

THE KEY DEER IS HEADED FOR EXTINCTION: HOW REPEALING A TRUMP-ERA FEDERAL RULE DEFINING “HABITAT” COULD ALLOW ASSISTED MIGRATION TO SAVE SPECIES THREATENED BY CLIMATE CHANGE

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I. INTRODUCTION

Climate change induced sea level rise is imminent.¹ In fact, the U.S. Army Corps of Engineers has predicted that “[b]y 2045, the sea level in the Florida Keys will rise 15 inches”² Such a projection usually invites questions about the implications for coastal residential homeowners. However, this projection means so much more for the voiceless inhabitants of the Florida Keys. Anthropogenic climate change that leads to sea level rise of this magnitude will be responsible for permanently destroying species’ habitats, and therefore impacting their ability to survive. For endangered and threatened species, this means extinction. As such, humanity has a responsibility to assist these species in their fight against obliteration.

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¹ See R. Warrick & J. Oerlemans, *Sea Level Rise*, in CLIMATE CHANGE: THE IPCC SCIENTIFIC ASSESSMENT 257, 263, 276 (J.T. Houghton et al. eds., 1990) (stating that at least thirteen studies on mean sea level rise have concluded that global-mean sea level has risen over the last 100 years, and the *best* estimate for future sea level rise is that by the year 2030 global sea level will have risen eighteen centimeters).

² UNION OF CONCERNED SCIENTISTS, ENCREACHING TIDES IN THE FLORIDA KEYS: INVESTING IN PREPAREDNESS TO SAVE MONEY AND MANAGE THE IMPACTS OF RISING SEAS 1 (2015).

Climate change is a global threat,³ and the global community must work together to combat this common enemy. This fight is especially important because vulnerable communities stand to bear the worst of what is to come from climate change. For example, sea level rise threatens to consume small island nations—placing their statehood and their territorial integrity at risk.⁴ Similarly, the Key deer face a bleak future as sea level rise threatens the Florida Keys more severely than other landlocked parts of the United States.

Isolated on islands, the Key deer cannot migrate inland as sea level rise consumes their home. Additionally, sea level rise diminishes freshwater sources crucial to the survival of the Key deer.⁵ As animals, Key deer cannot lobby for their own safety. Thus, effective human stewardship is the only way to save the Key deer from extinction.

To make matters worse, sea level rise is not the only imminent threat the Key deer face. Human activity has a long history of placing the Key deer in peril. Dating back to the 1940's and 1950's, intense hunting and habitat loss led to the near extinction of the Key deer species as a whole.⁶ The installation of fences (“fencing”) is also a prominent human threat to the Key deer; fencing has rendered thirty percent (30%) of Key deer habitat unusable on their home islands.⁷ Between 1968 and 2002, the core areas where Key deer fawn existed decreased seventy-five percent (75%) due to urbanization.⁸ Established in

³ See Warrick & Oerlemans, *supra* note 1, at 263 (explaining that global sea level has risen over the last 100 years, and it is highly likely that it will continue to rise in the very near future); see also Nemat Sadat, *Small Islands, Rising Seas*, U.N. CHRON., <https://www.un.org/en/chronicle/article/small-islands-rising-seas> (last visited May 8, 2022) (noting that poorer countries, who have contributed the least to global warming, are facing its effects).

⁴ Sumudu Anopama Atapattu, *Justice for Small Island Nations: Intersections of Equity, Human Rights, and Environmental Justice*, in CLIMATE JUSTICE: CASE STUDIES IN GLOBAL AND REGIONAL GOVERNANCE CHALLENGES 299, 300 (Randall S. Abate ed., 2016); see Sadat, *supra* note 3 (“The threat posed by rising sea levels has been the centrepiece of climate change negotiations, the main issue emphasized by Small Island Developing States, also known as the SIDS.”); see also KEY DEER SSA CORE TEAM, U.S. FISH & WILDLIFE SERV., INTERNAL DRAFT: SPECIES STATUS ASSESSMENT FOR THE KEY DEER (*ODOCOILEUS VIRGINIANUS CLAVIUM*) VERSION 3.3 21 (2021) (“Sea-level rise associated with global climate change is a serious concern for the Florida Keys and coastal areas around the world.”).

⁵ See *infra* Part II (discussing the Key deer’s path to extinction); see also Amartya K. Saha et al., *Sea Level Rise and South Florida Coastal Forests*, 107 CLIMATIC CHANGE 81, 82, 105 (2011) (arguing that sea level rise will increase the salinity of freshwater sources, negatively impacting both vegetation and species who depend on the vegetation and availability of freshwater).

⁶ See Roel R. Lopez, *Population Ecology of Florida Key Deer* 83 (Dec. 2001) (Ph.D. dissertation, Texas A&M University) (ProQuest) (noting that Key deer numbers were reduced to 25-50 animals in the late 1940’s due to intense hunting and habitat loss); see also U.S. Fish & Wildlife Serv., *Key Deer (*Odocoileus virginianus clavium*) 5-Year Review: Summary and Evaluation* 13, 19 (Aug. 2010), https://ecos.fws.gov/docs/tess/species_nonpublish/1586.pdf [hereinafter *Key Deer 5-Year Review*] (recognizing illegal hunting as a factor that has contributed to the decline of the Key deer population).

⁷ See *Key Deer 5-Year Review*, *supra* note 6, at 13 (discussing threats to the Key deer’s habitat, including thirty percent of developed areas being fenced off and “unavailable for use as habitat for deer.”).

⁸ See M. Nils Peterson et al., *Key Deer Fawn Response to Urbanization: Is Sustainable Development*

1957, the National Key Deer Refuge has helped protect the dwindling population from complete extinction.⁹ The Key deer's federal listing as an endangered species has provided a layer of protection; however, these efforts will be rendered useless if the tiny remainder of the Key deer's habitat is underwater by 2050.¹⁰

Despite the Endangered Species Act's ("ESA") many protections, the Act does not address how to protect endangered species from habitat loss due to climate change impacts.¹¹ The ESA's requirement for designation of critical habitat for endangered species has the potential to offer some protection from this threat if it is used properly.¹² The ESA's section on designation of critical habitat provides that the Secretary of the U.S. Fish and Wildlife Service ("USFWS") shall, "concurrently[,] with making a determination under paragraph (1) that a species is an endangered species or a threatened species, designate any habitat of such species which is then to be considered critical habitat."¹³ Critical habitat may include "specific areas outside the geographical area occupied by the species at the time it is listed . . . upon a determination by the Secretary that such areas are essential for the conservation of the species."¹⁴

This protection is essential to protect species like the Key deer who face the immediate threat of losing their homes due to climate change impacts. However, a recent Supreme Court decision¹⁵ and Trump-era rule defining "habitat"¹⁶ have severely limited application of this section in a way that is detrimental to the Florida Key deer as climate change continues its path of destruction. Unless this Federal rule is repealed, and the Supreme Court decision is strictly limited to its narrowest possible holding, the ESA's critical habitat designation section will be far too restricted to protect the Key deer from their impending demise.

Part II of this Article discusses the Key deer's uniquely vulnerable position and how sea level rise caused by climate change is destroying the Florida Key

Possible?, 32 WILDLIFE SOC'Y BULL. 493, 496 (2004) ("The decrease in fawn range-size since the early urban development study supports [the] hypothesis that higher deer densities would lead to smaller ranges.").

⁹ See U.S. Fish & Wildlife Serv., *Key Deer Odocoileus virginianus clavium*, S. FLA. MULTI-SPECIES RECOVERY PLAN 4-3, 4-9 (1999) [hereinafter Key Deer Recovery Plan] (explaining the National Key Deer Refuge's purpose of protecting and maintaining Key deer habitats); see also Mark A. Barrett & Peter Stiling, *Effects of Key Deer Herbivory on Forest Communities in the Lower Florida Keys*, 129 BIOLOGICAL CONSERVATION 100, 100 (2006) (explaining that habitat-loss and over-hunting led the U.S. Fish & Wildlife Service to establish the National Key Deer Refuge in 1957).

¹⁰ See generally UNION OF CONCERNED SCIENTISTS, *supra* note 2, at 1 (explaining how sea level rise threatens to damage the economy and life in the Florida Keys).

¹¹ See Endangered Species Act of 1973, 16 U.S.C. §§ 1531–1544 (2022) (recognizing various species of life that have been rendered extinct due to economic activity and development).

¹² See 16 U.S.C. § 1533(a)(3)(A) (2022) (authorizing for the habitat of an endangered or threatened species to be considered a critical habitat).

¹³ 16 U.S.C. § 1533(a)(3)(A)(i) (2022); see *infra* Part III (discussing how this ESA provision does not retroactively apply to Key deer).

¹⁴ 16 U.S.C. § 1532(5)(A)(ii) (2022).

¹⁵ See *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.*, 139 S. Ct. 361, 371 (2018).

¹⁶ See 50 C.F.R. § 424.02 (2022).

deer's habitat. Part III addresses the existing legal framework regarding critical habitat designations under the ESA, and how the term "critical habitat" was designated for species prior to the Trump-era federal rule and the *Weyerhaeuser Co.* holding. Part IV demonstrates how the pre-*Weyerhaeuser Co.* interpretation of Section Four of the ESA can be used to prescribe assisted migration to save species threatened by sea level rise. Furthermore, Part IV also examines how the pre-*Weyerhaeuser Co.* interpretation of Section Four was used to save the Western Snowy Plover from sea level rise, and how it was used to prescribe assisted migration for the Florida panther. Finally, Part V proposes that the *Weyerhaeuser Co.* holding must be limited and the Trump-era rule defining "habitat" must be repealed to protect the Key deer from extinction. Ideally, the Trump-era definition of "habitat" should not be replaced, but if it is replaced, a definition that considers both the goals of the ESA and the scientific definition of "habitat" is preferable.

II. THE KEY DEER'S PATH TO EXTINCTION

The Florida Key deer, *odocoileus virginianus clavium*, reproduces less than any other free-ranging white-tailed deer population in North America.¹⁷ They are endemic to the Florida Keys and are endangered under the ESA.¹⁸ Humans have been directly threatening the species for almost 100 years through urbanization and hunting that have left the species wholly dependent on two highly urbanized islands.¹⁹ Now the situation is only getting worse. As climate change causes sea level rise that is ravaging the low-lying coastal areas of the Florida Keys, the Key deer's habitat is being permanently destroyed.²⁰ Part II first outlines the Florida Key deer's uniquely vulnerable position as a species. It then highlights the dangers they face as one of the endangered species most imminently threatened by sea level rise.

A. THE FLORIDA KEY DEER'S VULNERABLE STATUS

The Florida Key deer is uniquely vulnerable as an endangered species whose habitat is already reduced to a fraction of what it once was.²¹ The species

¹⁷ Key Deer Recovery Plan, *supra* note 9, at 4-6.

¹⁸ KEY DEER SSA CORE TEAM, *supra* note 4, at 1.

¹⁹ See Lopez, *supra* note 6, at 1, 147; see also Key Deer Recovery Plan, *supra* note 9, at 4-8 ("Key deer were threatened by over-hunting until it was prohibited in the early 1950s. Since that time, other human-caused threats are placing pressures on the abundance and distribution of the Key deer, including habitat loss, vehicular traffic, habitat degradation, and illegal feeding."); see also KEY DEER SSA CORE TEAM, *supra* note 4, at 13 (explaining the current habitat of the Key deer and the impact of urbanization).

²⁰ See Saha et al., *supra* note 5, at 82 ("A 30 cm increase in sea level is expected to render coastal systems erosional, preceding the complete collapse with a breach of coastal marl ridges resulting from a 60 cm rise in sea level . . .").

