

FLORIDA'S SEA TURTLE STRIFE:
AMENDING THE ESA AND FLORIDA LAW TO INCLUDE CLIMATE CHANGE

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I. INTRODUCTION

"Scientists that are studying sea turtle hatchlings and eggs have found no boy sea turtles . . . only female sea turtles for the past four years," reports the manager of the Turtle Hospital, Bette Zirkelbach, in the Florida Keys.² Because of climate change, the last four summers have also been the hottest on record, which has led to higher incubation temperatures of sea turtle eggs, and therefore, nearly all sea turtles being born female.³ Sea turtle scientists predict that in the coming years with less males available, there will be a decline in the sea turtle population and less genetic diversity.⁴

All five sea turtle species in Florida are listed as either endangered or threatened under the Endangered Species Act ("ESA"), which protects the sea turtles from human development affecting them and their behavior, breeding, and feeding.⁵ It also prevents them from human harassment, possession, importing, exporting, and killing.⁶ All five are also protected by Florida Statute Section 379.2431, referred to as the Marine Turtle Protection Act ("MTPA"), which protects the turtles from interference from humans.⁷ The MTPA also permits the Florida Fish and Wildlife Conservation Commission ("FWC") staff to conduct research, conservation, and educational activities with the sea turtles and allows the Florida Department of Environmental Protection ("DEP") to regulate beach

¹ Florida State University College of Law, J.D. May 2023

² Maria A. Cardona, *Hotter Summers mean Florida's Turtles are Mostly born Female*, REUTERS (Aug. 2, 2022), <https://www.reuters.com/business/environment/hotter-summers-mean-floridas-turtles-are-mostly-born-female-2022-08-01/>.

³ *Id.*

⁴ *Id.*

⁵ *Sea Turtle FAQ*, FLA. FISH AND WILDLIFE CONSERVATION COMM'N <https://myfwc.com/research/wildlife/sea-turtles/florida/faq/> (last visited Sep.15, 2023); *See generally* 16 U.S.C. §§ 1531-44.

⁶ *Id.*

⁷ *See Marine Turtle Protection Act*, FLA. STAT. § 379.2431 (2023).

renourishment projects.⁸ The ESA does not directly address climate change, though some protections against it can be inferred, while the MTPA offers no wiggle room for any climate change interpretation.⁹

The recent findings of nearly all female turtles and no new male turtles on the coasts of Florida spells disaster for the future of Florida's sea turtles and highlights the large gap in protection in both the ESA and the MTPA when it comes to the new challenges that endangered and threatened species will face due to climate change. Part I of this paper will review the ESA's current protections for Florida's sea turtles and summarize the MTPA. Part II will expand upon the problems that sea turtles face in Florida due to climate change. Part III will underline how current legal remedies in the ESA and MTPA fall short in their goals to protect the species from extinction. Finally, Part IV will propose ways to improve the ESA with a new part of the statute that is inclusive to climate change and how Florida can strengthen the MTPA by allowing the agencies more power to regulate and mitigate climate change.

II. CURRENT PROTECTIONS FOR FLORIDA'S SEA TURTLES

The ESA and the MTPA share the same goals of “conserv[ing] and recover[ing] wild populations of threatened and endangered species,” including the five Florida sea turtles.¹⁰ The ESA provides endangered and threatened species with federal protection, while the MTPA provides them with an extra level of state protection, but both work together to conserve and protect all five species of turtles.¹¹ The ESA is a broader umbrella that protects listed species behavior, breeding, and feeding from human harassment, possession, importation, exportation, and killing.¹² The MTPA is a Florida-specific statute that restricts the take, possession, disturbance, mutilation, destruction, selling, transference,

⁸ *Id.*

⁹ *See infra* Part I.A.

¹⁰ FLA. FISH AND WILDLIFE CONSERVATION COMM'N, MARINE TURTLE CONSERVATION HANDBOOK, 4-12 (2016), <https://www.flrules.org/gateway/readRefFile.asp?refId=7547&filename=FWC%20Marine%20Turtle%20Conservation%20Handbook.pdf>.

