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Attention: Docket ID Nos. NHTSA-2018-0067; EPA-HQ-OAR-2018-0283, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks; and

Docket No. NHTSA-2017-0069, Draft Environmental Impact Statement, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks

Joint Comments of Environmental Organizations Regarding the Proposed Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks

Comments Specific to the Endangered Species Act

The Center for Biological Diversity, Earthjustice, Natural Resources Defense Council, and Sierra Club ("Commenters") hereby submit these comments on the Safer Affordable Fuel-Efficient (SAFE) Vehicle Rule for Model Year 2021-2026 Passenger Cars and Light Trucks (the "Proposal"), issued jointly by the National Highway Safety Administration ("NHTSA") and the Environmental Protection Agency ("EPA"), and its accompanying Draft Environmental Impact Statement ("DEIS"), issued by NHTSA. These comments concern the agency's duty to conduct

consultations in accordance with the Endangered Species Act ("ESA")[1] if it intends to finalize the Proposal. We note that the Commenters will submit additional joint and separate comments to this docket on other subjects relating to the Proposal.

As described in those other joint and separate comments, the Proposal is unlawful, arbitrary and capricious for a host of reasons. In direct violation of its Congressional mandate to conserve energy and set the maximum feasible fuel efficiency standards for the nation's passenger and light truck vehicle fleet, NHTSA proposes to weaken its own augural fuel efficiency standards for model year ("MY") 2022-2025 vehicles, in addition to the standard for MY 2021 currently in effect, and freeze the standards through 2026 at MY 2020 levels. In contravention to its obligation under section 202 of the Clean Air Act, EPA proposes to revise its MY 2021-2025 greenhouse gas standards for passenger cars and light trucks and also freeze emission standards at MY 2020 levels through MY 2026. The Proposal would result in vast increases of fuel consumption and result in much higher emissions of greenhouse gases and other pollutants compared to leaving the current MY 2022-2025 fuel efficiency and greenhouse gas standards on the books. The Proposal, if finalized, would be in direct violation of the National Environmental Policy Act ("NEPA"), the Energy Policy and Conservation Act ("EPCA"), as amended by the Energy Independence and Security Act ("EISA") and the Clean Air Act, and would violate the Administrative Procedure Act.

In addition, the agencies have improperly concluded that a consultation under the ESA is unnecessary,[2] and these comments address that subject. Any finalization of the Proposal or the accompanying draft Environmental Impact Statement ("DEIS") would be unlawful unless the agencies first comply with the ESA's consultation provisions.

All references cited in these comments, and listed in the attachment at the end of this document, will be uploaded to the dockets on the Proposal and the DEIS.

A. The Proposed Repeal is a non-ministerial action that triggers the ESA's duty to consult.

Where an agency action that is non-ministerial – such as the promulgation of a rule or the repeal or revision of a rule – may adversely affect ESA-listed species, the agency must first comply with the ESA.[3] Here, the Proposal would freeze the fuel efficiency and greenhouse emission standards for the nation's light duty vehicle fleet at MY 2020 levels through MY 2026, rescinding existing and augural standards for MY 2022 through MY 2025 and foregoing any increases for MY 2026. Those actions would vastly increase greenhouse gas and nitrogen oxide

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[1] 16 U.S.C. § 1531 *et. seq.*

[2] The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, Fed. Reg. 42,986 (Aug. 24, 2018) ("Proposal"), at 43,473; Draft Environmental Impact Statement for the Safer Affordable Fuel-Efficient (SAFE) Vehicle Rules for Model Year 2021-2026 Passenger Cars and Light Trucks (July 2018), available at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/ld_cafe_my2021-26_deis_0.pdf ("DEIS"), at 7-1.

[3] 16 U.S.C. § 1531 et. seq.

(NOx) air pollutants above the levels that would be achieved if that rule were left unchanged; accordingly, the agencies must conduct a consultation under Section 7 of the ESA before finalizing the Proposal or DEIS.