²¹ See Key Deer Recovery Plan, *supra* note 9, at 4-8-4-9; see also Barrett & Stiling, *supra* note 9, at 100-01 (explaining that the Key deer have been relegated to existing primarily on only two of the twenty-six islands which comprise their historical range due to sea level rise and development).

was listed as endangered under the ESA on March 11, 1967,²² after hunting and habitat loss led to their near extinction in the 1940s and 50s.²³ Even with federal protections, a 1990 population viability assessment predicted the 250 animals present at the time had a seventy-four percent (74%) probability of going extinct within the next sixty-seven years.²⁴ Despite the Key deer's endangered status, serious threats to their existence persist to this day.

The Florida Key deer is the smallest subspecies of the white-tailed deer.²⁵ The principal factor affecting the distribution and movement of the Key deer is the availability of freshwater.²⁶ Pine rocklands and hardwood hammocks contain permanent freshwater sources, and they can now only be found on five of the twenty-six islands that make up the Florida Keys (Big Pine, Little Pine, Sugarloaf, No Name, and Cudjoe).²⁷ Additionally, the Key deer forage to meet nutritional requirements.²⁸ Many of their food sources are found in pine rocklands and are stimulated by fire.²⁹ As a result, the majority of the Key deer population is relegated to relying on Big Pine Key and No Name Key for sustenance and water.³⁰

The Key deer's habitat was primarily threatened by rapid urbanization and development for many years.³¹ Notably, “[b]y 2000, the footprint of homes, businesses, and roads removed approximately 232 [hectares] from usable Key deer habitat.”³² This urbanization and development continues to severely

²² Key Deer Recovery Plan, *supra* note 9, at 4-7; *see* Native Fish and Wildlife Endangered Species, 32 Fed. Reg. 4001-01 (Mar. 11, 1967) (naming the Key deer an endangered species).

²³ *See* Lopez, *supra* note 6, at 1, 15; *see also* Barrett & Stiling, *supra* note 9, at 100 (explaining that over-hunting and development leading to habitat-loss led to the establishment of the National Key Deer Refuge).

²⁴ Key Deer Recovery Plan, *supra* note 9, at 4-8.

²⁵ Lopez, *supra* note 6, at 1; KEY DEER SSA CORE TEAM, *supra* note 4, at 4.

²⁶ U.S. FISH & WILDLIFE SERV., KEY DEER ASSESSMENT GUIDE (2013); *see* KEY DEER SSA CORE TEAM, *supra* note 4, at 9 (“Freshwater availability is a critical limiting factor for Key deer presence and abundance . . .”).

²⁷ Key Deer Recovery Plan, *supra* note 9, at 4-4; *see* Barrett & Stiling, *supra* note 9, at 100-01 (stating that Key deer primarily reside on Big Pine Key and No Name Key as a result of the urbanization and over-hunting that led to their initial endangerment).

²⁸ Key Deer Recovery Plan, *supra* note 9, at 4-6 (“Key deer forage on more than 160 other species to meet nutritional requirements . . .”); *see* W.D. Klimstra & Allan L. Dooley, *Foods of the Key Deer*, 53 FLA. SCIENTIST 264, 264 (1990) (“Fifty-two plant species were identified as Key deer foods.”).

²⁹ Key Deer Recovery Plan, *supra* note 9, at 4-6.

³⁰ *See* Lopez, *supra* note 6, at 144 (noting that most of the freshwater is located on Big Pine and No Name Keys and that limited freshwater availability would cause a decline in the Key deer population); *see also* Klimstra & Dooley, *supra* note 28, at 265 (noting that Big Pine Key supports a majority of the Key deer population and also provides many different plant species).

³¹ *See* Key Deer 5-Year Review, *supra* note 6, at 19 (“Urbanization patterns have been correlated with changes in [Key] deer behavior, distribution, diet, habitat, mortality, and abundance.”).

³² Roel R. Lopez et al., *Habitat-Use Patterns of Florida Key Deer: Implications of Urban Development*, 68 J. WILDLIFE MGMT. 900, 905 (2004); *see* Klimstra & Dooley, *supra* note 28, at 272 (“[I]ncreased development of private properties restricts the amount and availability of quality native [Key deer] habitats.”).

threaten upland freshwater sources,³³ only compounding other imminent threats like sea level rise. For example, fencing creates habitat fragmentation that can prevent the Key deer from reaching water sources directly, causing them to have to cross major roads, which may lead to vehicle collision deaths.³⁴ Worse yet, uninterrupted Key deer habitat is in short supply because fencing covers thirty percent (30%) of developed areas on the Key deer's home islands.³⁵ As of 2020, there are only about 1,145 acres (463 hectares) of usable Key deer habitat left on Big Pine and No Name Keys.³⁶ While urbanization and fencing remain a major concern, those challenges pale in comparison to the imminent threat of climate change.

B. SEA LEVEL RISE WILL PUSH THE FLORIDA KEY DEER TO EXTINCTION

Climate change has created a host of new threats, including aggressive sea level rise, which will push the Key deer to extinction.³⁷ Global sea levels rose approximately seven inches in the Twentieth Century due to thermal expansion and melting land ice, with the rate now increasing.³⁸ Counties in South Florida have recommended that infrastructure projects with an expected life of more than fifty years account for nearly three feet of sea level rise by 2060, and nearly seven feet of sea level rise by 2100.³⁹ The dangers of sea level rise in the Florida Keys are particularly acute: “[w]ith a mere one foot of sea-level rise, four hospitals, sixty-five percent (65%) of the schools and seventy-one percent (71%) of the emergency shelters in the Florida Keys are vulnerable”⁴⁰

³³ See FLA. DEP'T OF ENV'T PROT.'S DIV. OF STATE LANDS, 2021 FLORIDA FOREVER FIVE-YEAR PLAN: FLORIDA KEYS ECOSYSTEM SUMMARY OF RECOMMENDATIONS AND STATUS AS OF DECEMBER 2020 2 (2020), https://floridadep.gov/sites/default/files/FLDEP_DSL_OES_FF_BOT_FloridaKeysEcosystem.pdf (“The unique hardwood hammocks of the Florida Keys, forests of West Indian plants that shelter several extremely rare animals, are being lost to the rapid development of these islands.”).

³⁴ See Key Deer Recovery Plan, *supra* note 9, at 4-8 (noting that vehicles are mainly responsible for Key deer deaths).

³⁵ See Key Deer 5-Year Review, *supra* note 6, at 13 (“30 percent of the developed areas on BPK and NNK [have] been completely fenced and unavailable for use as habitat for deer.”).

³⁶ See FLA. DEP'T OF ENV'T PROT.'S DIV. OF STATE LANDS, 2020 FLORIDA FOREVER FIVE-YEAR PLAN: SUMMARY OF RECOMMENDATIONS AND STATUS AS OF DECEMBER 2019 199 (2020), https://floridadep.gov/sites/default/files/2020_Annual_Report.pdf (concluding that 1,145 acres of undeveloped land remain on Big Pine and No Name Keys).

³⁷ See Keith W. Rizzardi, *Flee the Rising Sea? South Florida's Choice of Leadership or Litigation*, in CLIMATE JUSTICE: CASE STUDIES IN GLOBAL AND REGIONAL GOVERNANCE CHALLENGES, 173, 173 (Randall S. Abate ed., 2016) (stating that rising seas represent a potential existential crisis, particularly for south Florida); see also KEY DEER SSA CORE TEAM, *supra* note 4, at 49 (“With a projected increase of global surface temperature of 1.5°C by the end of the 21st century, sea levels are expected to continue rising.”).

³⁸ Key Deer 5-Year Review, *supra* note 6, at 21.

³⁹ Rizzardi, *supra* note 37, at 178.

⁴⁰ *Id.* at 174.

About eighty-six percent (86%) of the islands the Key deer occupy are less than three feet above sea level,⁴¹ which underscores how serious sea level rise is for the Key deer. The Center for Biological Diversity documented the dangers of sea level rise caused by climate change in a report, titled “How Rising Seas Threaten 233 Endangered Species” (“The Report”).⁴² The Report compiles data from the USFWS, the National Marine Fisheries Service, and scientific literature on the threats of sea level rise to different endangered species.⁴³ The Report concluded that the Key deer is one of the top five endangered species most threatened by sea level rise.⁴⁴ This report was published in 2013, and the situation has only worsened since that time.⁴⁵ With only 1,145 acres (463 hectares) of usable Key deer habitat left, and all of it being only less than three feet above a rapidly rising sea level,⁴⁶ not much stands between the Key deer and extinction.

III. EVOLUTION OF CRITICAL HABITAT DESIGNATION FRAMEWORK

The ESA demands protection of endangered and threatened species at all costs.⁴⁷ A crucial element of protecting endangered and threatened species is protecting their habitats. Accordingly, the ESA requires that upon listing a species as endangered or threatened, critical habitat is concurrently designated for that species.⁴⁸ This critical habitat designation requirement of the ESA can be a potent tool to help species adapt to climate change.

For the Key deer to have a chance of survival in the face of aggressive sea level rise, the ESA’s critical habitat designation protection must be employed in a specific way to protect them. However, the application of the ESA’s critical habitat designation requirement to the Key deer is different from how it is employed for other, more recently listed species. The reason for this disparity stems from the ESA’s requirement that upon listing a species, critical habitat is

⁴¹ CTR. FOR BIOLOGICAL DIVERSITY, DEADLY WATERS: HOW RISING SEAS THREATEN 233 ENDANGERED SPECIES 1 (Dec. 2013), https://www.biologicaldiversity.org/campaigns/sea-level-rise/pdfs/Sea_Level_Rise_Report_2013_web.pdf.

⁴² *Id.*

⁴³ *Id.*

⁴⁴ *See id.*

⁴⁵ *See* Greg Allen, *Trump Administration Opens Door To Dropping Florida’s Key Deer From Endangered List*, NPR (Aug. 29, 2019, 4:20 PM), <https://www.npr.org/2019/08/28/755025446/trump-administration-opens-door-to-dropping-floridas-key-deer-from-endangered-li> (stating that the total Key deer population in 2019 was around 600).

⁴⁶ *See* FLA. DEP’T OF ENV’T PROT.’S DIV. OF STATE LANDS, *supra* note 36, at 199 (concluding that 1,145 acres of undeveloped land remain on Big Pine and No Name Keys); *see also* CTR. FOR BIOLOGICAL DIVERSITY, *supra* note 41, at 1 (“About 86 percent of islands occupied by the Key deer are less than 3 feet above sea level.”).

⁴⁷ *See* Tennessee Valley Auth. v. Hill, 437 U.S. 153, 155 (1978) (“It is clear from the [ESA]’s legislative history that Congress intended to halt and reverse the trend toward species extinction—whatever the cost.”).

⁴⁸ *See* 16 U.S.C. § 1533(a)(3)(A)(i) (2022).

designated *concurrently* for that species.⁴⁹ Specifically, the 1978 amendments provide that this “concurrent” requirement shall not apply to species listed prior to 1978, for which a critical habitat *may* be established.⁵⁰

The Key deer was listed as endangered in 1967.⁵¹ A federal appellate court decision held that the new critical habitat designation requirement does not apply to species listed before the 1978 amendments because the decision not to designate critical habitat during that time was committed to agency discretion and is therefore not reviewable by the courts.⁵² This means that there is currently no available legal avenue to *compel* the USFWS to designate critical habitat for these earlier listed species. However, it does not mean that the USFWS is barred from designating critical habitat for them.⁵³ Presently, the Florida Key deer does not have critical habitat designated.⁵⁴ While the USFWS cannot be compelled to designate critical habitat for the Key deer, it can be asked (and convinced) to do so.⁵⁵

Part III first reviews the ESA’s critical habitat designation process for all endangered or threatened species. Next, it considers the role of species’ recovery plans in the process of designating critical habitat, and how the Florida Key deer’s recovery plan is structured. It then addresses a landmark Supreme Court case that interpreted the critical habitat designations section of the ESA. Finally, it concludes with a description of the Trump administration federal rule that shaped how the USFWS can use the critical habitat designation process to protect species.

A. SECTION FOUR OF THE ENDANGERED SPECIES ACT

When Congress enacted the ESA, it understood that the most critical component of protecting endangered or threatened species is protecting their habitats. A House Committee Report states:

Man can threaten the existence of species of plants and animals in any of a number of ways The most significant of those has

⁴⁹ See Endangered Species Act Amendments of 1973, Pub. L. No. 95-632, 92 Stat. 3751.

