⁹ However, elsewhere in the AWA regulations, the USDA has managed to implement specific regulatory requirements for a variety of species in other contexts (e.g., species-specific space and enrichment requirements for polar bears, cetaceans,

³¹ Bernard Rollin, DVM, *Key Note Address: Importance of Social Housing*, USDA Symposium on Social Housing of Laboratory Animals, Oct. 5-6, 2014; available at <http://awic.nal.usda.gov/symposium-social-housing-laboratory-animals-2014>.

³² *Id.*

³³ See *Guide for the Care and Use of Laboratory Animals*: Eighth Edition (2011) (Ex. 11) (internal citations omitted), Pp. 52-54; see also, Ex. 1, § 6.

³⁴ See National Institutes of Health Office of Laboratory Animal Welfare Position Statement on Nonhuman Primate Housing (Ex. 12).

³⁵ See Thomas Butler, Comments Opposing the Petition, submitted May 18, 2015; Tracking Number: 1jz-8ix3-lheq (“Additionally, I feel certain that there will be a distinct definition for each NHP species. . . . Bottom line, I am avidly opposed to extending this terminology from Chimps to monkeys. In fact it should be deleted from the chimp world as well.”).

³⁶ See Ex. 2, p. 2 (In Fiscal Year 2010, the most recent publicly available information, there were 71,317 primates used for research in the U.S.).

³⁷ Kathleen Conlee, Erika Hoffeld, and Martin Stephens, *A demographic analysis of primate research in the United States*, Alternatives to Laboratory Animals: ATLA (Impact Factor: 1.32) June 2004; 32 Suppl 1A:315-22 (Ex. 13); see also, Humane Society of the United States: Questions and Answers about Monkeys Used in Research (Ex. 14); available at

http://www.humanesociety.org/animals/monkeys/qa/questions_answers.html?credit=web_id88069391#What_types_of_monkeys_are_most_frequent!; See also, Ex. 1, § 4.C.

³⁸ Conlee, et al., *supra* n. 34; See also Ex. 14.

³⁹ See Ex. 13; See also Ex. 14.

group 1 pinnipeds, group 2 pinnepeds, sirenians, and sea otters).⁴⁰ Therefore, as stated by Dr. Rollin in 2012, providing threshold husbandry standards for primates is “currently practicable.”⁴¹

Moreover, there is no reason that meaningful and enforceable minimum standards cannot be crafted in such a way that they are able to simultaneously meet the basic needs of multiple primate species. In fact, some of the comments submitted in opposition to the Petition by Dr. Michael Beran, a professor at Georgia State University, actually support the Petitioners’ position that crafting such regulations is feasible. Beran states that “the needs of primate species can vary widely,” but that “primates adapt to many environments.”⁴² If true, then this should make the development of threshold, enforceable, regulations *more*—not less—feasible.

It simply defies logic to suggest that, in the absence of a clear understanding of the totality of the psychological needs of each and every primate species, the default position should be to do absolutely nothing to improve their experience and quality of life in a laboratory and other captive settings.

3. *Are there any environmental conditions that make an environment ethologically inappropriate for a primate? If so, what are they? Do they differ among primate species?*

Inappropriate and inhumane environmental conditions are discussed at length and depicted in the Petition.⁴³ To summarize, indicators of poor welfare in primates, repeatedly revealed in USDA inspections, OIG audit reports, and undercover investigations, include—as listed by the International Primatological Society (IPS):

- A very restricted repertoire of behavior in comparison with the wild. Most methods of increasing the range of species-typical behaviors (apart from those associated with highly distressing situations, such as infanticide) represent an improvement for the animals.
- An abnormal activity budget—the individual may be inactive and not make full use of the environment—or it may not interact with conspecifics and show little curiosity towards novel objects (these symptoms are similar to human depression). Alternatively, the animal may be hyper-reactive to minimal stimuli.
- Inadequate social behavior, for example, primates may be hyper-aggressive, fail to mate, prove infanticidal or neglectful of their young.
- Abnormal behaviors such as stereotypies, self-directed social behavior, juvenile behavior in adults, learned helplessness or self-mutilation.⁴⁴

⁴⁰ See 9 C.F.R. § 3.104.

⁴¹ Ex. 9.

⁴² See Michael Beran, Comments Opposing the Petition, submitted May 14, 2015; Tracking Number: 1jz-8iu3-zmrw.

⁴³ See Ex. 1, § 5.

⁴⁴ International Primatological Society: International Guidelines for the Acquisition, Care, and Breeding of Nonhuman Primates (2007) (Ex. 15), p. 52 (internal citations omitted).

IPS details that indicators that the space is sufficient to promote good welfare include

a broad range of species-typical behaviors, a normal activity budget, curiosity and exploration of the environment, etc.—further good welfare indicators include an ability of the primate to cope with challenges and affiliative social relations amongst group members.⁴⁵

Moreover, IPS encourages facilities holding primates to “ensure that [their] **individual needs** are being **fully met**.”⁴⁶ Meeting individual needs requires consideration of factors above and beyond an animal’s body weight and surface area. According to IPS:

- The captive environment should incorporate sufficient usable space and environmental complexity to allow primates to show a wide repertoire of behavior appropriate for the species, including beneficial social behavior.
- The provision of compatible companions greatly extends the range of activities possible for the individual. Primates of gregarious species should, unless there are compelling medical or scientific reasons for not doing so, be housed socially in shared enclosures.
- Where single caging is unavoidable, the primates’ environment can be improved by environmental enrichment to encourage a varied daily time budget, exercise, both physical and mental, and the development of motor skills.
- Assessing environmental quality can best be achieved by monitoring behavior to identify indications of poor welfare. Where possible, behavior in captivity should be related to the species’ natural repertoire and time budget.
- Where behavior is indicative of poor welfare, appropriate improvements to the environment should be made and the individual’s behavior regularly re-assessed to ensure that any improvements are not ephemeral.
- Finally, while nonhuman primates should be provided with a stable home environment, there should be sufficient variability, in the form of temporally or spatially unpredictable events, to provide adequate levels of stimulation. Further, the animal should also be able to exert some control over its environment.⁴⁷

As stated *supra*, Dr. Rollin has spoken at length about how feasible it is to meet the interests and needs and provide proper living conditions for animals used in research.⁴⁸

⁴⁵ *Id.* (internal citations omitted).

⁴⁶ *Id.* (emphases added).