Section 7 requires the agencies to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (collectively "the Services") to "insure that any action authorized, funded, or carried out by such agency…is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of [critical] habitat."[4] Agency "action" is broadly defined in the ESA's implementing regulations to include "(b) the promulgation of regulations . . ."[5] Once the consultation duty is triggered, agencies must use the "best scientific and commercial data available" in completing the consultation process.[6]

Any agency action that may affect a listed species or its critical habitat triggers the consultation requirement. The threshold for a finding of "may affect" is extremely low: "any possible effect, whether beneficial, benign, adverse, or of an undetermined character, triggers the formal consultation requirement."[7]

In the DEIS, NHTSA itself projects that the agencies' preferred alternative, which freezes fuel economy standards at 2020 levels through MY 2026 (i.e., for six years), will increase CO_2 emissions by 95 million metric tons ("MMT") by 2040, compared to emissions if the existing standards remain in place.[8] Without question, 95 additional MMTs of CO_2 emissions within the next 22 years constitute an enormous amount of greenhouse gas pollution. But as pointed out in separate comments submitted to this docket by the Environmental Defense Fund ("EDF"), the numerous technical and modeling errors suffusing the Proposal result in a vast underestimation of the greenhouse gas pollution that would be caused if the Proposal were finalized. When correcting the model NHTSA used for the agencies' errors, the total greenhouse gas emissions nearly double through 2040, amounting to 189 MMT.[9] This amounts to a staggering emissions increase.

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[4] *Id.* § 1536(a)(2).
[5] 50 C.F.R. § 402.02.
[6] 16 U.S.C. § 1536(a)(2).
[7] Interagency Cooperation—Endangered Species Act of 1973, as Amended; Final Rule, 51 Fed. Reg. 19,926, 19,949 (June 3, 1986); U.S. Fish and Wildlife Service and National Marine Fisheries Service, Endangered Species Consultation Handbook (March 1998) at xvi (defining "may affect" as "the appropriate conclusion when a proposed action may pose any effects on listed species ….").
[8] DEIS, Tables D-9, D-10.
[9] Comments of Environmental Defense Fund on National Highway Traffic Safety Administration Draft Environmental Impact Statement for the Safer Affordable Fuel-Efficient (SAFE) Vehicle Rule for Model Year 2021-2026 Passenger Cars and Light Trucks, submitted to Docket No. NHTSA-2017-0069 on October 26, 2018 ("EDF Comments"). We reserve the right to submit supplemental comments concerning emission effects as the 63-day period the agencies granted for the submission of comments was insufficient in light of the novelty of and numerous errors in its model and assumptions; a proposal and ancillary documents spanning thousands of pages; and important information requested by the California Air Resources Board (*see* request in the docket) not yet supplied. We thus reserve the right to submit

Similarly, the combustion of fossil fuel by vehicles produces nitrogen oxide (NOx) air pollutants, including nitrous oxide (N_2O), nitric acid (HNO_3), nitrate (NO_3^-), and ammonia (NH_3) (collectively, "NOx"). In the DEIS, NHTSA, counterintuitively, asserts that NOx emissions would be lower without the standards in 2025 and 2035.[10] But EDF's analysis demonstrates that NHTSA's modeling errors vastly understate NOx emissions, and that emissions will in fact increase in each of 2025, 2035 and 2050, to 23,225, 53,181, and 63,902 tons per year respectively.[11]

The Proposal clearly crosses the "may affect" threshold as it is likely to injure many federally-listed threatened and endangered species that are at risk of extinction due to human-caused climate change, as well as those that are at risk of extinction due to NOx emissions. Accordingly, the agencies' mandate to conduct consultation as required under Section 7 is triggered. The agencies must meaningfully evaluate the consequences of their action on endangered species before making any decision to finalize the Proposal, and in no circumstances may the agencies jeopardize listed species or destroy their critical habitat.

B. Climate change has clear and documented adverse impacts on federally protected species.

The best available science shows that anthropogenic climate change is causing widespread harm to life across the planet. Climate change is already affecting 82 percent of key ecological processes that underpin ecosystem function and support basic human needs.[12] Climate change-related local extinctions are already widespread and have occurred in hundreds of species, including almost half of 976 species surveyed.[13] Nearly half of terrestrial threatened mammals and nearly one-quarter of threatened birds may have already been negatively affected by climate change in at least part of their range.[14]

Numerous studies have projected catastrophic species losses during this century if climate change continues unabated.[15] A 2013 study projected a loss of more than half of the present climatically suitable range for 58 percent of plants and 35 percent of animals by the

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supplemental comments if further work indicates that these and other pollution emissions' estimates require an update.

[10] DEIS, at S-8, S-10-11.