¹¹ *Id.*; 16 U.S.C. §§ 1531-44.

¹² 16 U.S.C. §§ 1531-44.

molestation, and harassment of marine turtles, nests or eggs, in addition to protecting their habitat.¹³ The rest of this section will review the ESA's current protections for Florida's sea turtles and summarize the MTPA.

A. The Endangered Species Act

The ESA affords protections to two types of species: those listed by the Secretary of the Department of the Interior as endangered or threatened.¹⁴ The ESA defines endangered species as a "species which is in danger of extinction throughout all or a significant portion of its range," while "threatened species" means "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."¹⁵ The mechanism that the ESA uses as a sword to enforce its prohibitions is the take prohibition in Section 9, which prohibits anyone doing anything that might harm, harass, or hurt the listed species.¹⁶ "Take" in the ESA is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."¹⁷ Listing a species as endangered rather than threatened provides it with a higher protective status.¹⁸ Endangered species are provided with the full protection of the ESA, whereas under Section 4(d), the listing agency has the power to determine which ESA protections apply to provide for the conservation of threatened species.¹⁹ However, a threatened species do get federal protection before it becomes nearly extinct and when endangered species begin to recover, the slightly more relaxed status of "threatened" scales back the agency resources needed to protect it.²⁰ The following subsections cover other

¹³ *Marine Turtle Protection Act*, FLA. STAT. § 379.2431 (2023); *Marine Turtle Protection*, FLA. FISH AND WILDLIFE CONSERVATION COMM'N, <https://myfwc.com/wildlifehabitats/wildlife/sea-turtle/protection/> (last visited Sep. 15, 2023).

¹⁴ 16 U.S.C. § 1533(a).

¹⁵ 16 U.S.C. § 1532(6),(20).

¹⁶ *See* 16 U.S.C. § 1538.

¹⁷ 16 U.S.C. § 1532(19).

¹⁸ *The Endangered Species Act: An Overview*, NAT'L AGRIC. L. CTR., <https://nationalaglawcenter.org/overview/esa/> (last visited Sept. 17, 2023).

¹⁹ U.S. FISH & WILDLIFE SERV., SECTION 4(D) RULES UNDER THE ENDANGERED SPECIES ACT (2021), https://www.fws.gov/sites/default/files/documents/section-4d-rules_0.pdf.

²⁰ *Id.*

sections of the ESA and how each of them do not properly take climate change into account to effectively protect Florida's sea turtles.

1. Listing

Listing the sea turtles is the first step in trying to protect them from the devastating effects of climate change by offering them the protection of the ESA. The U.S. Fish and Wildlife Service ("USFWS") has jurisdiction over land species while the National Marine Fisheries Service ("NMFS") has jurisdiction over the marine species.²¹ However as sea turtles live in the ocean and come on land to nest, both agencies share jurisdiction over their protection. NOAA "leads conservation and recovery of sea turtles when they are at sea, while the USFWS has the lead when they are on nesting beaches."²²

Section 4 of the ESA provides instructions on how a species can be listed as endangered or threatened.²³ There are two ways this can happen. First, the USFWS or NMFS can act on its own to list a species. Under this route, the agency will make listing determinations based on the best scientific and commercial data available to it after conducting a review of the status of the species.²⁴ Then, the agency will promulgate a rule to list the species.²⁵ If the USFWS or NMFS does not act to list a species, an interested person may submit a petition, which requires the agency to make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted.²⁶ Then the agency can choose whether to list the species.²⁷

When making the decision regarding the status of the species, the agency has to determine whether the continued survival of the species would be impacted

²¹ *Sea Turtles*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., <https://www.noaa.gov/education/resource-collections/marine-life/sea-turtles> (Feb. 1, 2019).

²² *Id.*

²³ 16 U.S.C. § 1533(a).

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.* § 1533(b).