⁴⁷ *Id.* p 53.

⁴⁸ *See eg*, Ex. 10.

4. Does an ethologically appropriate environment for primates that are used in research differ from an ethologically appropriate environment for primates that are sold or exhibited? If so, how does it differ?

The Congressional Statement of Policy in the AWA provides that the purpose of the AWA is, *inter alia*, “to insure that animals intended for use in research facilities or for exhibition purposes or for use as pets are provided humane care and treatment.”⁴⁹ The AWA further provides that “the Secretary **shall** promulgate standards to govern the humane handling, care, treatment, and transportation of animals by dealers, research facilities, and exhibitors.”⁵⁰ Consequently, the AWA implementing regulations governing environmental enhancement to promote the psychological wellbeing of nonhuman primates similarly apply to “dealers, exhibitors, and research facilities.”⁵¹ However, the USDA has not yet fulfilled its obligation under the Act that it “shall promulgate standards”⁵² necessary to ensure the humane “handling, care, [and] treatment”⁵³ of primates. The AWA does not allow for licensees to provide greater or lesser degrees of humane handling or care based on whether the animals are used for research or exhibition (similarly, the threshold needs of a species do not change based on whether they are used by an exhibitor or a research facility), and the default position should not be inaction. The AWA currently allows licensees, whether research facilities or exhibitors, to virtually police themselves or disregard the requirements of 9 C.F.R. § 3.81 entirely with little or no consequences.

Failure to provide adequate enrichment for primates is a problem not only in the context of research facilities, but with exhibitors and dealers as well.⁵⁴ Indeed, many exhibitors appear to be disregarding the requirements in 9 C.F.R. § 3.81 *entirely*, as illuminated during inspections when plans for psychological enrichment don’t even exist for inspectors to evaluate. For example, exhibitor Sam Haynes, Jr., has been keeping a chimpanzee named Candy housed solitarily for

⁴⁹ 7 U.S.C. § 2131 (1).

⁵⁰ *Id.* § 2143 (a)(1).

⁵¹ 9 C.F.R. § 3.81.

⁵² 7 U.S.C. § 2143 (a)(1).

⁵³ 7 U.S.C. §§ 2131 (1), 2143 (a)(1).

⁵⁴ On May 15, 2015, exhibitor Doug Terranova was cited for 8 violations of the AWA, including numerous violations for substandard housing of primates and failure to even have a program of environmental enrichment for primates. *See* USDA Inspection Report, Terranova Enterprises, License no. 74-C-0199 (May 13, 2015) (Ex. 16). On May 11, 2015, the USDA cited a roadside zoo known as “Animaland” for 4 violations of the AWA, including a violation of 9 C.F.R. § 3.81 (a) in connection with the licensee’s failure to have a program of environment enrichment to support the solitary housing of a rhesus monkey. *See* USDA Inspection Report, Animaland, License no. 23-C-0039 (May 11, 2015) (Ex. 17). On March 7, 2015, the USDA inspected Lazy 5 Ranch, a licensed dealer, and cited the facility for numerous non-compliances, including housing a ring-tailed lemur in isolation with no enrichment. *See* USDA Inspection Report, Lazy 5 Ranch (Mar. 7, 2015) (Ex. 18). The USDA cited owner Harry Hampton for a repeat violation of 9 C.F.R. 3.81 (c)(4), and explained that “[n]on-human primates that are individually housed and unable to see and hear nonhuman primates of their own or compatible species must be provided with special attention regarding enhancement of their environment to ensure their psychological wellbeing.” *Id.* However, the inspector provided no guidance whatsoever to the licensee, who, by his repeat violations, has demonstrated his inability to provide humane care for primates or house them in a way that meets their psychological needs. Delegating responsibility to the attending veterinarian—who may have no knowledge of appropriate primate husbandry—is totally inappropriate, as discussed further *infra*.

many decades. Candy has spent her life housed in amusement parks, and is currently housed alone in a cage next to the Tilt-a-Whirl at Dixie Landin’-Blue Bayou, an amusement park and waterslide park, in Baton Rouge, La. The USDA cited Haynes last year for having no environment enrichment plan for Candy, and no written program of veterinary care.⁵⁵



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Candy, housed alone at Dixie Landin’ Theme Park for decades, has no access to a natural substrate and exhibitor Sam Haynes (72-C-0130) was recently cited for having no program of environment enrichment.

⁵⁵ See USDA Inspection Report, Sam Haynes, Jr., License no 72-C-0130 (Jan. 15, 2014) (Ex. 19).



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Without nesting materials, or a quiet place to sleep, Candy is forced to curl up on the unyielding concrete floor of the cage mere feet from the amusement park train and yards from the Tilt-a-Whirl.

Without promulgating threshold criteria, licensees—whether they are research facilities, exhibitors, or dealers—do not have sufficient guidance in minimum standards of care necessary to provide primates with humane handling, housing, and treatment. Allowing licensees to continue to virtually self-regulate has proven to be a gaping void in the AWA’s required implementing regulations. Delegating responsibility for guidance to attending veterinarians, who, like Dr. Rissler, may not know what the “psychological wellbeing” of primates is,⁵⁶ has proven to be ineffective at fulfilling the intent of the AWA. The USDA must fulfill its obligation of promulgating rules to establish meaningful and enforceable regulations concerning the psychological wellbeing of regulated primates.

Dr. Brian Hare, the Duke University anthropologist who has worked with chimpanzees and monkeys, has opined that “[researchers] have a responsibility . . . to do everything we can to limit suffering.”⁵⁷ Indeed, without establishing minimum criteria to ensure the psychological wellbeing

⁵⁶ Bernard Rollin, DVM, *Key Note Address: Importance of Social Housing*, USDA Symposium on Social Housing of Laboratory Animals, Oct. 5-6, 2014; available at <http://awic.nal.usda.gov/symposium-social-housing-laboratory-animals-2014>.

⁵⁷ *Animal Rights Groups: Lab Monkeys Deserve Same Treatment Laws as Chimpanzees*, CBS News-DC, June 18, 2015 (Ex. 20); available at <http://washington.cbslocal.com/2015/06/18/animal-rights-groups-lab-monkeys-deserve-same-treatment-laws-as-chimpanzees/#comments>.

of primates, licensees are left without appropriate guidance, the USDA is left without an effective enforcement mechanism, and primates used in interstate commerce will continue to suffer from conditions that the AWA was ostensibly crafted to prevent.