[11] Comments of Environmental Defense Fund on National Highway Traffic Safety Administration Draft Environmental Impact Statement for the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks, Docket No. NHTSA-2017-0069.

[12] Scheffers, Brett R. et al., The Broad Footprint of Climate Change from Genes to Biomes to People, 354 Science 719 (2016).

[13] Wiens, John J., Climate-Related Local Extinctions are Already Widespread among Plant and Animal Species, 14 PLoS Biology e2001104 (2016).

[14] Pacifici, Michela et al., Species' Traits Influenced Their Response to Recent Climate Change, 7 Nature Climate Change 205 (2017).

[15] Thomas, Chris. D. et al., Extinction Risk from Climate Change, 427 Nature 145 (2004); Maclean, Ilya M. D, et al., Recent Ecological Responses to Climate Change Support Predictions of High Extinction Risk, 108 Proceedings of the National Academy of Sciences of the United States of America 12337 (2011); Urban, Mark C., Accelerating extinction risk from climate change, 348 Science 571 (2015).

2080s under the current emissions pathway, in a sample of 48,786 species.[16] In fact, it is predicted that within a century, over 300 North American bird species will lose at least half of their current ranges due to climate change.[17]

Greenhouse gas emissions harm endangered species in several ways that are not only measurable but also causally understood. Climate change impacts relating to sea-ice loss, thermal stress and ocean acidification, sea level rise and attendant precipitation extremes, decreasing snowpack and elevational and latitudinal shifts in habitat all must be assessed prior to the finalization of the Proposal.

Loss of sea ice. The loss of sea ice is one of the clearest and most obvious consequences of global warming. Sea-ice loss, and the loss of sea-ice dependent prey, led the U.S. Fish and Wildlife Service to list the polar bear (*Ursus maritimus*) as a threatened species in 2008.[18] As a top Arctic predator, the polar bear relies on sea ice for all its essential activities, including hunting for prey, moving long distances, and building dens to rear cubs. Federal documents admit that shrinkage and premature breakup of sea ice due to climate change is the primary threat to the species, leaving bears with vastly diminished hunting grounds, less time to hunt, and a shortage of sea ice to rest.[19] In the southern Beaufort Sea of Alaska, evidence indicates that polar bears have declined by 40 percent in recent years,[20] are starving, utilizing unusual and desperate foraging behaviors to try to catch seals, and even resorting to cannibalism.[21]

If current emissions trends continue, scientists estimate that two-thirds of global polar bear populations will be lost by 2050, while the remaining third will near extinction by the end of the century due to the disappearance of sea ice.[22] However, aggressive emissions reductions will

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[16] Warren, Rachel et al., Quantifying the Benefit Of Early Climate Change Mitigation in Avoiding Biodiversity Loss, 3 Nature Climate Change 678 (2013).

[17] National Audubon Society, Audubon's Birds and Climate Change Report (2014) *at* p. 5, *available at* http://climate.audubon.org/article/audubon-report-glance.

[18] U.S. Fish and Wildlife Service, Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout Its Range, 73 Federal Register 28212, 28293 (May 15, 2008): "On the basis of our thorough evaluation of the best available scientific and commercial information regarding present and future threats to the polar bear posed by the five listing factors under the Act, we have determined that the polar bear is threatened throughout its range by habitat loss (i.e., sea ice recession). We have determined that there are no known regulatory mechanisms in place at the national or international level that directly and effectively address the primary threat to polar bears—the rangewide loss of sea ice habitat."

[19] 73 Federal Register 28212-28303 (May 15, 2008); U.S. Fish and Wildlife Service, Polar bear (*Ursus maritimus*) Conservation Management Plan, Final. U.S. Fish and Wildlife Service, Region 7, Anchorage, Alaska (2016) ("Polar Bear Conservation Management Plan 2016"); U.S. Fish and Wildlife Service, Polar Bear (*Ursus maritimus*) 5-Year Review: Summary and Evaluation, U.S. Fish and Wildlife Service, Marine Mammals Management, Anchorage, Alaska (February 3, 2017) ("Polar Bear 5-Year Review Summary").

[20] Bromaghin, Jeffrey F. et al., Polar Bear Population Dynamics in the Southern Beaufort Sea during a Period of Sea Ice Decline, 25 Ecological Applications 634 (2015).

[21] Polar Bear 5-Year Review Summary.