⁵⁰ See *id.*; see also *Conservancy of S.W. Fla. v. U.S. Fish & Wildlife Serv.*, 677 F.3d 1073, 1076 (11th Cir. 2012) (“[F]or species listed before the ESA required a concurrent critical-habitat designation, a different rule applies . . .”).

⁵¹ See Key Deer Recovery Plan, *supra* note 9 (listing the Key deer’s federal status as “Endangered (March 11, 1967)”; see also *Native Fish and Wildlife Endangered Species*, 32 Fed. Reg. 4001 (Mar. 11, 1967) (naming the Key deer an endangered species).

⁵² See *Conservancy of S.W. Fla.*, 677 F.3d at 1074.

⁵³ See 16 U.S.C. § 1533(b)(3)(D) (2022) (noting that interested persons may petition to revise a critical habitat designation).

⁵⁴ See Roger Di Silvestro, *What’s Killing the Key Deer?*, NAT’L WILDLIFE FED’N (Feb. 1, 1997), <https://www.nwf.org/Magazines/National-Wildlife/1997/Whats-Killing-the-Key-Deer> (noting that the USFWS has failed to designate critical habitat for the Key deer).

⁵⁵ See 16 U.S.C. § 1533(b)(3)(D) (2022) (codifying the right to petition to revise a critical habitat designation).

proven also to be the most difficult to control: the destruction of critical habitat [T]here are certain areas which are critical which can and should be set aside. It is the intent and purpose of this legislation to see that our ability to do so, at least within this country, is maintained.⁵⁶

As a result, the ESA demands that, upon listing of a species as federally threatened or endangered, the Secretary of the USFWS “shall . . . designate any habitat of such species which is then considered to be critical habitat”⁵⁷ The Act defines “critical habitat” as:

(i) the specific areas within the geographical area occupied by the species . . . on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species . . . upon a determination by the Secretary that such areas are essential for the conservation of the species.⁵⁸

The USFWS has taken the approach where it first determines the area occupied by the species by how frequently the species exists in, and uses, the area.⁵⁹ This is a fact-specific inquiry.⁶⁰ Additionally, the USFWS considers “[r]elevant factors for making this threshold occupancy determination [such as:] ‘how often the area is used, how the species uses the area, the necessity of the area for the species’ conservation, [and] species characteristics such as degree of mobility or migration[.]’”⁶¹ In designating occupied area, the USFWS must identify physical and biological features which are specifically essential to the species, or features that may require special management considerations or protections.⁶²

The ESA imposes a different standard for the consideration of unoccupied habitat as critical habitat for an endangered or threatened species. This unoccupied area must be determined by the USFWS to be essential for conservation of the species.⁶³ This determination does not require that the USFWS identify

⁵⁶ H.R. Rep. No. 93-412, at 5 (1973).

⁵⁷ 16 U.S.C. § 1533(a)(3)(A)(i) (2022).

⁵⁸ 16 U.S.C. §§ 1532(5)(A)(i)–(ii) (2022).

⁵⁹ See *Otay Mesa Prop., L.P. v. U.S. Dep’t of the Interior*, 344 F. Supp. 3d 355, 369 (D.D.C. 2018) (quoting *Ariz. Cattle Growers Ass’n v. Salazar*, 606 F.3d 1160, 1164 (9th Cir. 2010)).

⁶⁰ See *id.* (noting that the ‘occupancy’ question is a “highly contextual and fact-dependent inquiry”).

⁶¹ *Id.*

⁶² See Jaclyn Lopez, *Biodiversity on the Brink: The Role of “Assisted Migration” in Managing Endangered Species Threatened with Rising Seas*, 39 *Harv. Env’t L. Rev.* 157, 169 (2015) (quoting 16 U.S.C. § 1532(5)(A)) (discussing critical habitat designation).

⁶³ See 16 U.S.C. § 1532(5)(A)(ii) (2022) (codifying critical habitat designation requirements for unoccupied areas).

physical and biological features essential to the species, or features that may require special management considerations or protections.⁶⁴ The area need only be essential to the conservation of the species as a whole.⁶⁵ Using this definition, and this approach to designating occupied and unoccupied areas, the USFWS has designated 111,868,484.09 acres of critical habitat nationwide.⁶⁶

The process of designating critical habitat can be even further complicated and involve many considerations other than where the species occupies. For example, a relevant section of the U.S. Code reads as follows:

The Secretary shall designate critical habitat, and make revisions thereto . . . on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impact, of specifying any particular area as critical habitat. The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.⁶⁷

Additionally, the Secretary may revise a critical habitat designation from time to time.⁶⁸ As a result, the process of designating critical habitat, occupied or unoccupied, is a complicated, time consuming, expensive, and fact-specific process. Despite these challenges, protecting the habitats of species remains the most crucial element of shielding species from extinction.

B. THE ROLE OF THE RECOVERY PLAN

Section Four of the ESA contains a provision that governs the creation of species recovery plans.⁶⁹ This provision states “[t]he Secretary shall develop and implement [recovery plans] . . . for the conservation and survival of endangered species and threatened species listed pursuant to this section, unless he finds that such a plan will not promote the conservation of the species.”⁷⁰

⁶⁴ Lopez, *supra* note 62, at 170 (discussing critical habitat designation requirements).

⁶⁵ *Id.*

⁶⁶ See *USFWS Threatened & Endangered Species Active Critical Habitat Report*, Env’t Conservation Online Sys., <https://ecos.fws.gov/ecp/report/critical-habitat> (last visited May 8, 2022) (listing data for proposed and final critical habitat for threatened and endangered species).

⁶⁷ 16 U.S.C. § 1533(b)(2) (2022).

⁶⁸ 16 U.S.C. § 1533(a)(3)(A)(ii) (2022).

⁶⁹ See 16 U.S.C. § 1533(f)(1) (2022) (codifying the Secretary’s duty to develop and implement species recovery plans).

⁷⁰ *Id.*

These recovery plans outline site-specific management actions to promote the long-term survival of the species.⁷¹ Recovery plans can be revised and, when revised, the USFWS must release them for public comment.⁷² Though recovery plans are not legally binding,⁷³ they “identify priority conservation actions, steer recovery work, provide measurable recovery criteria, and inform management agencies, elected officials, and the public as to the status and conservation needs of imperiled species.”⁷⁴

When determining how to best assist a species recover through a critical habitat designation, the USFWS may consider what actions have been deemed necessary to revive a species in that species’ recovery plan. It is therefore vital that recovery plans account for different ways a species’ habitat may be threatened. For example, a recovery plan should account for climate change-related threats.⁷⁵ As of 2010, 124 of the 1,209 listed species had climate change indicated as a threat in their recovery plan.⁷⁶ Including climate change as a threat is important because where a recovery plan prescribes actions necessary to recover a species, it can include actions to take in response to climate change, such as assisted migration.⁷⁷

The last revised recovery plan for the Florida Key deer was published in 1999.⁷⁸ The recovery plan’s goal is to recover the Key deer to the point that the species can be reclassified from endangered to threatened.⁷⁹ In furtherance of this goal, the recovery plan lays out six criteria to be met in order to reclassify the species. Reclassification may occur when:

[(1)] further [habitat] loss, fragmentation, and degradation of suitable, occupied habitat in the Lower Keys has been prevented; [(2)] when native and non-native nuisance species have been reduced by 80 percent; [(3)] when all suitable, occupied habitat on priority acquisition lists for the Lower Keys is protected either through land acquisition or cooperative agreements; [(4)] when Key deer habitat is managed, restored, or rehabilitated on protected lands; [(5)] when stable populations of the Key deer are distributed throughout its

⁷¹ 16 U.S.C. § 1533(f)(1)(B)(i) (2022).

⁷² See 16 U.S.C. § 1533(f)(4) (2022) (“The Secretary shall, prior to final approval of a new or revised recovery plan, provide public notice and an opportunity for public review and comment on such plan.”).

⁷³ See *Friends of Blackwater v. Salazar*, 691 F.3d 428, 434 (D.C. Cir. 2012) (“A [recovery] plan is a statement of intention, not a contract.”).

⁷⁴ Anthony Povilitis & Kierán Suckling, *Addressing Climate Change Threats to Endangered Species in U.S. Recovery Plans*, 24 CONSERVATION BIOLOGY 372, 372 (2010).

⁷⁵ See *infra* Section IV.A.

⁷⁶ See *infra* Section IV.A.

⁷⁷ See *infra* Section IV.B (discussing the Florida Panther’s recovery plan and how it includes assisted migration as a necessary action to recover the species).

⁷⁸ See Key Deer Recovery Plan, *supra* note 9, at 4-3.

⁷⁹ See *id.* at 4-13.

historic range; and [(6)] when two, additional, stable populations have been established along the periphery of the historic range of the Key deer.⁸⁰

Remarkably, there is no mention of climate change in outlining recovery actions for the Key deer.⁸¹ The prevention of habitat loss, fragmentation, and degradation in the recovery plan is primarily in reference to slowing urbanization and human development of Key deer habitat.⁸² This recovery plan does not account for the fact that sea level rise will ultimately consume Key deer habitat, making it uninhabitable and unrestorable.⁸³

C. THE WEYERHAEUSER CO. CASE

The legal framework that guides critical habitat designation has been altered in recent years. With the landmark holding of *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.* and the Trump-era federal rule defining “habitat,” much of the previous critical habitat designation practices will change going forward.⁸⁴ In *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.*, the Supreme Court, for the first time, questioned the habitability requirements of critical habitat designations under the ESA.⁸⁵

This case was brought in response to the critical habitat designation for the endangered dusky gopher frog (“frog”).⁸⁶ The frog, *lithobates sevosus*, is “endemic to the Gulf Coastal Plain in Louisiana, Mississippi, and Southwestern Alabama[.]”⁸⁷ The species once lived in the longleaf pine forests of these

⁸⁰ *See id.*

⁸¹ *See id.* at 4-8 (noting that the recovery plan developed to address several threats to the Key deer does not include climate change despite its catastrophic impact on this species, especially if left unaddressed).

⁸² *See id.* at 4-7.

⁸³ *See id.* (highlighting the fact that the recovery plan is devoid of any reference to climate change despite its impact on the Key deer’s ability to survive); *see also* Saha et al., *supra* note 5 (positing that sea level rise will negatively impact coastal ecosystems even before inundation by changing the composition of available vegetation and the salinity of freshwater sources).

⁸⁴ *See* Thuy Le, “Habitat”: What’s in a Name (or Term)?, 33 TUL. ENV’T L. J. 141, 160 (2020) (stating the Supreme Court’s ruling in *Weyerhaeuser Co.* has erected a barrier to conservation and weakened the Endangered Species Act’s ability to protect species going forward); *see also* *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.*, 139 S. Ct. 361, 362 (2018).

⁸⁵ *See* Le, *supra* note 84, at 156 (explaining that the Supreme Court determined the meaning of “critical” in the landmark *Tennessee Valley Authority* case, and in *Weyerhaeuser Co.*, the Court deemed this definition insufficient as it does not cover the meaning of “habitat”); *see also* Jeffrey S. Knighton Jr., *Critical Decisions: The Challenge of Defining Critical Habitat Under the Endangered Species Act*, 9 L.S.U. J. ENERGY L. & RES. 563, 571–72 (2021) (noting that *Weyerhaeuser Co.* challenged the USFWS’ wide discretion in designating critical habitat under the ESA in a new way); *see also* *Weyerhaeuser Co.*, 139 S. Ct. at 362.

⁸⁶ *See* 16 U.S.C. § 1533(a)(1) (2022) (giving the Secretary the power to promulgate and “determine whether any species is an endangered species or a threatened species[.]”); *see also* *Weyerhaeuser Co.*, 139 S. Ct. at 362.