²⁷ *Id.*

by any of the following factors: “(A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.”²⁸

Climate change does not fit into factors (B) or (C), but it can potentially be read into (A), (D), and (E). Climate change has led to rising seas, retreating shores, bigger storms, and hotter temperatures in Florida.²⁹ As a result, sea turtles’ ability to find food, reproduce, and access their habitat has been negatively impacted.³⁰ All of these negative impacts to their habitat can fall under factor (A), the present or threatened destruction, modification, or curtailment of its habitat or range. Climate change is a natural and manmade factor which is currently affecting the sea turtles’ continued existence, so it fits into factor (E), other natural or manmade factors affecting its continued existence. Finally, for factor (D) the inadequacy of existing regulatory mechanisms, the agency can look to the current version of the ESA, other federal statutes, and Florida statutes and regulations, to determine if the existing regulatory mechanisms are inadequate to address the problems climate change is causing.

2. *Designation of Critical Habitat*

After the USFWS or NMFS lists the species, the agency must implement a recovery plan, which includes designating critical habitat.³¹ Designating critical habitat works with the Section 7 jeopardy prohibition to prevent any federal actions, federal authorization, or funding of actions that are “likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat.”³² It is important to

²⁸ *Id.* §§1533(a)(1), (b)(1)(A).

²⁹ U.S. ENV’T PROT. AGENCY, WHAT CLIMATE CHANGE MEANS FOR FLORIDA (2016), <https://www.epa.gov/sites/default/files/2016-08/documents/climate-change-fl.pdf>.

³⁰ *Id.*

³¹ 16 U.S.C. §§ 1533(a)(3)(A)(i), 1536(a)(2).

³² *Id.*

note that this part of the ESA only grants the species protection from federal actions, not from non-federal actors.³³ Under the ESA, the

Services may designate two types of critical habitat: specific areas within the geographical area occupied by the species, which contain the ‘physical or biological features essential to the conservation of the species’ and may require special management protections . . . and . . . areas outside the geographical areas occupied by the species if the Secretary determines that such unoccupied areas are ‘essential for the conservation of the species.’³⁴

The designation of critical habitat could be a key tool in protecting Florida’s sea turtles from losing more of their habitat and food sources due to climate change. Current case law has determined that due to the lack of foreseeability and scientific uncertainty of how climate change has directly affected and will continue to affect endangered and threatened species, the courts generally defer to what the USFWS determines in its reports.³⁵ This deference has allowed the USFWS to designate other species’ habitat as critical habitat due to climate change, such as when the USFWS listed three areas of Alaska’s coast and waters as critical habitat for the polar bear in 2009.³⁶ In *Alaska Oil & Gas Ass’n. v. Jewell*, the plaintiffs challenged this designation because they believed that “the designation was unsupported by the administrative record because FWS arbitrarily designated large land and sea ice masses, but did not identify specific areas containing the physical and biological features essential for polar bears.”³⁷ However, the 9th Circuit ruled in favor of the USFWS because the point of the ESA is to ensure species recovery, not just the existing population, and that the

³³ *Id.* § 1536(a)(2).

³⁴ LINDA TSANG, CONG. RSCH. SERV., THE ENDANGERED SPECIES ACT AND CLIMATE CHANGE: SELECTED LEGAL ISSUES (2019), <https://crsreports.congress.gov/product/pdf/R/R45926>; 16 U.S.C. §§ 1533(b)(2), 1532(5).

³⁵ TSANG, *supra* note 34.

³⁶ *Alaska Oil & Gas Ass’n. v. Jewell*, 815 F.3d 544, 550 (9th Cir. 2016).

³⁷ *Id.* at 553.