[22] Amstrup, Steven C. et al., Forecasting the Range-wide Status of Polar Bears at Selected Times in the 21st Century, U.S. Department of the Interior and U.S. Geological Survey, USGS Science Strategy to Support U.S. Fish and Wildlife Service Polar Bear Listing Decision, Reston, Virginia (2007); Amstrup,

allow substantially more sea ice to persist and increase the chances that polar bears will survive in Alaska and across their range.[23] As such, the U.S. Fish and Wildlife Service's 2016 Final Polar Bear Conservation Management Plan clearly stated that the polar bear cannot be recovered without significant reductions in the greenhouse gas emissions driving Arctic warming and sea ice loss.[24] If the Proposal is finalized, the vast additional greenhouse gases emitted from the nation's light duty vehicle fleet will exacerbate the loss of sea ice, causing the likelihood of survival and recovery of the species to diminish appreciably. The agencies must consult on how the Proposal would affect sea ice loss for a listed species like the polar bear.

Thermal stress and ocean acidification. Two other incontrovertible environmental impacts caused by greenhouse gas pollution are thermal stress and ocean acidification which are wreaking havoc on our ocean's coral reef systems. Currently, 25 species of corals are listed under the Endangered Species Act. Once abundant throughout the Caribbean Sea, elkhorn and staghorn corals *(Acropora palmata* and *A. cervicornis)* precipitously declined 92 to 97 percent due largely to disease driven by thermal stress from rising ocean temperatures.[25] Global average sea surface temperature has risen by 1.3°F per century since 1900 as a result of the world's oceans absorbing more than 90 percent of the excess heat caused by greenhouse gas warming.[26]Anthropogenic ocean warming is linked to the catastrophic, mass coral bleaching events that have been documented since 1980 and are increasing in frequency and intensity as atmospheric CO_2 increases.[27]

Exacerbating the harms from warming, the global oceans have absorbed more than a quarter of the CO_2 emitted to the atmosphere by human activities, which has significantly increased the acidity of the surface ocean in a process called ocean acidification and has reduced the availability of key chemicals — aragonite and calcite — that many marine species use to

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Steven C. et al., Greenhouse Gas Mitigation Can Reduce Sea Ice Loss and Increase Polar Bear Persistence, 4 Nature 955 (2010) ("Amstrup 2010").

[23] Amstrup 2010; Atwood, Todd C. et al., Forecasting the Relative Influence of Environmental and Anthropogenic Stressors on Polar Bears, 7 Ecosphere e01370 (2016).

[24] Polar Bear Conservation Management Plan 2016 at 11: "It cannot be overstated that the single most important action for the recovery of polar bears is to significantly reduce the present levels of global greenhouse gas (GHG) emissions, which are the primary cause of warming in the Arctic."

[25] NMFS and NOAA, Final Listing Determinations for Elkhorn and Staghorn Coral, 71 Fed. Reg. 26,852, 26,872 (May 9, 2006); Randall, C. J. and R. van Woesik, Contemporary White-band Disease in Caribbean Corals Driven by Climate Change, 5 Nature Climate Change 375 (2015).

[26] U.S. Global Change Research Program (USGCRP), Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J. et al. (eds.)], U.S. Global Change Research Program, Washington, DC (2017) ("USGCRP Fourth National Climate Assessment 2017"), https://science2017.globalchange.gov/ at 364, 367.

[27] Hoegh-Guldberg, O. et al., Coral Reefs Under Rapid Climate Change and Ocean Acidification, 318 Science 1737 (2007); Donner S.D., et al, Coping with Commitment: Projected Thermal Stress on Coral Reefs under Different Future Scenarios, 4 PLoS ONE e5712 (2009); Eakin, C. Mark et al., Caribbean Corals in Crisis: Record Thermal Stress, Bleaching, and Mortality in 2005, 5 PLoS ONE e13969 (2010); National Marine Fisheries Service, Elkhorn Coral and Staghorn Coral Recovery Plan, Southeast Regional Office (March 3, 2015) ("Coral Recovery Plan 2015") at 51; Hughes, Terry P. et al., Spatial and Temporal Patterns of Mass Bleaching of Corals in the Anthropocene, 359 Science 80 (2018).