5. Who should make the determination regarding the ethological appropriateness of the environment for nonhuman primates at a particular research facility: The attending veterinarian for the facility, APHIS, or both parties? If both parties should jointly make such a determination, which responsibilities should fall to the attending veterinarian and which to APHIS?

Ethological appropriateness of the environment for nonhuman primates should be determined by APHIS. The wide variation in substandard environments that have been approved for primates held by class-C, -R, or -B licensees by attending veterinarians demonstrates the need for clearly articulated threshold requirements in the AWA so that licensees have direction, animal care inspectors have clearer standards to follow when citing for noncompliances, and resultant enforcement actions can be more meaningful and effective. Leaving determinations about ethological appropriateness of the environments for primates held by AWA licensees is inconsistent with fulfillment of the purpose and intent of the AWA, carries inherent and unavoidable conflicts of interest, and has proven to fail to effectively ensure the humane treatment of primates housed in research facilities.

a) Attending Veterinarian Determination of an Appropriate Environment for Nonhuman Primates Violates the Animal Welfare Act

Congress enacted the AWA in 1966 “to establish humane standards for the treatment of...animals.”⁵⁸ As the Senate Report explained, the AWA was needed to deal with abuses associated with the use of animals in research.⁵⁹ The original legislation required the Secretary of the USDA to “promulgate standards” to “govern the humane handling, treatment, and transportation of animals” by dealers and research facilities, including “minimum requirements for housing, feeding, watering, sanitation...and adequate veterinary care.” 7 U.S.C. § 2143 (a)(1); (a)(2)(a).

As discussed *supra* p. 4, in 1985 Congress responded to Dr. Rollin and others who demanded amendments to the AWA for purposes of strengthening protections for animals used in experiments. When introducing the 1985 Amendments, Congressman George E. Brown Jr. explained that the amendments would increase safeguards to ensure that animals are treated humanely.⁶⁰ Senator John Chafee cited a scandal involving abuses of primates at the University of Pennsylvania Head Injury Clinic as the most visible example of the continuing problem that existing AWA standards left too much room for substandard care and inhumane treatment. Senator Chafee also noted that the voluntary codes observed by medical researchers were inadequate to protect animals from inhumane treatment.⁶¹ To address such legislators’ concerns, Congress added the requirement that the Secretary promulgate “minimum standards...for a physical environment

⁵⁸ S. Rep. 89-1281, 89th Cong., 2d Sess. *reprinted in* 1966 U.S. Code Cong. & Ad. News 2635 (Ex. 21).

⁵⁹ *Id.* at 12-13.

⁶⁰ *See, e.g.,* <http://www.nal.usda.gov/awic/pubs/96symp/awasymp.htm#30AWA> (Ex. 22).

⁶¹ Cong. Rec. 22257 (August 1, 1985).

adequate to promote the psychological well-being of primates.”⁶² The purpose of this language was to both provide more humane treatment of primates as well as assure greater confidence in the results of experiments performed on them.⁶³ It is also worth noting that the original drafts of the 1985 legislation “mandated housing and husbandry to meet the nature of all research animals.”⁶⁴ Unfortunately, despite recognition of their importance, these provisions were deleted from the legislation that passed. Thirty years after recognizing that ethologically appropriate environments are essential to ensuring humane care of animals in labs, it is time that we finally reduce to writing the minimum standards that have been acknowledged as critical for at least the past three decades.

i. The plain language of the Animal Welfare Act requires agency determination of ethologically appropriate standards for primates used in research facilities

The AWA unambiguously states that the Secretary “shall promulgate standards” for an environment “adequate to promote the psychological well-being of primates.”⁶⁵ The use of the word “shall” indicates that this is mandatory action that the Secretary must take. Had Congress intended to make this a discretionary duty, it could have done so, as it did in other subsections of § 2143.⁶⁶ To read the word “shall” as permissive clearly violates the plain text of the provision.

Furthermore, the 1985 Amendments to the AWA are very clear as to when the Secretary can involve veterinarians in making determinations about AWA compliance. In the very same section that requires environmental standards for primates, the AWA mandates standards “for exercise of dogs, as determined by an attending veterinarian.”⁶⁷ In contrast, Congress included no such language related to standards for non-human primate environments.⁶⁸ It is well established that “[w]here Congress includes particular language in one section but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposefully in the disparate inclusion or exclusion.”⁶⁹ Therefore, because Congress chose *not* to authorize the agency to allow the “attending veterinarians” to play any role in determining the standards required to promote the psychological well-being of primates, the Secretary’s delegation of this responsibility to attending veterinarians would contravene the plain text of Section 2143.

Congress’s clear distinctions between when the Secretary can and cannot delegate to veterinarians the enforcement of the AWA makes practical sense. Allowing attending veterinarians to determine the proper exercise of dogs, but not the adequacy of physical environments for promoting the psychological well-being of primates, aligns with the general expertise of United States veterinarians. Most veterinarians are well trained in canine needs, but according to the American Psychological Association, most attending veterinarians are “without specific training in the

⁶² 7 U.S.C. § 2143.

⁶³ Cong. Rec. at 29273.

⁶⁴ See Ex. 9, p. 524.

⁶⁵ 7 U.S.C. § 2143.

⁶⁶ Compare *id.* (a)(1) (“The Secretary shall promulgate standards . . .”) with *id.* (f) (“the Secretary may by regulation provide exemptions”).

⁶⁷ 7 U.S.C. § 2143 (a)(2)(B).