⁸⁷ DAVID M. GREEN ET AL., NORTH AMERICAN AMPHIBIANS: DISTRIBUTION & DIVERSITY 110 (2014) (explaining how Dusky Gopher Frogs are now only found in specific areas in Mississippi);

coastal areas; however, “more than [ninety-eight] (98)% of those forests have been removed to make way for urban development, agriculture, and timber plantations.”⁸⁸ Additionally, “[t]he timber plantations consist of fast-growing loblolly pines planted as close together as possible, resulting in a closed-canopy forest inhospitable to the frog.”⁸⁹

As of this writing, the frogs can primarily be found where their breeding populations are located in the DeSoto National Forest region of Mississippi.⁹⁰ Specifically, “[t]he adult frogs reside in underground retreats associated with the gopher tortoise or small mammal burrows, stump holes, and root mounds of fallen trees.”⁹¹ The frogs migrate to “temporary ponds to breed” during the winter season, and then they migrate back to their primary locations in longleaf-pine uplands.⁹² The species was listed as endangered in 2001,⁹³ and accordingly must be given a critical habitat designation.

The original critical habitat proposal only included areas where the species currently resided, but all the science-based comments indicated this would not be enough to help the species survive and recover.⁹⁴ The USFWS then included a site in St. Tammany Parish, Louisiana, which was identified as “Unit 1” in the final critical habitat designation.⁹⁵ Unit 1 had once been home to the frog, but a commercial timber plantation had replaced the longleaf pine forests, and no frogs had been spotted there in decades.⁹⁶ The USFWS, however, determined

see Knighton Jr., *supra* note 85, at 572 (stating that although dusky gopher frogs previously thrived throughout the longleaf pine forests of Mississippi, Alabama, and Louisiana, at the time of listing, they occupied only a single pond in Mississippi, and the population of dusky gopher frogs dwindled to about 100).

⁸⁸ *Weyerhaeuser Co.*, 139 S. Ct. at 365.

⁸⁹ *Id.* (illustrating the causes of the dusky gopher frogs’ population decline).

⁹⁰ *See* GREEN ET AL., *supra* note 87, at 110 (explaining that dusky gopher frogs can no longer be found in Louisiana and Alabama).

⁹¹ *Id.* (stating that dusky gopher frogs can be located in these areas during the daytime).

⁹² *See Saving the Dusky Gopher Frog*, CTR. FOR BIOLOGICAL DIVERSITY, https://www.biologicaldiversity.org/species/amphibians/Mississippi_gopher_frog/index.html (last visited May. 9, 2022) (explaining how dusky gopher frogs migrate for mating season).

⁹³ *See* U.S. FISH & WILDLIFE SERVICE, DUSKY GOPHER FROG (*RANA SEVOSA*) RECOVERY PLAN 1 (2015) (explaining how the USFWS listed the Mississippi gopher frog, a.k.a. the dusky gopher frog, extinct in 2001); *see also* 16 U.S.C. § 1533(a)(3)(A)(i) (2022) (stating that the Secretary must concurrently designate a habitat as a critical habitat for a species that is endangered); *see also* Endangered and Threatened Wildlife and Plants, 66 Fed. Reg. 54808, 54824 (proposed Oct. 30, 2001) (to be codified at 50 C.F.R. pt. 17) (proposing the dusky gopher frog as an endangered species).

⁹⁴ *See* Tom Oates, *Dusky Gopher Frog Reaches Supreme Court*, 16 FRONTIERS IN ECOLOGY & ENV’T 372, 377 (2018) (stating that when a species reaches a point where there is only one natural habitat, then unoccupied land must also be designated as a critical habitat for the endangered species).

⁹⁵ *See* *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.*, 139 S. Ct. 361, 362 (2018); *see also* Knighton Jr., *supra* note 85, at 572 (quoting *Weyerhaeuser Co.*, 139 S. Ct. at 366) (internal citation omitted) (“While the dusky gopher frog had not been seen in Unit 1 since 1965 when closed-canopy timber occupied the site, ‘the FWS found that the site retained five ephemeral ponds of remarkable quality, and determined that an open-canopy forest could be restored on the surrounding uplands with reasonable effort.’”).

⁹⁶ *Weyerhaeuser Co.*, 139 S. Ct. at 362 (“The [dusky gopher frog] had once lived in Unit 1, but the

that despite the absence of frogs occupying the area, Unit 1 was essential to the species because it contained rare, high-quality breeding ponds.⁹⁷ The USFWS then completed the cost-based analysis under 16 U.S.C. § 1532(5)(A)(i)-(ii), and determined that the benefit of designating Unit 1 as critical habitat for the dusky gopher frog outweighed the potential \$33.9 million that the land could be worth if developed.⁹⁸ Unit 1 is owned by the petitioner, Weyerhaeuser.⁹⁹

Weyerhaeuser sought to vacate this designation on the grounds that the dusky gopher frog could not survive in Unit 1 in its current state as a closed-canopy forest,¹⁰⁰ and because the methodology of the USFWS in making its designation did not adequately weigh the benefits against the costs of this designation.¹⁰¹ The lower court decision upheld the USFWS' critical habitat designation as including Unit 1, and the Fifth Circuit affirmed.¹⁰² The Fifth Circuit then refused rehearing en banc.¹⁰³ The Supreme Court granted review and certified two issues, one of which is essential to the future of critical habitat designations: "whether 'critical habitat' under the ESA must also be habitat" for the species.¹⁰⁴

The Court addressed this question by interpreting the use of the term "critical habitat" in the statute.¹⁰⁵ In utilizing a textualist approach,¹⁰⁶ the Court determined that "[s]tatutory language cannot be construed in a vacuum,"¹⁰⁷ so the Court looked to surrounding context.¹⁰⁸ Section 1533(a)(3)(A)(i) states that the Secretary must designate any *habitat* of the species that is considered a critical habitat. Therefore, the court concluded, that:

land had long been used as a commercial timber plantation, and no frogs had been spotted there for decades").

⁹⁷ See *id.* at 366 (stating that the three essential features for conservation are "ephemeral ponds; upland open-canopy forest containing the holes and burrows in which the frog could live; and open-canopy forest connecting the two.")

⁹⁸ See *id.* at 362.

⁹⁹ *Markle Interests, L.L.C., v. U.S. Fish & Wildlife Serv.*, 40 F. Supp. 3d 744, 752 (E.D. La. 2014).

¹⁰⁰ See *id.* (stating Weyerhaeuser Co. filed suit shortly after *Markle Interests, LLC*. Filed suit); see also Isabella Kendrick, *Critical Habitat Designations Under the Endangered Species Act in an Era of Climate Crisis*, 121 COLUM. L. REV. 81, 96 (2021) (discussing how Weyerhaeuser Co. argued that the land was not suitable because the "dusky gopher frog could not *currently* survive there.").

¹⁰¹ See *Markle Interests, L.L.C.*, 40 F. Supp. 3d at 765. This article will not address the adequacy of the cost-benefit analysis that the USFWS conducted in designating critical habitat for the dusky gopher frog.

¹⁰² *Markle Interests, L.L.C., v. U.S. Fish & Wildlife Serv.*, 827 F.3d 452, 458 (5th Cir. 2016); see Kendrick, *supra* note 100, at 96 (noting the Fifth Circuit's holding that "[t]here is no habitability requirement in the text of the ESA or the implementing regulations.") (quoting *Markle Interests, L.L.C.*, 827 F.3d at 458).

¹⁰³ *Markle Interests, L.L.C., v. U.S. Fish & Wildlife Serv.*, 848 F.3d 635, 636 (5th Cir. 2017).

¹⁰⁴ *Weyerhaeuser Co.*, 139 S. Ct. at 368 (quoting *Sturgeon v. Frost*, 136 S.Ct. 1061, 1070 (2016)).

¹⁰⁵ *Id.*

¹⁰⁶ Kendrick, *supra* note 100, at 97.

¹⁰⁷ *Weyerhaeuser Co.*, 139 S. Ct. at 368 (citing *Sturgeon*, 136 S. Ct. at 1070).

¹⁰⁸ *Id.*

Only the “habitat” of the endangered species is eligible for designation as critical habitat. Even if an area otherwise meets the statutory definition of unoccupied critical habitat because the Secretary finds the area essential for the conservation of the species, Section 4(a)(3)(A)(i) does not authorize the Secretary to designate the area as *critical* habitat unless it is also *habitat* for the species.¹⁰⁹

The Court then concluded that the Fifth Circuit erroneously determined that there is no habitability requirement in the text of the ESA, and therefore the Fifth Circuit had no occasion to interpret what “habitat” for a species constitutes.¹¹⁰ The Supreme Court vacated this portion of the Fifth Circuit’s opinion and remanded the case so the meaning of “habitat” in the context of a critical habitat designation could be considered in the first instance.¹¹¹

The answer to this question is essential because Petitioner Weyerhaeuser argued that critical habitat cannot include areas that would require modification in order to sustain a population of the endangered species.¹¹² The USFWS alternatively argued, that critical habitat can include areas where the species could not currently survive but may be able to in the future.¹¹³ It is undisputed that critical habitat can include areas where the species does not currently *live*,¹¹⁴ but the question concerning habitability of the area can only be answered by defining what “habitat” means in the context of the critical habitat designations section of the ESA. The lower courts have not arrived at an answer to this question because the USFWS withdrew and reconsidered the designation of Unit 1.¹¹⁵ As a result, there is no judicially determined definition of “habitat.”¹¹⁶

¹⁰⁹ *Id.*

¹¹⁰ *Id.* at 368.

¹¹¹ *See id.* at 369 (vacating and remanding the Fifth Circuit decision because the Court “had no occasion” to interpret “habitat” as it pertained to § 4(a)(3)(A)(i)); *see also* Le, *supra* note 84, at 156 (citing Tennessee Valley Auth. v. Hill, 437 U.S. 153, 184–84 (1978)) (stating that the Supreme Court had previously defined the “critical” component of “critical habitat,” however now, that definition is inadequate, and the Fifth Circuit must determine the meaning of “habitat” as it pertains to presently uninhabited areas).

¹¹² *See Weyerhaeuser Co.*, 139 S. Ct. at 369 (stating that the Service argues that the term habitat should also include areas that require modification).

¹¹³ *Id.* (stating Respondent’s argument that critical habitat can include areas where there is a future possibility for a species to exist).

¹¹⁴ *See Lopez, supra* note 62, at 174 (stating that concurrent designations of critical habitat include those areas currently occupied which the species might retreat to).

¹¹⁵ *See* Jason C. Rylander et al., *Defining Habitat to Promote Conservation Under the ESA*, 50 ENV’T L. REP. 10531, 10535 (2020) (stating that “[a]fter the *Weyerhaeuser Co.* decision, FWS agreed to withdraw and reconsider the designation of Unit 1[.]”); *see also* Le, *supra* note 84, at 160 (stating that on July 3, 2019, the parties entered into a consent decree, agreeing to remove the private land known as Unit 1 from consideration for critical habitat designation—leaving unbothered the other areas designated as critical habitat for the dusky gopher frog).

¹¹⁶ *See infra* Section V.B (discussing how the Court in *Weyerhaeuser Co.* left the “habitability” question unanswered); *see also Weyerhaeuser Co.*, 139 S. Ct. at 369 (discussing how the Supreme Court has previously defined “critical,” but now demands the term “habitat” be defined).