build their shells and skeletons.[28] Ocean acidification caused by the ocean's absorption of anthropogenic CO_2 has already resulted in more than a 30 percent increase in the acidity of ocean surface waters, at a rate likely faster than anything experienced in the past 300 million years.[29] Ocean acidification has been linked to reduced coral calcification rates in reefs worldwide.[30] Climate models and experimental research indicate that elkhorn and staghorn corals are directly threatened by increasing ocean temperatures combined with acidification resulting from rising global atmospheric CO_2 levels. Scientific research and federal documents conclude that conservation and recovery actions must rapidly reduce greenhouse gas emissions and return atmospheric CO_2 levels below 350 ppm in for corals to survive and recover.[31] Since the ocean has absorbed more than 90 percent of the excess heat caused by greenhouse gas warming and more than a quarter of the CO_2 emitted by human activities,[32] it is critical for the survival of the elkhorn and staghorn corals to prevent an additional 415 million short tons of CO_2 from being released. At a minimum, the agencies must assess how the increases in carbon dioxide emissions will affect these climate-sensitive ocean species.

Sea level rise. According to the 2017 U.S. Climate Science Special Report, global average sea level is likely to rise by 1.0 to 4.3 feet by the end of the century relative to the year 2000, with sea level rise of 8.2 feet possible.[33] Sea level rise will be much more extreme under higher emissions scenarios.[34] According to a 2013 analysis, on the current emissions trajectory, rising seas driven by warming temperatures threaten at least 17 percent of our nation's federally protected species, totaling 233 species in 23 coastal states.[35] For example, more than half of Florida's endangered species are threatened by rising sea levels and associated groundwater contamination.[36] Most (87 percent) loggerhead sea turtle (*Caretta caretta*) nesting occurs on the east coast of Florida,[37] where 43 percent of the turtle's nesting beaches are expected to disappear

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[28] USGCRP Fourth National Climate Assessment 2017 at 371-372.
[29] Hönisch, Barbel et al., The Geological Record of Ocean Acidification, 335 Science 1058 (2012); USGCRP Fourth National Climate Assessment 2017 at 372, 374.
[30] Albright, Rebecca et al., Reversal of Ocean Acidification Enhances Net Coral Reef Calcification, 531 Nature 362 (2016).
[31] Veron, J.E.N. et al., The Coral Reef Crisis: the Critical Importance of <350 ppm CO_2, 58 Marine Pollution Bulletin 1428 (2009); Frieler, K., et al., Limiting Global Warming to 2°C is Unlikely to Save Most Coral Reefs, 3 Nature Climate Change 165 (2012); van Hooidonk, R. et al., Opposite Latitudinal Gradients in Projected Ocean Acidification and Bleaching Impacts on Coral Reefs, 20 Global Change Biology 103 (2014): Even on the lowest emissions pathway considered (RCP 2.6) in which CO_2 concentrations peak at ~430ppm around 2050 followed by a decline to around 400 ppm CO_2 by the end of the century, 88 percent of reef locations experience severe bleaching events annually by the end of the century; Coral Recovery Plan 2015 at 50-51 (see also recovery criteria at 86 and 88).
[32] USGCRP Fourth National Climate Assessment 2017 at 364.
[33] *Id.* at 25-26, 333, 343.
[34] *Id.* at 344: By the end of the century, global mean sea level rise is projected to increase by 0.8 to 2.6 feet under a lower emissions RCP 2.6 scenario, compared with 1.6 to 6 feet under a high emissions RCP 8.5 scenario which global emissions are currently tracking.
[35] Center for Biological Diversity, Deadly Waters: How Rising Seas Threaten 233 Endangered Species (Dec. 2013).
[36] *Id.*
[37] National Oceanic and Atmospheric Administraton, Proposed Listing of 9 Distinct Population Segments of Loggerhead Sea Turtles, 75 Fed. Reg. 12598-12656 (2010).

with just 1.5 feet of sea level rise.[38] Finalizing the Proposal is likely to result in a significant increase of CO_2 emissions and affect sea level rise. The Proposal thus triggers the agencies' legal duty under the ESA to consult on how continued habitat loss due to sea level rise will adversely affect the loggerhead sea turtle.

The single most important action to avoid further jeopardizing climate-threatened species is achieving emissions reductions that keep warming well below two degrees Celsius, and meaningfully lessens carbon-induced acidification. Consultation under the ESA is the critical first step to preventing the worst impacts of climate change and acidification on endangered species. The agencies' Proposal, if finalized, would directly contribute to significantly higher emissions and their attendant climate change and acidification effects, and thus triggers the duty to consult on those impacts to climate-threatened species like polar bears and corals to ensure that any final agency is not likely to jeopardize these and other species or result in the adverse modification of their critical habitat. Failure to conduct this consultation would render any final repeal unlawful.