⁶⁸ See *id.*

⁶⁹ *Duncan v. Walker*, 533 U.S. 167 (2001) (quoting *Bates v. United States*, 522 U.S. 23 (1997)); accord *Russello v. United States*, 464 U.S. 16, 23 (1983).

psychology of [primates],” so they are not “in the position to judge their psychological well-being
...⁷⁰

The plain text of Section 2143 provides no role to the attending veterinarian in determining the adequacy of primate environments, which is reasonable because attending veterinarians are often unqualified for this task. USDA cannot disregard Congress’s clear intent to delegate its regulatory authority to the Secretary, as opposed to unqualified private actors.

ii. Attending veterinarian implementation of this provision of the Animal Welfare Act violates non-delegation doctrine principles

Delegating the determination to veterinarians working for the regulated entities also violates non-delegation doctrine principles. Congress clearly stated that it is “essential to regulate” the entities who exhibit, experiment on, and/or hold for sale certain species of animals.⁷¹ Courts have repeatedly stated that an agency may not delegate its clearly defined regulatory responsibilities to private actors.⁷² Moreover, it is especially inappropriate for an agency to delegate its regulatory duties to “private entities whose objectivity may be questioned on grounds of conflict of interest.”⁷³ Given that the USDA has previously acknowledged that attending veterinarians are agents of the regulated facilities, forcing attending veterinarians to determine whether their employer is complying with AWA creates a conflict of interest.⁷⁴ Therefore, USDA may not delegate this determination to attending veterinarians.

b) An Employee’s Determination of Whether the Employer Is Acting Lawfully Is an Inherent Conflict of Interest

After the USDA adopted final regulations on nonhuman primate psychological well-being delegating compliance authority to the “attending veterinarian,” Congress has since recognized the inherent conflict of interest in allowing full-time employees to determine their employers’ regulatory compliance.⁷⁵ While most class-C licensees do not directly employ veterinarians, that

⁷⁰ See Joint Appendix 342, *Animal Legal Def. Fund v. Glickman*, 97-5031, 154 F. 3d 426 (D.C. Cir. 1998); see also Bernard Rollin, DVM, *Key Note Address: Importance of Social Housing*, USDA Symposium on Social Housing of Laboratory Animals, Oct. 5-6, 2014, available at <http://awic.nal.usda.gov/symposium-social-housing-laboratory-animals-2014> (recounting a conversation he had with Dr. Rissler, a veterinarian tasked with preparing the AWA regulations pertaining to the psychological wellbeing of primates. Dr. Rollins recalled Dr. Rissler stating, “I don’t know what psychological wellbeing of primates is. I’m a vet.”).

⁷¹ See 7 U.S.C. § 2131.

⁷² See *Perot v. Fed. Election Comm’n*, 97 F.3d 553, 559 (D.C. Cir. 1996) (“when Congress has specifically vested an agency with the authority to administer a statute, it may not shift that responsibility to a private actor...”); *Sierra Club v. Sigler*, 695 F.2d 957, 963 n.3 (5th Cir. 1983) (“an agency may not delegate its public duties to private entities”); *Am. Horse Prot. Ass’n, Inc. v. Veneman*, 2002 WL 34471909 at *4 (D.D.C. Jul. 9, 2002) (noting that the law “frowns on delegations from agencies to private actors”).

⁷³ *Sigler*, 695 F.2d at 962.

⁷⁴ See 54 Fed. Reg. 10835, 10838 (Mar. 15, 1989).

⁷⁵ For example, in 2002 Congress enacted the Sarbanes-Oxley Act, which tasks employees of a regulated entity with certifying their employer’s compliance with regulatory law. See 18 U.S.C. § 1350 (requiring corporate officers to certify that periodic financial filings comply with the Securities Exchange Act of 1934). Congress coupled the certification with a provision mitigating the employee’s conflict of interest, providing employees whistleblower protection. *Id.* § 1514(A)(a). As a result, employees may report non-compliance to regulators without fear of retribution.

is not the case with class-R licensees. Therefore, placing uniform obligations and expectations on an “attending veterinarian” without regard to whether that vet is directly employed by the regulated entity fails to address resultant conflicts of interest depending upon who that veterinarian’s employer is.

Multiple courts have held that the AWA offers no whistleblower protection for veterinarians.⁷⁶ In *Moor-Jankowski*, the petitioner directed an AWA-regulated facility at New York University, and served on the facility’s Institutional Animal Care and Use Committee.⁷⁷ When the petitioner raised his concerns about the treatment of primates in one of the labs to his university superiors and the USDA, his employer allegedly transferred control of his lab to a facility known for AWA violations, and terminated the petitioner’s employment.⁷⁸ Although 9 C.F.R. § 2.32 ostensibly prohibits discrimination against class-R employees who report AWA violations, there is no guarantee that the agency will protect employees from retribution.⁷⁹ Thus, veterinarians who are employed by licensees and who risk termination or other retaliation for failing to approve a nonhuman primate enrichment plan, have a lesser incentive to ensure their employers’ or clients’ compliance with the AWA.

These concerns are illustrative of the precise reason that threshold standards must be articulated in the AWA implementing regulations: because delegating these responsibilities to veterinarians who are paid by the licensees—whether as direct employees, or independent contractors—creates varying conflicts of interest and lessens the likelihood that the purpose and intent of the AWA are being fulfilled. As the Supreme Court has stated, delegating authority to the industry that needs to be regulated is “utterly inconsistent with the constitutional prerogatives and duties of Congress.”⁸⁰ If Congress cannot delegate regulating authority to conflicted actors in the regulated industry, there is no reason that USDA may do so.

6. An ethologically appropriate environment for a primate includes maternal rearing.

The importance of maternal rearing for ethologically appropriate environments for nonhuman primates is so fundamental that it warrants its own discussion in addition to the standards discussed more generally *supra*, Section 2. Regulations that ensure the humane treatment and care of nonhuman primates and provide minimum standards for ethologically appropriate environments for nonhuman primates necessarily must include a regulatory prohibition on premature maternal separation. It is impossible to simultaneously provide humane care and treatment while forcibly separating an infant nonhuman primate from the baby’s mother. Therefore, in order to fulfill the purpose and intent of the AWA, the regulatory changes must include prohibitions on purposeful maternal deprivation.⁸¹

⁷⁶ See *Moor-Jankowski v. Bd. of Trustees of New York Univ.*, 1998 WL 474084 (S.D.N.Y. Aug. 10, 1998); see also *Bajalo v. Nw. Univ.* 860 N.E. 2d 556, 567 (Ill. App. 2006) (holding that even though an AWA regulation appeared to provide whistleblowers indirect protection, the AWA itself did not provide whistleblowers a private right of action against retribution).

⁷⁷ *Moor-Jankowski*, 1998 WL 474084 at *1-3.

⁷⁸ *Id.* at *6-12.

⁷⁹ *Id.* at *15 (noting that USDA charged the lab with AWA violations carrying a penalty of up to \$26 million in fines, but found insufficient evidence to show that employer had retaliated against petitioner).

⁸⁰ *A.L.A. Schechter Poultry Corp. v. United States*, 295 U.S. 495, 537 (1935).

⁸¹ As discussed below, APHIS might make an exception for the rare case in which an infant’s mother cannot parent.