D. THE 2020 TRUMP FEDERAL RULE

In response to the *Weyerhaeuser Co.* decision, the Trump-administration-USFWS issued a proposed regulation defining the meaning of “habitat” in the context of the critical habitat designations portion of the ESA.¹¹⁷ The final regulation is codified and effective as of January 15, 2021.¹¹⁸

The Trump administration’s proposed regulation provided two possible definitions for “habitat.”¹¹⁹ The first possible definition of habitat stated, “[t]he physical places that individuals of a species depend upon to carry out one or more life processes. Habitat includes areas with existing attributes that have the capacity to support individuals of the species.”¹²⁰ The second possible definition for habitat stated, “[t]he physical places that individuals of a species use to carry out one or more life processes. Habitat includes areas where individuals of the species do not presently exist but have the capacity to support such individuals, only where the necessary attributes to support the species presently exist.”¹²¹ Ultimately, neither of these definitions were adopted.¹²²

The final rule states, “[f]or the purposes of designating critical habitat only, habitat is the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species.”¹²³ Additionally, the USFWS stated that this definition is intended to “exclude areas that do not currently or periodically contain the requisite resources and conditions” necessary for the species’ existence, “even if such areas could meet this requirement in the future after restoration activities or other changes occur.”¹²⁴

By prohibiting an unoccupied area from being designated as critical habitat if that area is not “habitat” for the species, *Weyerhaeuser Co.* left unresolved the question of whether “habitat” could include areas that have the potential to support the species following restoration efforts.¹²⁵ The Trump-era federal rule,

¹¹⁷ See Endangered and Threatened Wildlife Plants; Regulations for Listing Endangered and Threatened Species and Designating Critical Habitat, 85 Fed. Reg. 47,333-01, 47,334 (proposed Aug. 5, 2020) (to be codified at 50 C.F.R pt. 424) (detailing the joint effort of U.S. Fish and Wildlife Service and the National Marine Fisheries Service to define “habitat”).

¹¹⁸ See 50 C.F.R. § 424.02 (2022) (defining the term “habitat” under the official regulation).

¹¹⁹ See Regulations for Listing Endangered and Threatened Species and Designating Critical Habitat, 85 Fed. Reg. at 47,334 (suggesting an official definition for habitat while also requesting comments on an alternative definition).

¹²⁰ See *id.* at 47,337 (offering the officially proposed definition for “habitat”).

¹²¹ See *id.* at 47,334 (proposing an alternative definition for “habitat”).

¹²² See 50 C.F.R. § 424.02 (defining the term “habitat” under the official regulation).

¹²³ *Id.* (defining *habitat* as it pertains to the Final Rule).

¹²⁴ See Endangered and Threatened Wildlife Plants; Regulations for Listing Endangered and Threatened Species and Designating Critical Habitat, 85 Fed. Reg. at 81,411-01, 81,413 (excluding from the definition of “habitat” areas that could potentially meet the requirements to be designated a critical habitat).

¹²⁵ See Chris Wilson, *Weyerhaeuser v. U.S. Fish & Wildlife Service: Swirling Uncertainty Around the Definition of Habitat*, 47 *ECOLOGY L.Q.* 761, 765 (2020) (leaving open “the question of whether unoccupied areas that require modification to support a sustainable species population can be

and the USFWS' clarification, answered this question: if the area was not currently suitable for the species, then it could not be designated as critical habitat.¹²⁶

IV. THE PRE-WEYERHAEUSER, CO. INTERPRETATION OF THE CRITICAL HABITAT DESIGNATION SECTION COULD PROTECT THE KEY DEER

To protect the Key deer from extinction caused by habitat loss, it is essential to permit critical habitat to be designated outside the species' occupied geographical area.¹²⁷ The pre-*Weyerhaeuser Co.* interpretation of critical habitat (unmodified by the *Weyerhaeuser Co.* holding and the Trump-era federal rule) has the capacity to save the Florida Key deer; this is because it leaves room for interpretation regarding what can be considered habitat for a species whose currently occupied space is being threatened.¹²⁸ This flexibility potentially allows critical habitat to be designated in an unoccupied space that requires some restoration but is ultimately necessary to recover the species. The species could then be prescribed assisted migration.

Prior to *Weyerhaeuser Co.*, critical habitat designations had been made outside occupied geographical areas. Moreover, the Ninth Circuit ruled that the USFWS is not required to prove that the species currently uses every part of the area that gets designated as critical habitat.¹²⁹ Additionally, the USFWS stated that it designate(s) critical habitat in unoccupied spaces when a designation limited to the species' range would be inadequate to ensure the conservation of the species.¹³⁰ If the USFWS designated critical habitat for the Key deer outside their current occupied geographical location, the pre-*Weyerhaeuser Co.* interpretation of the critical habitat designations section would allow the Key deer to survive the imminent threat of sea level rise.

Part IV addresses two case studies to illustrate how pre-*Weyerhaeuser Co.* interpretations of the ESA enable the pre-*Weyerhaeuser Co.* critical habitat designation section to protect the Florida Key deer. The first case study exemplifies how consideration of climate change in designating critical habitat saved the

considered habitat.”).

¹²⁶ See 50 C.F.R. § 424.02 (explaining that to be considered a critical habitat, the habitat must currently contain the resources and conditions to support one or more life processes of a species).

¹²⁷ See 16 U.S.C. § 1532(5)(A)(i)–(ii) (2022) (prohibiting the Secretary from denying designation of critical habitat if doing so will result in the extinction of the species concerned).

¹²⁸ See *infra* Sections IV.A–B (discussing the Western Snowy Plover critical habitat designation and the Florida Panther recovery plan).

¹²⁹ See *Alaska Oil & Gas Ass'n v. Jewell*, 815 F.3d 544, 555–56 (9th Cir. 2016) (holding that “requiring proof of existing polar bear activity . . . impermissibly shift[s] the focus of the critical habitat designation away from the [primary constituent elements].”).

¹³⁰ See Endangered and Threatened Wildlife Plants; Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover, 77 Fed. Reg. 36,728, 36,745 (proposed June 19, 2012) (to be codified at 50 C.F.R. pt. 17) (revising the designation of critical habitat for the threatened Pacific Coast population of the western snowy plover).

Western Snowy Plover from extinction. The second case study addresses how assisted migration has been prescribed for species whose habitats are threatened by climate change, such as the Florida Panther.

A. THE WESTERN SNOWY PLOVER CASE STUDY

Since recovery plans dictate the efforts that should be taken to protect a species, it is essential that they address climate change. As the climate situation worsens, this is becoming more commonplace. Fifty-nine percent (59%) of recovery plans prepared between 2005 and 2008 addressed the dangers of climate change.¹³¹ However, addressing the dangers of climate change is only helpful if the pre-*Weyerhaeuser Co.* interpretation of critical habitat designations stands.

A valuable example of climate change considerations in a critical habitat designation under the pre-*Weyerhaeuser Co.* regime is the Western Snowy Plover (“WSP”). The USFWS has recognized that sea level rise caused by climate change “[is] having and will continue to have significant effects on the Pacific Coast WSP and its habitat over the next several decades.”¹³² Accordingly, the USFWS final rule designating critical habitat for the WSP discusses the imminent dangers that climate change and sea level rise pose to the species’ habitat and, therefore, the continued existence of the WSP.¹³³ As a direct result of climate change-caused sea level rise, the USFWS designated critical habitat outside the occupied geographical area for the WSP using the species’ recovery plan and considerations of the dangers of sea level rise.¹³⁴ The USFWS’ ability to do this for the WSP was dependent on a series of steps taken prior to critical habitat designation.

First, the USFWS used the WSP recovery plan’s goals to make a critical habitat designation that protects the species from climate change-caused sea level rise.¹³⁵ Appendix C of the WSP recovery plan recommends management actions that can be taken by land managers to benefit the conservation of the

¹³¹ See Lopez, *supra* note 62, at 167–68 (arguing that assisted immigration of species will be an essential tool that must be considered in saving the nation’s most imperiled species).

¹³² Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover, 77 Fed. Reg. at 36,729.

¹³³ See *id.* (considering the impact of ongoing and projected changes in climate on the Pacific Coast WSP habitat); see also U.S. Fish & Wildlife Serv., 5-Year Review Western Snowy Plover [Pacific Coast Population Distinct Population Segment] (*Charadrius nivosus nivosus*) 1, 7 (2019), https://www.sfbbo.org/uploads/1/1/6/7/116792187/2019_western_snowy_plover_5-year_review.pdf (listing the multiple threats that sea level rise poses to the species and its habitat).

¹³⁴ See U.S. Fish & Wildlife Serv., *supra* note 133, at 7–8 (noting that ongoing projected changes in sea level and climate are expected to affect coastal habitat suitability, among other things).

¹³⁵ See U.S. Fish & Wildlife Serv., Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*), i, 106 (2007) [hereinafter Western Snowy Plover Recovery Plan] <https://westernsnowyplover.org/pdfs/WSP%20Final%20RP%2010-1-07.pdf> (stating that the twenty-eight (28) areas along the coast of California, Oregon, and Washington were designated as a critical habitat to “highlight important habitat areas on which activities that require Federal actions need to be evaluated under section 7 of the [ESA].”).

WSP.¹³⁶ The USFWS determined that these management actions could involve recovery actions needed to respond to *changing conditions*.¹³⁷ Sea level rise, a changing condition, gravely threatens the existence of the WSP.¹³⁸ Thus, the WSP's recovery plan allowed the implementation of management actions to protect the WSP from sea level rise. Additionally, this changing condition provided a compelling reason to designate critical habitat outside the currently occupied geographical area of the species.¹³⁹

The USFWS designated areas that already contain the biological criteria for the WSP to thrive.¹⁴⁰ Additionally, all the designated areas are within the historical range of the species, even if they are currently unoccupied by them.¹⁴¹ The difference between the WSP and the Key deer is that the Key deer's historical range is endangered by sea level rise and is continually being developed by humans in a manner that prevents it from being a usable habitat in the long-term.¹⁴² Thus, the area that is to be designated as critical habitat for the Key deer cannot be barred from requiring some modifications to suit the Key deer's existence because much of the eligible real estate cannot support Key deer at this time.¹⁴³ This is where the current legal framework becomes problematic,

¹³⁶ See *id.* at 144 (explaining that “[t]hese management recommendations are intended to provide preliminary guidance but additional management needs likely will be identified through monitoring, research, and site-specific experience.”).

¹³⁷ See Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover, 77 Fed. Reg. at 36,748 (referring to the language of the Western Snowy Plover Recovery Plan).

¹³⁸ See *id.* at 36,734, 36,729 (stating that “sea-level rise would cause: (1) [i]nundation of low-lying areas by high tides; (2) flooding of coastal areas during major storm events, especially near river mouths; (3) acceleration of erosion of coastal bluffs; and (4) a shift in beach profiles, move the position of the mean high water line landward”); see also U.S. Fish & Wildlife Serv., *supra* note 133, at 7 (2019) (“[D]espite active vegetation and predator management, ongoing and projected changes in sea level and climate is expected affect coastal habitat suitability, nest survival, over-winter survivorship, and quality of nesting and roosting habitats.”).

¹³⁹ Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover, 77 Fed. Reg. at 36,736 (explaining that some designated critical habitats are labeled as such because at the time the species was listed, it was essential for the conservation of the species).

¹⁴⁰ *Id.* at 36,748 (stating that the areas including the biological criteria “will require some level of management to address the current and future threats to the physical and biological features essential to the conservation of the Pacific Coast WSP.”).

¹⁴¹ *Id.* at 36,744 (explaining that “[f]or both the occupied and unoccupied areas (at the time of listing), critical habitat designation identifies, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat).”).

¹⁴² See generally Lopez, *supra* note 6, at 15 (providing statistics to show the negative impact development has on these habitats leading to habitat loss, habitat fragmentation, and the threat of entanglement).

¹⁴³ UNION OF CONCERNED SCIENTISTS, *supra* note 2, at 2 (explaining that “saltwater intrusion caused by rising sea levels threatens vital aquifers and thus the Keys’ drinking water[,]” potentially contaminating the drinking supply for residents as well); see Key Deer Recovery Plan, *supra* note 9, at 4-8 (providing statistics to illustrate how Key deer are highly susceptible to natural events such as rising sea-levels); see also Barrett & Stiling, *supra* note 9, at 101 (explaining that though the Key deer can be found on five (5) of the twenty-six (26) islands which comprise their historical range, two islands, Big Pine Key and No Name Key, support the majority of the existing populations of

and it becomes clear that the pre-*Weyerhaeuser Co.* interpretation of the critical habitat designation section is needed to save the Florida Key deer.