C. Nitrogen oxide pollution has clear and documented adverse impacts on federally protected species.

Fossil fuel combustion from vehicles produces nitrogen oxide (NOx) air pollutants including nitrous oxide (N_2O), as well as nitric acid (HNO_3), nitrate (NO_3^-), and ammonia (NH_3), which have contributed to the significant increase in nitrogen deposition globally and in many parts of the United States,[39] resulting in widespread impacts to species and ecosystems.[40]

A recent study of the effects of nitrogen pollution on federally listed species, based on analysis of U.S. Fish and Wildlife Service and National Marine Fisheries Service documents, found that this threat is "substantial" and "geographically widespread."[41] The study found evidence for harm from nitrogen pollution for at least 78 federally protected taxa.[42] This includes at least 50 invertebrates such as mollusks and anthropods, at least 18 vertebrate species of fish, amphibians, and reptiles, and at least 8 plants.[43] Harms from nitrogen pollution fell into four main categories: (1) direct toxicity or lethal effects of nitrogen, (2) eutrophication lowering dissolved oxygen levels in water or causing algal blooms that alter habitat by covering up substrate, (3) nitrogen pollution increasing nonnative plant species that directly harm a plant

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[38] Reece, Joshua S. et al., Sea Level Rise, Land Use, and Climate Change Influence the Distribution of Loggerhead Turtle Nests at the Largest USA Rookery (Melbourne Beach, Florida), 493 Marine Ecology Progress Series 259 (2013).
[39] Fowler, David et al., The Global Nitrogen Cycle in the Twenty-first Century, 368 Phil Trans R Soc B 20130164 (2013).
[40] Fenn, Mark E., Ecological Effects of Nitrogen Deposition in the Western United States, 53 BioScience 404 (2003); Hernandez, Daniel L. et al., Nitrogen Pollution is Linked to US Listed Species Declines, 66 BioScience 213 (2016).
[41] Hernandez, Daniel L. et al., Nitrogen Pollution is Linked to US Listed Species Declines, 66 BioScience 213 (2016) at 220.
[42] *Id.* at 215, 220.
[43] *Id.* at 216-217 at Tables 1, 2, 3.

species through competition, and (4) nitrogen pollution increasing nonnative plant species that indirectly harm animal species by excluding their food sources.[44]

For example, nitrogen deposition from vehicle exhaust is a well-documented threat to the bay checkerspot butterfly (*Euphydryas editha bayensis*), which is restricted to patches of low-nutrient serpentinite soil in the San Francisco Bay area.[45] Nitrogen deposition has allowed exotic grasses to replace native forbs, including the bay checkerspot's larval host plant, leading to butterfly population declines and local extirpations.[46] U.S. Fish and Wildlife Service, in its most recent 5-year review for the bay checkerspot butterfly, found that nitrogen deposition from smog-created soil conditions allowed for rapid invasion of non-native plants where the level of impact increased with proximity to a major interstate highway:

> Weiss (1999, p. 1476) determined that while the initial cause of the butterfly declines were the result of rapid invasion by nonnative annual grasses that crowded out the butterfly's larval host plants, the evidence indicated that dry nitrogen deposition from smog was responsible for creating soil conditions that allowed the observed grass invasion. Weiss (1999, p. 1482) estimated nitrogen deposition rates south of San Jose to be 10-15 kg of nitrogen per hectare per year (kg-N/ha/yr). Weiss (2002, p. 31) further demonstrated these effects by analyzing the pattern of non-native grass invasion resulting from nitrogen deposition at Edgewood Park, and observed that the cover of non-native Italian ryegrass (*Lolium multiflorum*) decreased with distance from Interstate Highway 280 (I-280), while *Plantago erecta* cover increased with distance. *Plantago erecta* cover was also higher upwind of I-280 than downwind.[47]

In its 5-year review, U.S. Fish and Wildlife Service concluded that "the butterfly is still at great risk from invasion of non-native vegetation, exacerbated by nitrogen deposition from air pollution."[48]

Similarly, U.S. Fish and Wildlife Service has determined that nitrogen pollution threatens the federally protected Quino checkerspot butterfly (*Euphydryas editha quino*) and the desert tortoise (*Gopherus agassizii*) by facilitating the spread of non-native species that displace the