A young primate needs her mother's care to stay physically and psychologically healthy.⁸² Devoted primate mothers pay close attention to their young,⁸³ hold them constantly,⁸⁴ help them socially,⁸⁵ comfort them,⁸⁶ and fight fiercely to keep them. Some experimenters, however, have torn newborn primates away from their mothers and left the infants to languish without a mother's care or comfort.⁸⁷ In these deprived and unnecessary tests, experimenters deprive infants of maternal care *because they know* such deprivation inflicts lifelong harm.⁸⁸ Primate maternal deprivation experiments have only reiterated what human studies⁸⁹ and common sense⁹⁰ already told us: that a motherless infant tends to become sick,⁹¹ injured,⁹² or psychologically disturbed.⁹³

a) Authorities say facilities should let primate mothers raise their young.

“Infants should not be permanently removed from the care giving parent(s) before an age that approximates the age of infant independence in nature, except where necessary for the health and

⁸² See, e.g., Gabriella Conti, Christopher Hansman, James J. Heckman, Matthew F. X. Novak, Angela Ruggiero & Stephen J. Suomi, *Primate Evidence on the Late Health Effects of Early-Life Adversity*, 109 *Proc. Nat'l Acad. Sciences* 8866 (June 2012) (Ex. 24) (maternal deprivation study finding, “the lack of a secure attachment relationship in the early years has detrimental consequences for both physical and mental health later in life, with long-lasting effects”).

⁸³ See, e.g., Stephen J. Suomi, *Early Determinants of Behaviour: Evidence from Primate Studies*, 53 *Brit. Med. Bull.* 170, 173 (1997) (Ex. 25) (rhesus adult females direct “much of their social activities toward matrilineal kin, including the infants that they . . . bear and rear”).

⁸⁴ See, e.g., *id.* at 172 (“Rhesus monkey infants spend virtually all of their initial days and weeks of life in physical contact with their biological mothers.”).

⁸⁵ See, e.g., Carol M. Berman, *Mother-Infant Relationships among Free-Ranging Rhesus Monkeys on Cayo Santiago: A Comparison with Captive Pairs* 28 *Animal Behav.* 860, 860 (1980) (Ex. 26) (“The mother . . . regulates [the infant's] interactions with others.”) (citations omitted).

⁸⁶ See, e.g., Viktor Reinhardt, *Artificial Weaning of Old World Monkeys: Benefits and Costs*, 5 *J. Applied Animal Welfare Sci.* 151, 153 (2002) (Ex. 27) (“[T]he mother remains the primary source of comfort and reassurance well beyond the conclusion of nutritional weaning.”).

⁸⁷ See, e.g., Conti et al., *supra* (maternal deprivation study, discussing previous maternal deprivation experiments).

⁸⁸ See, e.g., Cirulli et al., *supra* at 574 (experimenters attempt to mimic “the effects of early trauma” in humans “by means of disrupting the mother–infant bond” in primates); Conti et al., *supra* at 8866 (recent maternal deprivation experiment introduction, reviewing research conducted since 1950s on “devastating” effects of such deprivation); Corrine K. Lutz, Ernie B. Davis, Angela M. Ruggiero & Stephen J. Suomi, *Early Predictors of Self-Biting in Socially-Housed Rhesus Macaques (Macaca mulatta)*, 69 *Am. J. Primatology* 584, 585 (2007) (Ex. 28) (maternal deprivation study introduction, explaining such deprivation already known to cause stereotypes).

⁸⁹ See, e.g., Cirulli et al., *supra* at 575 (primate maternal deprivation review stating that studies of children raised in orphanages “have revealed the presence of cognitive, social and physical deficits”); Conti et al., *supra* at 8866 (“Some of the most compelling evidence on the consequences of early maternal and social deprivation comes from children raised in . . . orphanages. . . . Lasting physiological and mental effects have been striking there.”); *Id.* at 8869 (“Our results are in line with the large body of observational evidence on humans.”).

⁹⁰ See, e.g., Reinhardt, *supra* at 153 (2002) (“It should be self-evident that permanently removing a still-sucking infant from the mother is an extremely distressing experience for both the mother and the infant.”).

⁹¹ See, e.g., Conti et al., *supra* at 8869 (monkey infants left isolated got sick about twice as often as those raised by their mothers, and almost every male infant left isolated developed an illness).

⁹² See, e.g., Conti et al., *supra* at 8870 (infant female monkeys taken from their mothers and left with other motherless infants tended to become injured or go bald).

⁹³ See, e.g., Lutz et al., *supra* at 587–88 (large portion of motherless monkeys compulsively bit themselves).

well-being of the infant or dam,” according to a USDA draft policy, because, “it is important not to disrupt the bond between the infant and its parents.”⁹⁴

IPS agrees: “The young monkey should not normally be separated from its mother at an early age (i.e., at 6–8 months) but should remain in contact for one year to 18 months, in most species.”⁹⁵ “Allowing infants to grow with their mothers,” explains IPS, “is necessary for normal development. Infants . . . should remain with their mother until weaning age which varies greatly between species.”⁹⁶

A primate breeding article found scientific support lacking for the pre-weaning separation of infants,⁹⁷ suggested mothers suffer upon losing an infant,⁹⁸ and stated that pre-weaning separation “is particularly detrimental for the infant.”⁹⁹

b) Mothers dedicate themselves to caring for their infants.

Like human mothers, other primate mothers also show their offspring comfort and affection. Female rhesus monkeys—who account for a large percentage of the primates used in experiments—direct “much of their social activities toward matrilineal kin, including the infants that they . . . bear and rear.”¹⁰⁰ The bond between a young monkey and her mother remains strong even after weaning.¹⁰¹ In nature, a young monkey lives in her mother’s colony until at least prepuberty.¹⁰² (Female primates tend to stay in their mother’s colony for life.)

Primate mothers hold their infants virtually all day and all night: “Primate infants spend their first weeks of life either in constant physical contact or very close to the mother.”¹⁰³ Indeed, “[r]hesus monkey infants spend virtually all of their initial days and weeks of life in physical contact with their biological mothers, during which time strong, specific attachment bonds are formed.”¹⁰⁴ In the wild, researchers observed that, “[a]s with most species of non-human primates studied in the wild or in captivity, mothers and infants on Cayo Santiago initially spent nearly all their time in ventro-ventral contact.”¹⁰⁵ In both free-living and captive monkeys, the researchers observed that, “[t]he mother takes primary responsibility for maintaining contact and proximity to the infant, frequently making contact, rarely refusing the infant's demands for contact, and frequently restraining it from leaving.”¹⁰⁶

⁹⁴ Animal Welfare: Draft Policy on Environment Enhancement for Nonhuman Primates, 64 Fed. Reg. 38145-01 (Ex. 29).