B. THE FLORIDA PANTHER CASE STUDY

Explicitly prescribing assisted migration in a species' recovery plan is the most direct option available under the pre-*Weyerhaeuser Co.* interpretation of the critical habitat designations section, and it is the approach that would benefit the Key deer the most. Notably, this approach has already been applied to assist the Florida panther. This sub-section outlines assisted migration and uses the Florida panther as an example to illustrate how assisted migration can be prescribed to a species.

The concept of "assisted migration" is a policy that could be prescribed under the ESA to help (passively or actively) move species endangered by sea level rise to safer locations.¹⁴⁴ "Managed relocation" is a form of assisted migration that involves intentionally moving a species to a target location outside the species' historical range for the purpose of maintaining biological diversity and adapting to climate change.¹⁴⁵ Passive assisted migration protects species' corridors so they can seek new habitats on their own as sea levels rise.¹⁴⁶ Assisted migration, and particularly managed relocation, is a solution for protecting the Key deer. However, it is only possible under the pre-*Weyerhaeuser Co.* interpretation of the ESA.

More than two-thirds of pre-*Weyerhaeuser Co.* recovery plans recommend the use of translocation or captive breeding and release.¹⁴⁷ Further, by prescribing assisted migration in recovery plans, it assists in the recovery process of endangered species who are losing their homes to climate change, such as the Key deer.¹⁴⁸ Key deer translocation efforts have already yielded positive results in the past.¹⁴⁹ In 2000 and 2003, a soft release¹⁵⁰ translocation effort placed Key

Key deer).

¹⁴⁴ See Lopez, *supra* note 62, at 162, 165 (explaining that the ESA provides endangered species a safety net to avoid extinction and the path to recovery).

¹⁴⁵ *Id.* (defining "managed relocation" as a type of active assisted migration which is "the intentional act of moving species, populations, or genotypes (the *target*) to a location outside a target's known historical distribution for the purpose of maintaining biological diversity . . .") (internal quotations omitted).

¹⁴⁶ *Id.* at 162–63 (explaining that it will benefit species when they seek new habitats if existing corridors and reserves are protected).

¹⁴⁷ *Id.* at 168 (providing statistics to show that "[a]pproximately 60% of recovery plans call for the restoration or active management of habitat[]" and that some recovery plans expressly advocate for reintroduction of species because of its effect).

¹⁴⁸ See *infra* p. 130 and note 163.

¹⁴⁹ See Key Deer 5-Year Review, *supra* note 6, at 11 (stating the outcome of the Key deer translocation efforts was that the 3-year translocation program (2003 to 2005) moved 39 deer from the core of the Cudjoe and Sugarloaf Keys, and in 2006 35 deer had been established on the islands, and reproduction had occurred on both Keys). But see Israel D. Parker et al., *Evaluation of the Efficacy of Florida Key Deer Translocations*, 72 J. WILDLIFE MGMT. 1070 (2008) (showing that previous recovery attempts consisting of hard release translocations of Key deer were met with little success).

¹⁵⁰ See Parker et al., *supra* note 149, at 1070 ("soft release" means the deer were provided assistance

deer on Sugarloaf and Little Pine Key, respectively.¹⁵¹ As of 2006, thirty-five Key deer had been established and had reproduced on both islands.¹⁵² The success of this translocation effort shows assisted migration is a viable option, and thus assisted migration is the best solution for saving the Florida Key deer.

The Florida panther is an example for how assisted migration can save species threatened by climate change. Like the Key deer, the Florida panther was listed as an endangered species in 1967 by the federal government.¹⁵³ The Florida panther's primary threat is habitat loss due to urbanization and land-use practices:¹⁵⁴ "potential panther habitat throughout the Southeast [is] affected by urbanization, residential development, road construction, conversion to agriculture, mining and mineral exploration, and lack of land use planning that recognizes panther needs."¹⁵⁵ Additionally, much of the panther's habitat is located only a few feet above sea level, and sea level rise will soon be an imminent threat, too.¹⁵⁶

The Florida panther's historical range spanned from Louisiana and Arkansas east to South Carolina and southward through Florida.¹⁵⁷ Like the Key deer, the Florida panther's population has been reduced to a fraction of its historical range (less than five percent (5%)) located in south Florida.¹⁵⁸ Worse yet, the current panther population is not considered viable.¹⁵⁹ The Florida panther

and the opportunity to acclimate prior to their release into the wild).

¹⁵¹ See *id.* ("Some purported benefits of soft releases include increased site fidelity for a variable length of time . . . [.]").

¹⁵² See Key Deer 5-Year Review, *supra* note 6, at 11 (explaining the trends in spatial distribution of deer and the results).

¹⁵³ See Conservancy of S.W. Fla. V. U.S. Fish & Wildlife Serv., 677 F.3d 1073, 1076 (11th Cir. 2012). The Florida panther's circumstances are comparable to the Key deer in that nobody can compel the USFWS to designate critical habitat for the species because they were federally listed prior to 1978, which means the ESA permits (but does not require) a critical habitat designation be made for the panther.

¹⁵⁴ See Lopez, *supra* note 62, at 179 (providing statistics on the fatal impact of habitat loss on panthers).

¹⁵⁵ U.S. Fish & Wildlife Serv., Florida Panther Recovery Plan i, ix (Nov. 1, 2008) [hereinafter Florida Panther Recovery Plan] (on file with the St. Thomas Law Review).

¹⁵⁶ See Lopez, *supra* note 62, at 180 ("Ten percent of current panther habitat would be inundated under conservative estimates of just under two feet of sea-level rise by 2100, and 33% would be lost with six feet of sea-level rise.").

¹⁵⁷ See Florida Panther Recovery Plan, *supra* note 155, at 35 (explaining that the panther has wide-ranging movement throughout America but the breeding portion of the panther population occurs only in south Florida); see also Supplemental Petition To Designate Critical Habitat for the Endangered Florida Panther from the Sierra Club to the Secretary of the United States Department of the Interior and the Director of the United States Fish and Wildlife Service (Nov. 19, 2009), at 5 [hereinafter Sierra Club Supplemental Petition] (on file with the U.S. Fish & Wildlife Service) (explaining that the Florida panther has been listed as an endangered species since 1967).

¹⁵⁸ See Florida Panther Recovery Plan, *supra* note 155, at 93 (explaining that a solution to recover the panther population is reintroduction in other parts of its historic range); see also Sierra Club Supplemental Petition, *supra* note 157, at 6 (stating the Florida Panther has been eradicated from almost all of its original habitat range).

¹⁵⁹ See Florida Panther Recovery Plan, *supra* note 155, at 93 (noting that "[a] viable population, for purposes of Florida panther recovery, has been defined as [] [a population] in which there is a 95%

requires vast amounts of room to disperse due to the nature of their lifestyle of hunting, breeding, and raising offspring to do the same.¹⁶⁰ Long-term persistence of a viable adult Florida panther population could require anywhere between 156,251 and 234,376 square miles of habitat.¹⁶¹ It is necessary that viable populations of the Florida panther are established and reintroduced through actions like assisted migration and translocation, especially considering that this species' historical range has been reduced dramatically and they require a spacious habitat to sustain a viable population.¹⁶²

The Florida panther's recovery plan explicitly states the need for a reintroduction program: "range expansion and reintroduction of additional populations are recognized as essential for recovery."¹⁶³ This will likely be done using assisted migration. The nine potential reintroduction sites that have been identified include locations in Arkansas Louisiana, Mississippi, Alabama, Georgia, and more.¹⁶⁴ These locations are outside the species' currently occupied geographical location (in south Florida), and the species would need to be assisted in relocating there.

Reintroduction studies have shown that establishment of a viable population in unoccupied habitat is feasible.¹⁶⁵ The explicit prescription of assisted migration in the Florida panther's recovery plan could provide a foundation for designating critical habitat outside the currently occupied areas (to one of the nine possible reintroduction sites) and ordering assisted migration to that location. Like the Florida panther, the explicit prescription for reintroduction as a necessary component in the Key deer's recovery plan would be invaluable in prescribing assisted migration to save the species from sea level rise. This would be possible under the pre-*Weyerhaeuser Co.* critical habitat designation section of the ESA.

probability of persistence for 100 years.").

¹⁶⁰ See Florida Panther Recovery Plan, *supra* note 155, at 26.

¹⁶¹ See Florida Panther Recovery Plan, *supra* note 155, at 26; see Sierra Club Supplemental Petition, *supra* note 157, at 13 (describing how even without climate change, habitat loss, fragmentation, degradation, and related human disturbance is currently a grave threat to the Florida Panther's survival with habitat destruction doubling in speed in the last decade).

¹⁶² See Florida Panther Recovery Plan, *supra* note 155, at 93; see also Sierra Club Supplemental Petition, *supra* note 157, at 93 (designating critical habitat which allows Panther migration away from sea level rise is essential, but not enough, and critical habitat must be established outside of south Florida where climate change will become less of an *immediate* threat).

¹⁶³ See Florida Panther Recovery Plan, *supra* note 155, at ix.

¹⁶⁴ See *id.* at 55–56.

¹⁶⁵ See Lopez, *supra* note 62, at 181 (noting that in 1993 the USFWS conducted a study where they released 19 mountain lions, some wild-caught and some captive raised, into unoccupied areas of their historic range, and showed that it is possible to establish populations of these animals in this manner).

V. ASSISTED MIGRATION CAN SAVE THE FLORIDA KEY DEER IF THE TRUMP RULE IS REPEALED

The critical habitat designation section of the ESA must return to its pre-*Weyerhaeuser Co.* condition, unmodified by the *Weyerhaeuser Co.* holding and the Trump-era rule. Sea level rise will destroy what is left of the Key deer's habitat, and the post-*Weyerhaeuser Co.* and Trump-era federal rule definition of habitat precludes saving the Key deer using assisted migration.

Repealing the Trump administration's federal rule defining "habitat" is a top priority because it will leave the *Weyerhaeuser Co.* holding to stand alone.¹⁶⁶ This will allow courts to limit *Weyerhaeuser Co.* to its narrowest holding, rendering its holding nearly meaningless.¹⁶⁷ Once the narrow reading of the *Weyerhaeuser Co.* holding becomes the predominant interpretation, the USFWS can return to the pre-*Weyerhaeuser Co.* interpretation of the critical habitat designation section and use it to protect endangered species, like the Key deer, as climate change becomes the primary threat to habitats globally.

To demonstrate the importance of repealing the Trump-era rule, Part V first discusses how assisted migration could save the Florida Key deer by using the pre-*Weyerhaeuser Co.* interpretation of the ESA in the same way it was used for the WSP and the Florida panther. Next, it highlights how without the Trump-era federal rule, the holding in *Weyerhaeuser Co.* is innocuous because it ultimately left the habitability question unanswered. It then underscores how important it is to repeal the Trump-era federal rule. It concludes by proposing that the best approach is to leave "habitat" as an adaptable concept by repealing the Trump administration's definition of habitat, and not replacing it. However, as an argument in the alternative, it proposes a science-based approach that considers the goals of the ESA in a way that could save the Florida Key deer from extinction.

A. HOW ASSISTED MIGRATION COULD SAVE THE FLORIDA KEY DEER

As demonstrated above, assisted migration is essential to save the Florida Key deer, and it is possible under the pre-*Weyerhaeuser Co.* and Trump-era federal rule interpretation of the critical habitat designation section. To accomplish this, the Florida Key deer's recovery plan must be updated from its 1999 version in one of two ways. The first option is for the recovery plan to include sea level rise as an imminent threat to the species. Simply doing this is enough to consider sea level rise when deciding to designate critical habitat outside of the Key deer's currently occupied geographical location (evidenced by the WSP

¹⁶⁶ See Bobby Magill, *Interior to Leave 'Habitat' Undefined for Endangered Species*, BLOOMBERG L. (June 4, 2021), <https://news.bloomberglaw.com/environment-and-energy/interior-to-leave-habitat-undefined-for-endangered-species> (noting that the Biden Administration has decided to repeal the Trump federal rule defining "habitat" and leave the term undefined as it relates to critical habitat designations for endangered species).