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[44] *Id.* at 215-217.
[45] Fenn, Mark E., Ecological Effects of Nitrogen Deposition in the Western United States, 53 BioScience 404 (2003); U.S. Fish and Wildlife Service, Bay Checkerspot Butterfly (*Euphydryas editha bayensis*) 5-Year Review: Summary and Evaluation, Sacramento Fish and Wildlife Office (August 2009); Hernandez, Daniel L. et al., Nitrogen Pollution is Linked to US Listed Species Declines, 66 BioScience 213 (2016); Tzankova, Sdravka et al., Can the ESA Address the Threats of Atmospheric Nitrogen Deposition? Insights from the Case of the Bay Checkerspot Butterfly, Harvard Environmental Law Review, Vol. 35 (2011).
[46] Weiss, Stuart B., Cars, Cows and Checkerspot Butterflies: Nitrogen Deposition and Management of Nutrient-poor Grasslands for a Threatened Species, 13 Conservation Biology 1476 (1999).
[47] U.S. Fish and Wildlife Service, Bay CheckerspotBbutterfly (*Euphydryas editha bayensis*) 5-Year Review: Summary and Evaluation, Sacramento Fish and Wildlife Office (August 2009) at 13.
[48] *Id.* at 18 and 31.

butterfly's host plants[49] and the tortoise's forage plants, reducing the nutritional quality of available food for the desert tortoise.[50]

Likewise, a review on the effects of nitrogen deposition in the western United States highlighted the need for policy changes at the national level for reducing air pollution to protect endangered species from nitrogen deposition: "[L]ocal land management strategies to protect these endangered species may not succeed unless they are accompanied by policy changes at the regional or national level that reduce air pollution."[51]

NHTSA's and EPA's joint proposal to freeze fuel efficiency standards for the nation's light duty vehicle fleet for a full six years will result in vast amounts of additional NOx emissions not just for those six years, but also for the decades during which these higher-polluting vehicles will continue to be on the road. The Proposal thus triggers the agencies' legal duty under the ESA to consult on how these additional pollutants will adversely affect the species threatened by them.

In sum, for the numerous reasons set forth in other joint and separate comments submitted to this docket by the Commenters and other environmental and health organizations, we urge the agencies to withdraw the Proposal and instead protect the public and the environment by implementing and even strengthening the vehicle fuel efficiency and greenhouse gas standards. Should the agencies nonetheless go forward, they must conduct a meaningful consultation under Section 7 or the ESA and proceed accordingly. Any failure to do so would render the Proposal unlawful for this separate and independent reason.

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[49] U.S. Fish and Wildlife Service, Quino Checkerspot Butterfly (*Euphydryas editha quino*) 5-Year Review: Summary and Evaluation, Carlsbad Fish and Wildlife Office (August 2009), at 13, 15, 18.

[50] Nagy, Kenneth A. et al., Nutritional Quality of Native and Introduced Food Plants of Wild Desert Tortoises, 32 Journal of Herpetology 260 (1998); Allen, Edith B. et al., Impacts of Atmospheric Nitrogen Deposition on Vegetation and Soils at Joshua Tree National Park, pages 78-100 *in* R.H. Webb, L.F. Fenstermaker, J.S. Heaton, D.L. Hughson, E.V. McDonald, and D.M. Miller, eds. The Mojave Desert: Ecosystem Processes and Sustainability. University of Nevada Press, Las Vegas (2009); U.S. Fish and Wildlife Service, Mojave Population of the Desert Tortoise (*Gopherus agassizii)* 5-Year Review: Summary and Evaluation, Tortoise Recovery Office (September 2010), at 24, 33.

[51] Fenn, Mark E., Ecological effects of nitrogen deposition in the Western United States, 53 BioScience 404 (2003) at 416. See also Hernandez, Daniel L. et al, Nitrogen Pollution is Linked to U.S. Listed Species Declines, BioScience, Vol 66, Issue 3 (March 1, 2016), https://doi.org/10.1093/biosci/biw003; Selmants, Paul C. et al., Realistic Plant Species Losses Reduce Invasion Resistance in a California Serpentine Grassland, Journal of Ecology 100, p. 723-731 (2012), doi: 10.1111/j.1365-2745.2011.01949.x.

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