⁹⁵ International Primatological Society, *supra*, at 48.

⁹⁶ *Id.* at 21.

⁹⁷ Reinhardt, *supra*, at 154.

⁹⁸ *Id.* at 153.

⁹⁹ *Id.* at 153.

¹⁰⁰ Suomi, *supra*, at 173.

¹⁰¹ *See* Reinhardt, *supra* at 151.

¹⁰² *Id.* at 151.

¹⁰³ Cirulli et al., *supra* at 580.

¹⁰⁴ Suomi, *supra*, at 172.

¹⁰⁵ Berman, *supra* at 863–64 (citations omitted).

¹⁰⁶ *Id.* at 868–69.

Mothers help infant primates learn to socialize. A primate mother regulates her offspring's social interactions with with others.¹⁰⁷ A review explains: "The mother–infant bond is the most fundamental early relationship in primates and is critical to developing the social skills necessary to succeed in finding mates, resources and to create social bonds and alliances."¹⁰⁸

A young primate takes comfort in her mother's presence. Researchers note the ability of the "typical monkey mother" to reduce her infant's "fear in the face of novelty or stress."¹⁰⁹ One review explains that a primate's mother "provides a secure base in order to develop emotional stability."¹¹⁰ Another review elaborates: "In their second month of life, rhesus monkey infants begin to explore their immediate physical and social environment, typically using their mothers as a 'secure base' for exploration, much as [one scholar] has described for human infants and toddlers."¹¹¹ Just as a human toddler may cry when separated from her mother even briefly, even a brief separation from a primate's mother greatly upsets the young primate. "Most young monkeys initially react with obvious behavioural agitation" when their mother takes a short trip to visit a mate.¹¹² Some youngsters even "lapse into a behavioural depression characterized by increasing lethargy and social withdrawal, apparent eating and sleeping difficulties, and a striking fetal-like huddling posture sometimes maintained for hours on end."¹¹³

c) A motherless infant suffers physically and psychologically.

Abundant evidence shows that an infant primate needs her mothers' care to stay healthy and sane. One rhesus maternal deprivation study concluded that, "the lack of a secure attachment relationship in the early years has detrimental consequences for both physical and mental health later in life, with long-lasting effects."¹¹⁴ IPS explains that parental "deprivation is known to have devastating effects."¹¹⁵ According to IPS, primates who lose their parents at an early age exhibit "behavior and physiology" that "is likely to be very different from their family-reared counterparts."¹¹⁶ "Primatologists repeatedly have emphasized the deleterious effects of maternal separation on juvenile monkeys," says one review.¹¹⁷

i. Maternal deprivation causes physical illness and injury.

In one study, monkey infants left isolated without their mothers fell ill about twice as often as those raised by their mothers.¹¹⁸ Almost every male infant left isolated developed an illness.¹¹⁹

¹⁰⁷ *Id.* at 860.

¹⁰⁸ Cirulli et al., *supra* at 580.

¹⁰⁹ Suomi, *supra* at 176.

¹¹⁰ Cirulli et al., *supra* at 580.

¹¹¹ Suomi, *supra*, at 172.

¹¹² *Id.* at 174.

¹¹³ *Id.* at 174.

¹¹⁴ Conti et al., *supra* at 8871.

¹¹⁵ International Primatological Society, *supra*, at 49.

¹¹⁶ *Id.* at 49.

¹¹⁷ *See* Reinhardt, *supra* at 154.

¹¹⁸ Conti et al., *supra* at 8869.

¹¹⁹ *Id.* at 8869.

Infant female monkeys taken from their mothers and left with other motherless infants often got injured or went bald, presumably as a result of attacks by other motherless infants.¹²⁰

A maternal deprivation experimentation review explained that experimentation on “rhesus macaques has shown that isolation rearing from birth leads to alterations in an array of physiological . . . processes.”¹²¹ According to IPS, primates taken from their mothers before weaning exhibit “abnormalities,” which “may even extend to the endocrine and immune systems.”¹²² Specifically, one maternal deprivation experiment found that monkeys taken from their mothers suffered from immunological problems, which the experimenters could not correct later in life.¹²³

Maternally deprived primates also suffer from neurological problems. Such deprivation of monkeys “has longterm consequences on morphologic brain development.”¹²⁴ One study explained that “behavioral, biochemical, and current imaging data taken together suggest that parental input may be of critical importance for the development of the central serotonergic system and that, in the absence of such input, substantial brain areas rich in serotonin may be impaired.”¹²⁵ Maternally-deprived monkeys also suffer from changes in amygdala activity.¹²⁶

ii. Maternal deprivation causes psychological problems.

A primate deprived of a mother’s care tends to suffer from long-term psychological problems.¹²⁷ “The psychological trauma resulting from preweaning maternal separation is long lasting, perhaps permanent, and so severe that it has been used as a model of stress, immunodeficiency, and depression,” explains one review.¹²⁸ According to another review, maternal deprivation research “clearly demonstrated that total social deprivation throughout infancy almost always results in extreme (and often permanent) behavioural abnormalities and severe social and emotional deficits, especially evident in aggressive, reproductive, and parenting activities.”¹²⁹ Another review

¹²⁰ *Id.* at 8870.

¹²¹ Cirulli et al., *supra* at 580.

¹²² International Primatological Society, *supra* at 48 (citations omitted).

¹²³ Gabriele R. Lubach, Christopher L. Coe & William B. Ershler, *Effects of Early Rearing Environment on Immune Responses of Infant Rhesus Monkeys*, 9 *Brain Behav. & Immunity*, 31 (1995) (Ex. 30).

¹²⁴ Simona Spinelli, Svetlana Chefer, Stephen J. Suomi, J. Dee Higley, Christina S. Barr & Elliot Stein, *Early-Life Stress Induces Long-term Morphologic Changes in Primate Brain*, 66 *Archives Gen. Psychiatry* 658, 662 (June 2009)(Ex. 31).