¹⁶⁷ See *infra* Section V.A.

critical habitat designation). This option allows the USFWS to determine that sea level rise will destroy the Key deer's habitat, designate critical habitat outside of their occupied area, and prescribe assisted migration in the final federal rule.

The second, and most effective approach, would be to include sea level rise as an imminent threat to the species, *and* explicitly state in the recovery plan that assisted migration is essential to recovery of the species (like the Panther's recovery plan). The recovery plan could then be used to designate critical habitat for the Key deer outside of its occupied area, and in a location where the species could be translocated through assisted migration.

Both of these scenarios are possible under the pre-*Weyerhaeuser Co.* interpretation of the critical habitat designation section of the ESA, as shown by the critical habitat designation for the WSP and the Florida panther's recovery plan prescribing assisted migration outright. Either option would save the Florida Key deer.¹⁶⁸

B. LIMITING THE *WEYERHAEUSER CO.* HOLDING

Weyerhaeuser Co. read a habitability requirement into the critical habitat designations section of the ESA.¹⁶⁹ However, a "habitability" requirement is useless without a definition of "habitat," and there is no judicially determined definition of what "habitat" means in this context.¹⁷⁰ The Trump-era federal rule is responsible for implementing a restrictive definition of "habitat" and making the *Weyerhaeuser Co.* holding much more dangerous than it would be on its own. Therefore, in order to save the Key deer from extinction using the critical habitat designation portion of the ESA to prescribe assisted migration, the *Weyerhaeuser Co.* holding must be left to stand alone by repealing the Trump-era federal rule.

¹⁶⁸ See *Press Release: Florida Group Proposes State Constitutional Amendment to Establish Legal Rights of Manatees, the Florida Panther, and Other Iconic Wildlife* (June 9, 2021), <https://www.centerforenvironmentalrights.org/news/press-release-florida-group-proposes-state-constitutional-amendment-to-establish-legal-rights-of-manatees-the-florida-panther-and-other-iconic-wildlife> (as of this writing, Florida residents have proposed a state constitutional amendment that would establish legal rights for Florida's endangered species, including the Florida Key Deer. This could allow individuals to bring suit to compel USFWS to designate critical habitat for the Key deer outside of their occupied area).

¹⁶⁹ See Kendrick, *supra* note 100, at 96-97 (stating that the Supreme Court vacated and remanded the Fifth Circuit's holding that there is no habitability requirement in the critical habitat designations section of the Endangered Species Act).

¹⁷⁰ See *infra* Section V.B.i (discussing how the USFWS withdrew consideration of Unit 1 when the Supreme Court remanded *Weyerhaeuser Co.*, and how the lower courts never considered the definition of "habitat" in the first instance).

i. *Weyerhaeuser Co.* Left the “Habitability” Question Unanswered

The Fifth Circuit’s vacated opinion granted summary judgment to the USFWS.¹⁷¹ The Fifth Circuit’s reasoning was based on the (apparently) erroneous conclusion that “critical habitat” in the context of the ESA had no habitability requirement.¹⁷² This conclusion led to the Fifth Circuit’s failure to consider what “habitat” for a species includes in the context of a critical habitat designation under the ESA. Accordingly, the language of the *Weyerhaeuser Co.* holding in part states: “Section 4(a)(3)(A)(i) [of the ESA] does not authorize the Secretary to designate the area as *critical* habitat unless it is also *habitat* for the species.”¹⁷³ Thus, the question of how to define “habitat” for a species in the context of a critical habitat designation was remanded to the Fifth Circuit to be determined in the first instance.¹⁷⁴

Once the Fifth Circuit decision was vacated, the issue was remanded to the Eastern District Court of Louisiana for further proceedings.¹⁷⁵ The District Court has not heard and will not address the issue because the USFWS agreed to withdraw and reconsider the designation of Unit 1, and the parties agreed to withdraw the case.¹⁷⁶ As a result, there is no judicial interpretation of how “habitat” should be defined in this context, and a habitability requirement carries little weight because it cannot be enforced without a definition of “habitat.”

To protect the Key deer using the critical habitat section of the ESA, it is essential that *Weyerhaeuser Co.*’s habitability requirement continues to be meaningless. Without the Trump administration’s definition of “habitat,” this is possible. Absent a definition of habitat, a vague habitability requirement allows critical habitat to be designated in a place the USFWS considers “habitable” at the time it makes the designation.¹⁷⁷ What is “habitable” would be committed to the USFWS’ discretion, and the agency could use species’ needs outlined in recovery plans to make that determination. This could allow designation of a location that may require modification to become habitable. Significantly, it also allows critical habitat to be designated outside of the species’ historical range. This holding alone does not bar Unit 1 from being designated critical habitat for the frog. Further, it does not prevent the Key deer from being

¹⁷¹ See *Markle Interests, LLC., et al. v. U.S. Fish & Wildlife Serv.*, 919 F.3d 963, 964 (5th Cir. 2019).

¹⁷² *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.*, 139 S. Ct. 361, 362 (2018).

¹⁷³ *Id.* at 368.

¹⁷⁴ *Id.* at 369.

¹⁷⁵ *Markle Interests, LLC., et al.*, 919 F.3d at 964.

¹⁷⁶ Rylander, *supra* note 115, at 10535; see also Kendrick, *supra* note 100, at 83 (citing Consent Decree at 3, *Markle Interests, LLC v. U.S. Fish & Wildlife Serv.*, No. 13-cv-234 (E.D. La. July 3, 2019)) (stating that the USFWS settled with the landowners and entered into a consent decree agreeing to remove Unit 1 from consideration as critical habitat for the dusky gopher frog).

¹⁷⁷ 16 U.S.C. § 1533(a)(3)(A)(i) (2018) (outlining that whatever *habitat*—undefined—is essential to the species’ conservation, even habitat outside the currently occupied range, may be designated as critical habitat for the species).

given critical habitat in a new, unoccupied location that requires modifications to become habitable, where the Key deer could be translocated.

ii. Repealing the Trump-Era Federal Rule Neutralizes *Weyerhaeuser Co.*

The *Weyerhaeuser Co.* holding only has the power to limit critical habitat designations in a dangerous way so long as the Trump-era federal rule stands. Defining “habitat” for purposes of critical habitat designations in a restrictive manner will have severe consequences for the Florida Key deer, and any other species like it facing climate change threats to their habitat. Consequently, the Trump-era federal rule must be repealed.

The final rule states, “for the purposes of designating critical habitat only, habitat is the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species.”¹⁷⁸ This definition of “habitat” removes Unit 1 from being considered critical habitat for the frog. The frog did once inhabit Unit 1, and the area contains breeding ponds essential to the species’ existence. However, it does not “currently or periodically contain the resources and conditions necessary to support one or more life processes of a species.”¹⁷⁹

The rule’s detrimental effect is further highlighted by the fact that only five of the twenty-six islands that make up the Florida Keys contain freshwater supply crucial to the Florida Key deer’s existence.¹⁸⁰ This freshwater is rapidly diminishing as sea levels rise and development continues.¹⁸¹ The Florida Key deer has been relegated to existing on only two of those five islands (Big Pine Key and No Name Key) because of urban development and other human-related factors.¹⁸² Additionally, about eighty-six percent (86%) of the islands occupied by the Key deer are less than three feet above sea level.¹⁸³ An “abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species”¹⁸⁴ will not be possible on the Florida Keys due to the rapidly rising sea level.

The Florida Key deer has no critical habitat currently designated.¹⁸⁵ Without the Trump-era federal rule, there is substantial potential to designate critical

¹⁷⁸ 50 C.F.R. § 424.02 (2022).

¹⁷⁹ *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.*, 139 S. Ct. 361, 362 (2018).

¹⁸⁰ See Key Deer Recovery Plan, *supra* note 9.

¹⁸¹ Saha et al., *supra* note 5, at 105 (explaining that sea level rise will lead to a significant decrease in freshwater availability, which will permanently and negatively impact both coastal vegetation which requires freshwater, as well as species who depend on this freshwater for survival, which could potentially drive them both into extinction).

¹⁸² Lopez, *supra* note 6, at 1.

¹⁸³ See CTR. FOR BIOLOGICAL DIVERSITY, *supra* note 41, at 4.

¹⁸⁴ 50 C.F.R. § 424.02 (2022).

¹⁸⁵ See *supra* Part III (discussing why the Key deer does not have critical habitat designated); see also *Conservancy of S.W. Fla. v. U.S. Fish & Wildlife Serv.*, 677 F.3d 1073, 1075 (11th Cir. 2012) (holding that the FWS is not mandated to designate critical habitat for species listed before the 1978

habitat for the Key deer in a location outside the Florida Keys that may require restoration to become “habitable.” Additionally, the need for restoration would not be barred, and once a habitable environment is created for the Key deer the USFWS could conduct assisted migration.

C. LEAVING “HABITAT” AS AN ADAPTABLE CONCEPT

In general, but especially in the face of the *Weyerhaeuser Co.* decision, the definition of “habitat” has serious implications for the ability to designate critical habitats in the future.¹⁸⁶ It is important that the USFWS allows the meaning of “habitat” to evolve as accommodations for changing conditions are incorporated into species recovery plans.¹⁸⁷ Climate change will do many unpredictable things to this planet,¹⁸⁸ and the means by which the government is authorized to save species from these dangers needs to be permitted to change over time.

Any limitation on what kind of habitat can be designated as critical habitat is not preferable because habitat is a fluid concept. The legal profession often looks to the scientific community for guidance on how to define ecological concepts, such as what constitutes habitat,¹⁸⁹ and even the scientific community uses the term “habitat” in a fluid manner.¹⁹⁰ The scientific community has dubbed the meaning of “habitat” a “Panchreston problem,” which is “an explanation or theory used in such a variety of ways as to become meaningless.”¹⁹¹

For example, one scientific view defines habitat to be largely species specific: “habitat ‘relates the presence of a species, population, or individual (animal or plant) to an area’s physical and biological characteristics[,] Habitat implies more than vegetation or vegetation structure[,] [and] is the sum of the

amendments, but the FWS is permitted to list critical habitat for these species still).

¹⁸⁶ See Rylander et al., *supra* note 115, at 10531–32 (describing how before the *Weyerhaeuser Co.* decision, courts had not defined what “habitat” means “as a legal or scientific matter[.]” and how the Court remained ambiguous in defining “what habitat is or how much deference FWS should get on what is both a biological and policy question.”); see also Kendrick, *supra* note 100 (“[U]ncertainty over the meaning of ‘habitat’ in the ESA after *Weyerhaeuser Co.* and the recent regulations promulgated by the Trump Administration have crippled the Services’ ability to designate critical habitat.”), at 97; see also Le, *supra* note 84, at 159–60 (“In requiring an interpretation for the definition of ‘habitat,’ the Court arguably made it more difficult for agencies to designate critical habitats[.]”); see also Wilson, *supra* note 125, at 765 (“To ensure the continued success of the ESA, habitat must be defined broadly to allow critical habitat designations for areas that require reasonable modification to support a species.”).

¹⁸⁷ See Knighton Jr., *supra* note 85, at 587 (stating that a species’ environmental needs often change throughout their lifecycle, and with conserving being the goal of the ESA, Congress intended the meaning of “critical habitat” to be flexible enough to support species recovery as those needs evolve).

¹⁸⁸ See Warrick & Oerlemans, *supra* note 1, at 276 (stating that total sea level rise estimates for the coming years are variable, and thus there are multiple scenarios available where sea level rises anywhere from 8 centimeters and 29 centimeters).

¹⁸⁹ Telephone Interview with Johanna Hamburger, Director and Senior Staff Attorney, Terrestrial Wildlife Program, Animal Welfare Institute (Feb. 24, 2021).

¹⁹⁰ See Rylander et al., *supra* note 115, at 10535.