¹²⁵ Masanori Ichise, Douglass C. Vines, Tami Gura, George M. Anderson, Stephen J. Suomi, J. Dee Higley & Robert B. Innis, *Effects of Early Life Stress on [¹¹C]DASB Positron Emission Tomography Imaging of Serotonin Transporters in Adolescent Peer- and Mother- Reared Rhesus Monkeys*, 26 *J. Neuroscience* 4638, 4641 (April 26, 2006) (Ex. 32).

¹²⁶ Catherine E. Barrett, Pamela Noble, Erin Hanson, Daniel S. Pine, James T. Winslow & Eric E. Nelson, *Early Adverse Rearing Experiences Alter Sleep-Wake Patterns and Plasma Cortisol Levels in Juvenile Rhesus Monkeys*, 34 *Psychoneuroendocrinology* 1029, 1030 (2009) (Ex. 33).

¹²⁷ Suomi, *supra* at 176 (impulsivity is “another long-term developmental consequence” of maternal deprivation); *see also* International Primatological Society, *supra* at 48 (maternal deprivation “can result in behavioral abnormalities”); Cirulli et al., *supra* at 580 (experimentation on “rhesus macaques has shown that isolation rearing from birth leads to alterations in an array of . . . behavioural processes” and maternally-deprived infants left with other motherless infants “show important emotional and social disturbances and behavioural abnormalities”).

¹²⁸ Reinhardt, *supra* at 153.

¹²⁹ Suomi, *supra* at 175.

explained that experimentation on “rhesus macaques has shown that isolation rearing from birth leads to alterations in an array of . . . behavioural processes,” and that even those left with other motherless peers “show important emotional and social disturbances and behavioural abnormalities.”¹³⁰ A *Journal of the American Association for Laboratory Animal Science* article calls maternal deprivation “the single most important risk factor in the development of severe forms of abnormal behavior, such as self-biting, in rhesus macaques.”¹³¹

Primates deprived of a mother’s care tend to engage in pointless repetitive behaviors called *stereotypies*.¹³² Stereotypies signal psychosis, poor welfare, or severe stress.¹³³ One maternal deprivation study described stereotypies, also seen in human children without parents, as “behavioral abnormalities that are, at the very least, markers of deeper developmental deficits,” and that are associated with “both autism and cognitive and language deficits.”¹³⁴ Experimentors have found that infant primates kept without their mothers engage in unusual “self-directed behaviors such as self-sucking, self-clasping while rocking rhythmically, and self-biting.”¹³⁵

Maternal deprivation drives many primates to harm themselves. Adult macaques who grew up without their mothers are “11 times more likely to exhibit self-abuse behavior.”¹³⁶ In one study, a large portion of the maternally-deprived monkeys compulsively bit themselves—a “misdirected” behavior associated with fewer attempts to socialize, which “poses a serious risk to their well-being,” and which hardly ever occurred in the monkeys raised by their mothers.¹³⁷

Maternally-deprived primates also suffer social problems. “Individuals who are weaned early,” explains IPS, “may show deficiencies in social behavior.”¹³⁸ Macaques taken from their mothers exhibit “insufficient social behaviors.”¹³⁹ A review explained that monkeys taken from their mothers “show inadequate development of aggressive, affiliative, play, and sexual behaviour.”¹⁴⁰ Such macaques, “are highly reactive and aggressive and, as adults, rank at the bottom of the dominance hierarchy.”¹⁴¹ Monkeys taken from their mothers—even if raised with other motherless infants—“show a delay in the development of appropriate social behaviour.”¹⁴² These motherless

¹³⁰ Cirulli et al., *supra* at 580.

¹³¹ Ina Rommeck, Daniel H. Gottlieb, Sarah C. Strand & Brenda McCowan, *The Effects of Four Nursery Rearing Strategies on Infant Behavioral Development in Rhesus Macaques (Macaca mulatta)*, 48 *J. Am. Ass’n Laboratory Animal Sci.* 395, 395 (2009) (Ex. 34).

¹³² International Primatological Society, *supra* at 48; Cirulli et al., *supra* at 580, 581; Conti et al., *supra* at 8870.

¹³³ See *Dictionary Animal Behav.* (2 ed. 2014) (defining “stereotypies” as “a type of repetitive behaviour that appears under conditions of stress,” and that, “are an important aspect of the study of animal welfare”) (Ex. 35); Roger Kurlan, *A Clinically Useful Definition of Stereotypies*, 28 *Movement Disorders* 404 (2013) (Ex. 36) (stereotypies often associated with brain diseases, dementia, mental retardation, deafness, or blindness).

¹³⁴ Conti et al., *supra* at 8870.

¹³⁵ Rommeck et al., *supra*, at 396.

¹³⁶ *Id.* at 395.

¹³⁷ Lutz et al., *supra* at 584, 587–88, 590.

¹³⁸ International Primatological Society, *supra* at 48.

¹³⁹ Rommeck et al., *supra*, at 396.

¹⁴⁰ Cirulli et al., *supra* at 580.

¹⁴¹ *Id.* at 580.

¹⁴² *Id.* at 581.

monkeys played less frequently than normal monkeys their age.¹⁴³ Instead, the motherless monkeys exhibited “high levels of passivity and self directed . . . behaviours.”¹⁴⁴

Primates deprived of a mother’s care suffer severe stress and anxiety. Maternally-deprived primates show excessive fear, startle more easily, and become “hypervigilant.”¹⁴⁵ Maternally-deprived monkeys develop only “anxious” attachments with peers, “seem reluctant to explore novel objects,” and “tend to be shy in initial encounters with unfamiliar peers.”¹⁴⁶ Macaques taken from their mothers at infancy also exhibit “decreased exploration in novel environments.”¹⁴⁷ Monkeys taken from their mothers as infants and left with other motherless infants “display enlargement in stress-sensitive brain regions,” and an “altered cortisol response to acute stressors” that “is not reversed after 1.5 y[ears] of normal life.”¹⁴⁸ Male monkeys kept in isolation exhibit “higher cortisol levels” and “deficits in both ACTH and serotonin metabolism, because they have lower concentrations of 5-HIAA (the primary central serotonin metabolite), which is linked to aggression and antisocial behavior.”¹⁴⁹

One study found that monkeys deprived of a mother’s care as infants suffer from disrupted sleep, even at pre-puberty.¹⁵⁰ (The authors speculated that the monkey’s sleep troubles might *worsen* as they went through puberty.¹⁵¹) Maternally-deprived primates also become more impulsive,¹⁵² have trouble adapting to new circumstances,¹⁵³ and, given the opportunity, will turn to drinking alcohol.¹⁵⁴ Lastly, maternally-deprived primates struggle when they become mothers themselves. Without ever having experienced a mother’s love, they may neglect or abuse their own infants.¹⁵⁵

c) Experimenters continue to tear infant primates away from their mothers.

Despite evidence that infant primates need their mothers, some facilities continue to carry out cruel maternal deprivation experiments.¹⁵⁶ Experimenters described one such study by noting that infant “monkeys spent 22 [hours per day] alone in a cage with a surrogate mother (effectively a terry cloth-covered hot water bottle hanging from the top of the cage).”¹⁵⁷

Renowned primatologist Dr. Jane Goodall explains:

¹⁴³ *Id.* at 581.

¹⁴⁴ *Id.* at 581.

¹⁴⁵ Barrett et al., *supra* at 1030.

¹⁴⁶ Suomi, *supra* at 176.

¹⁴⁷ Rommeck et al., *supra*, at 396.

¹⁴⁸ Conti et al., *supra* at 8866.

¹⁴⁹ *Id.* at 8869.

¹⁵⁰ Barrett et al., *supra* at 1035.

¹⁵¹ *Id.* at 1035.

¹⁵² Suomi, *supra* at 176.

¹⁵³ International Primatological Society, *supra* at 48.

¹⁵⁴ Cirulli, *supra* at 580 (the deprived primates “show increased voluntary alcohol consumption”).

¹⁵⁵ Suomi, *supra* at 177.

¹⁵⁶ *See, e.g.*, Cirulli et al., *supra* (review of maternal deprivation experiments); Conti et al., *supra* (maternal deprivation experiment, discussing previous experiments); Lutz et al., *supra* (maternal deprivation experiment, discussing previous experiments).

¹⁵⁷ Conti et al., *supra* at 8866.

Extensive experiments proving the damaging effects of maternal deprivation and isolation were carried out on rhesus monkeys by Harry Harlow and his students in the 1950s, 1960s and 1970s. And even after proof had been obtained, Harlow continued to devise ever more stressful situations. . . . These experiments, getting more and more extreme, were unbelievably cruel. Nevertheless researchers continued working in this field after Harlow's death, and continue to do so today."¹⁵⁸

Dr. Goodall described one laboratory's maternal deprivation experiments as "extremely cruel," "inhumane," and "unacceptable;" and said that the experiments "shocked and saddened" her.¹⁵⁹

"For the past three decades," explains primatology and neuroanatomy expert, Dr. Lori Marino, a group of experimenters "has deprived hundreds of infant macaques of maternal contact to cause them to suffer from a range of severe and persistent cognitive, social, emotional, and physical deficits."¹⁶⁰



Experimenters subjected this monkey to forced maternal deprivation at birth, leaving the monkey alone with only a cloth-covered water bottle to cling to for comfort. PETA uncovered this photograph of a Poolesville, Maryland facility via a Freedom of Information Act request.

Maternal deprivation experiments constitute a particularly egregious and sadistic form of neglect. In addition, some facilities routinely take infants from their mothers before natural weaning age, as part of a misguided breeding practice.¹⁶¹

¹⁵⁸ PETA Correspondence with Dr. Jane Goodall, DBE, Founder, The Jane Goodall Institute, U.N. Messenger of Peace (Ex. 37).

¹⁵⁹ *Id.*

¹⁶⁰ PETA Correspondence with Dr. Lori Marino, Executive Director, The Kimmela Center for Animal Advocacy (Ex. 38).

¹⁶¹ *See Reinhardt, supra* at 151 (2002).

e) APHIS can protect primates by requiring maternal rearing.

APHIS should require facilities to leave primates with their mothers until at least until the natural age of weaning for the species. APHIS might make an exception for rare situations in which the mother dies accidentally or proves completely unable to care for her young. An ongoing trend of parenting problems at a facility should prompt an APHIS assessment of primate well-being at that facility.¹⁶² APHIS should also require the prompt delivery of any accidentally-orphaned or rejected infant to an adult female of the same species. In addition, APHIS should forbid the killing, sedation, or physical restraint of any mother primate while she has an infant in her care.¹⁶³ (Video uncovered by a People for the Ethical Treatment of Animals (PETA) Freedom of Information Act shows an NIH-funded experiment instilling terror in infant primates by sedating the infants' mothers. The infants respond by shrieking and trying to revive their non-responsive parents.)

Maternal deprivation so deeply damages infant primates that it defies the statutory command to promote primates' psychological well-being. Maternal deprivation violates these infants' most basic psychological need: their mothers. In addition, maternal deprivation experiments lack validity,¹⁶⁴ are unnecessary,¹⁶⁵ and provide no value to human health.¹⁶⁶ The abundance of available information about the negative physical and psychological impacts of maternal deprivation on primates also demonstrates the extent to which experiments that purposefully employ these practices are utterly unnecessary, repetitive, and wasteful. As such, minimum standards of care for primates under the AWA must necessarily include a prohibition on forced maternal deprivation for infant primates.

¹⁶² See International Primatological Society, *supra* at 20 (“A re-examination and amendment of management practices is recommended in order to reduce the incidence of infant rejection.”).

¹⁶³ Except, in the case of a documented veterinary reason, temporarily to protect the mother's or infant's health.

¹⁶⁴ See, e.g., PETA Correspondence with Dr. John P. Gluck, Emeritus Professor of Psychology, University of New Mexico and Research Professor, Kennedy Institute of Ethics, Georgetown University (Ex. 39) (“In the past, I conducted experiments on the impact of social deprivation on monkey intelligence and abnormal social behavior. I eventually chose to leave that area of research because I came to believe that those models did not accurately represent the development and presentation of human mental illness.”).

¹⁶⁵ See, e.g., PETA Correspondence with Dr. Lawrence A. Hansen, Professor and Researcher, University of California, San Diego, School of Medicine Department of Pathology (Ex. 40) (“The scientific objections to continuing this [maternal deprivation] research are immediately obvious. . . . [T]hese efforts are hopelessly crude and antiquated.”).

¹⁶⁶ See, e.g., Marino, *supra* (“There is no compelling evidence that these [maternal deprivation] studies are now or have they ever been beneficial to humans.”)