¹⁹¹ *Id.*

specific resources that are needed by organisms.”¹⁹² Another scientific view defines “habitat” as “the physical and biological setting in which organisms live and in which the other components of the environment are encountered.”¹⁹³ These varying definitions prove not only how complex it can be to define “habitat,” but also how establishing an explicit definition may be beneficial in one context and detrimental in another. Rather, it is most beneficial to all species facing endangerment from climate change if “habitat” remains an adaptable concept with no fixed definition.

Leaving “habitat” undefined is also practical. The USFWS has designated 111,868,484.09 acres of critical habitat nationwide.¹⁹⁴ This provides a wealth of precedent for defining “habitat” as it applies to certain listed species. Additionally, the ESA’s critical habitat regulations include an intelligible principle for making critical habitat designations:

The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific and commercial data available, that the failure to designate such area as critical habitat will result in the extinction of the species concerned.¹⁹⁵

This intelligible principle, the input from the scientific community, and the extent of precedent available, offers a judge the tools necessary to determine if a critical habitat designation is proper. There is enough guidance for judges to determine what is considered “habitat” on a case-by-case basis without a restrictive definition of “habitat” in this context.

As long as the concept of “habitat” remains malleable, then as climate change causes sea level rise, what is considered “habitat” for a species can be determined as needs evolve (as it was pre-*Weyerhaeuser Co.*). When sea level rise consumes all of the Key deer’s historical range, and they need to be prescribed assisted migration to an area that requires some modification, that is possible as long as “habitat” is not limited to any one kind of area with any specific requirements.

However, should a definition be implemented, some definitions are preferable to the Trump-era definition. Solely using science as a guiding principle seems appealing;¹⁹⁶ “Congress [even] require[s] FWS and NMFS to utilize the

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ See Environmental Conservation Online System, U.S. FISH & WILDLIFE SERV., <https://ecos.fws.gov/ecp/report/critical-habitat> (last visited May 8, 2022).

¹⁹⁵ 16 U.S.C. § 1533(b)(2) (2018).

¹⁹⁶ See Kendrick, *supra* note 100, at 108–109 (proposing that the definition of “habitat” in the context of the ESA should be based almost exclusively on scientific principles).

‘best scientific data available’ in designating critical habitat,” which means that principles of ecology thus must inform the decision.¹⁹⁷ However, because this definition is applicable to a very specific context (the protection of endangered species), the goals of the ESA should also be applied in guiding the formation of a definition for “habitat.” This concept of using the goals of the ESA as a guide, proposed by Jason Rylander and his colleagues, argues that the definition of “habitat” should aid in “halt[ing] and revers[ing] the trend towards species extinction—whatever the cost.”¹⁹⁸ According to the Supreme Court, this is the plain intent of Congress in enacting the ESA.¹⁹⁹ Therefore, if a definition is deemed necessary, this definition of “habitat” that considers principles of ecology and the goals of the ESA should be endorsed.

Accordingly, should the term be given a definition, the definition should be the following: “Habitat is the area or type of site where a species naturally occurs or that it depends on directly or indirectly to carry out its life processes, or where a species formerly occurred or has the potential to occur and carry out its life processes in the foreseeable future.”²⁰⁰ This definition has many valuable features. For one, it is consistent with scientific literature and respects the ESA’s definition of “critical habitat.”²⁰¹ Further, it allows geographical areas of interest to be mapped more holistically rather than based solely on their biological criteria, and it recognizes that areas that indirectly contribute to a species’ life processes are part of habitat.²⁰² These features encourage the ideology that a species’ habitat should be based on the needs of the species, and not on the fixed quality of the environment. Most significantly, this definition contains a temporal component.

A temporal component is what advances the goals of the ESA to conserve threatened and endangered species.²⁰³ “Critical habitat in the ESA must be considered at least to the horizon of the foreseeable future because these areas are “essential to the conservation of the species”—that is, to recovery.”²⁰⁴ This

¹⁹⁷ Rylander et al., *supra* note 115, at 10536.

¹⁹⁸ *Id.* (citing Congress’s purpose of the ESA put forth in *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 154 (1978)).

¹⁹⁹ *See Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978) (holding that the intent of Congress in enacting the Endangered Species Act was to make protecting endangered and threatened species the highest priority).

²⁰⁰ Rylander et al., *supra* note 115, at 10536.

²⁰¹ *See Wilson*, *supra* note 125, at 765 (stating that “the ESA supports a broad definition of habitat” because it only requires “occupied, not unoccupied, critical habitat have ‘physical or biological features . . . essential to conservation of the species . . .,’” and when Congress omits limiting language from one part of the statute, “there is a strong presumption that Congress purposely omitted that language.”) (first citing *Allison Engine Co. v. U.S. ex rel. Sanders*, 553 U.S. 662, 671 (2008); and then citing *Dep’t of Homeland Sec. v. MacLean*, 135 S. Ct. 913, 919 (2015)).

²⁰² *See Rylander et al.*, *supra* note 115, at 10536.

²⁰³ *See id.*

²⁰⁴ *Id.*; *see also Knighton Jr.*, *supra* note 85, at 571 (“Since the ESA’s enactment, the Services have designated areas as critical habitat because these areas were deemed essential for the conservation of the species and not necessarily based on whether the species could survive there.”).

definition would allow Unit 1 to be designated as critical habitat for the frog so long as it is considered essential to conservation of the species, regardless of whether the area is immediately habitable or not.²⁰⁵

This definition would also allow an area outside the Key deer's historical range to be designated as critical habitat as long as the habitability of such area is reasonably foreseeable, whether that be due to climate change or human intervention. Rylander and his colleagues' definition makes this possible with its usage of the phrase: "where a species . . . has the potential to occur . . . in the foreseeable future."²⁰⁶ The Key deer has the potential to reside on many different islands in the Florida Keys, so long as they have permanent freshwater sources. However, today only five of the twenty-six islands in their historical range contain these freshwater sources, and all of them will succumb to sea level rise at the current rate. Therefore, the only way the Key deer can be saved from its imminent extinction is by intervention in the form of assisted migration that transports the species to an unoccupied area. This definition permits that solution.

While leaving "habitat" undefined is the preferable outcome, the definition that Rylander and his colleagues proposed is acceptable. In a time where very few, if any, serious species protection laws exist, and climate change is rapidly pushing species toward extinction, this definition would allow the ESA critical habitat designation section to expand and potentially adapt in an essential way. Under the Biden administration, policymaking that considers climate change is possible. It is essential that the Biden administration commits to designating critical habitat for the Florida Key deer. Waiting for the next administration to act may be too late.

VI. CONCLUSION

The Florida Key deer is headed towards extinction at an alarming rate. Only 463 hectares of usable Key deer habitat are left because of urbanization and development, and as a result, the Key deer has been relegated to existing on only five of the twenty-six islands that make up their historical range.²⁰⁷ Worse yet, eighty-six percent (86%) of the islands occupied by the Key deer are less than three feet above sea level,²⁰⁸ and sea level in South Florida is projected to rise seven more feet by the year 2100.²⁰⁹ Without human intervention, the Key deer will succumb to sea level rise as it takes what is left of their home.

The critical habitat designation framework is an essential component of protecting endangered and threatened species from extinction.²¹⁰ The Key

²⁰⁵ See Rylander et al., *supra* note 115, at 10537.

²⁰⁶ See Rylander et al., *supra* note 115, at 10536.

²⁰⁷ See Key Deer Recovery Plan, *supra* note 9.

²⁰⁸ See CTR. FOR BIOLOGICAL DIVERSITY, *supra* note 41, at 1.

²⁰⁹ See Keith W. Rizzardi, *Flee the Rising Sea? South Florida's Choice of Leadership or Litigation*, in CLIMATE JUSTICE: CASE STUDIES IN GLOBAL AND REGIONAL GOVERNANCE CHALLENGES 178 (Randall S. Abate ed., 2016).

²¹⁰ See *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978) (holding that the plain intent of

deer's critical habitat designation may be more difficult than other species,' but it is not impossible.²¹¹ Section Four of the ESA governs critical habitat designations and defines critical habitat as including occupied and unoccupied areas.²¹² Section Four of the ESA also governs the Secretary's duty to design a recovery plan,²¹³ which is often used in the critical habitat designation process. These recovery plans are capable of accounting for climate change²¹⁴ and prescribing assisted migration to recover the species;²¹⁵ however, the Key deer's 1999 recovery plan is devoid of either of those features.²¹⁶

Weyerhaeuser Co. potentially shaped the critical habitat designation framework by holding that critical habitat must also be "habitat" for a species,²¹⁷ but there is no judicial definition of "habitat." The Trump administration's federal rule, published in 2020, defined "habitat" as "the abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species."²¹⁸ The USFWS has indicated that this does not include areas that need restoration to support a species.

The pre-*Weyerhaeuser Co.* application of the critical habitat designation section could save the Florida Key deer. The WSP and the Florida panther set examples for what must be done to save the Florida Key deer using the pre-*Weyerhaeuser Co.* interpretation. The USFWS used considerations of sea level rise in designating critical habitat outside the WSP's occupied area²¹⁹ and the Florida panther had assisted migration prescribed in their recovery plan as a necessary measure to recover the species.²²⁰ Either or both of these measures could be used to prescribe assisted migration to save the Florida Key deer from extinction.

In order to use the pre-*Weyerhaeuser Co.* interpretation of the critical habitat designation section of the ESA to save the Key deer, the Trump Administration's federal rule must be repealed, and *Weyerhaeuser Co.*'s holding must be limited as much as possible. Repealing the Trump-era federal rule will leave

Congress in enacting the ESA was to protect listed species whatever the cost, and in order to do that their habitats must be protected accordingly).

²¹¹ See 16 U.S.C. § 1533(a)(3)(A) (2022) ("The Secretary . . . shall, concurrently with making a determination . . . that a species is an endangered species or threatened species, designate any habitat of such species which is then considered to be critical habitat[.]"); see also *Conservancy of S.W. Fla. v. U.S. Fish & Wildlife Serv.*, 677 F.3d 1073 (11th Cir. 2012) (holding that this *concurrent* requirement does not apply to species listed prior to the 1978 amendments, and that includes the Key deer).

²¹² See 16 U.S.C. § 1532(5)(A)(i)-(ii) (2022).

²¹³ See 16 U.S.C. § 1533(b)(2), (f)(1).

²¹⁴ See *supra* Section IV.A.

²¹⁵ See *supra* Section IV.B.

²¹⁶ See Key Deer Recovery Plan, *supra* note 9.

²¹⁷ See *Weyerhaeuser Co. v. U.S. Fish & Wildlife Serv.*, 139 S. Ct. 361 (2018).

²¹⁸ 50 C.F.R. § 424.02 (2022).

²¹⁹ See Revised Designation of Critical Habitat for the Pacific Coast Population of the Western Snowy Plover, 50 C.F.R. pt. 17 (2012).

²²⁰ See Florida Panther Recovery Plan, *supra* note 155, at ix.

Weyerhaeuser Co.'s holding to stand alone, which would render it innocuous. Without a definition of "habitat" the requirement that "critical habitat must be habitat" is essentially meaningless. The USFWS could then potentially return to the critical habitat designation process they had prior to the implementation of this rule, or the outcome of *Weyerhaeuser Co.*

If a definition of "habitat" must be used to replace the Trump-era federal rule, a better option is one that considers the scientific definition of habitat, as well as the goals of the ESA. This definition will aim to protect species in a legal realm, and should consider the legal implications, in addition to the ecological ones. Rylander and his colleagues proposed a definition that would be best suited to protect the Florida Key deer in the face of climate change impacts.²²¹ Under Rylander's definition, the Key deer could be prescribed assisted migration and translocated to a space where they could thrive free from the threats of sea level rise.²²²

²²¹ See Rylander et al., *supra* note 115, at 10536 ("Habitat is the area or type of site where a species naturally occurs or that it depends on directly or indirectly to carry out its life processes, or where a species formerly occurred or has the potential to occur and carry out its life processes in the foreseeable future.").

²²² See *id.*