USFWS “relied on numerous published studies and reports describing the effects of climate change” when gathering information on climate change and sea ice.³⁸

The designation of critical habitat can therefore be used as a tool to protect endangered and threatened species, like Florida’s sea turtles, from federal action that might compound the effects that climate change has had on their habitat, as long as the USFWS reasonably considered evidence and data regarding climate change, even if such data is scientifically uncertain.³⁹

3. Consultation

When a federal agency proposes a project or action, under Section 7 of the ESA, the agency must request an informal consultation from either USFWS or NMFS.⁴⁰ If no listed species will be affected, then the applicable service will provide a letter of concurrence and the consultation process ends.⁴¹ If the agency action may affect a listed species or their critical habitat, then the agency is required to produce a biological assessment using the best scientific and commercial data available to verify that its action will not jeopardize the existence of a listed species or adversely affect its habitat.⁴² If the agency determines that its action will likely have an adverse effect on the listed species or its critical habitat, then the formal consultation process begins and the agency must develop a biological opinion.⁴³ A biological opinion ensures that the agency action will not reduce the likelihood of survival and recovery of a listed species and usually includes conservation recommendations and reasonable measures needed to minimize any harmful effects.⁴⁴

In the past, entities have brought lawsuits to ensure that the USFWS takes climate change into account when creating its biological opinion based on the best

³⁸ *Id.* at 558-59.

³⁹ TSANG, *supra* note 34.

⁴⁰ 16 U.S.C. § 1536(a)(2).

⁴¹ *Id.*

⁴² *Id.*

⁴³ *Id.* at § 1536(c).

⁴⁴ *Id.* at §§ 1536(a)(2), (c).

scientific data available, as required by Section 7.⁴⁵ In cases like *Nat. Res. Def. Council v. Kempthorne*, the federal district court noted that the studies the USFWS conducted anticipated that “climate change would adversely affect future water availability” in the delta smelt’s habitat.⁴⁶ The court concluded that the USFWS wrongfully failed to meaningfully discuss this data when it created its biological opinion for a water diversion project in the area.⁴⁷ Accordingly, when lawsuits are brought to Florida courts, the courts can use the formal consultation process to ensure that the sea turtles are properly protected as long as there is a causal connection between the proposed federal action and climate change.⁴⁸

Additionally, the consultation requirement obligates the agencies to “evaluate the effects of the action and cumulative effects on the listed species or critical habitat” to formulate their opinion as to whether “the action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.”⁴⁹ The cumulative effects analysis can be used to evaluate the effect that the federal action has on the listed species or its habitat in light of climate change. For example, in *Wilderness Workshop v. BLM*, the court held that the federal agency had to take a hard look at the impacts of greenhouse gas emissions and climate change, considering the direct, indirect, and cumulative impacts of the proposed action.⁵⁰

B. The Marine Turtle Protection Act

The Florida Marine Turtle Protection Act was enacted to “ensure that the FWC has the appropriate authority and resources to implement its responsibilities under the recovery plans of the USFWS” for all five of Florida’s sea turtles.⁵¹ The act works in tandem with the ESA by using state power to restrict the take,

⁴⁵ TSANG, *supra* note 34; See also 50 C.F.R. § 402.14.

⁴⁶ *Nat. Res. Def. Council v. Kempthorne*, 506 F. Supp. 2d 322, 369 (E.D. Cal. 2007).

⁴⁷ *Id.*

⁴⁸ TSANG, *supra* note 34.

⁴⁹ 50 C.F.R. § 402.14(g)(3)-(4) .

⁵⁰ *Wilderness Workshop v. United States Bureau of Land Mgmt.*, 342 F.Supp 3d 1145, 1167 (D. Colo. 2018).

⁵¹ *Marine Turtle Protection Act*, FLA. STAT. § 379.2431(1)(b) (2023).

possession, disturbance, mutilation, destruction, selling, transference, molestation, and harassment of marine turtles, nests or eggs, in addition to protecting their habitat.⁵² “Take” in the MTPA is defined as “an act that actually kills or injures marine turtles, and includes significant habitat modification or degradation that kills or injures marine turtles by significantly impairing essential behavioral patterns, such as breeding, feeding, or sheltering.”⁵³ The MTPA definition is broader in the amount of activities covered by the ESA because it does not list out specific acts that are prohibited, just an act that “actually kills or injures marine turtles.”⁵⁴ However, the ESA is much broader in the conduct that it captures because the MTPA take definition does not include attempts, the conduct has to actually produce a harmful result to the marine turtles.

The FWC is granted the power to issue a take permit to a properly accredited person for the purpose of sea turtle conservation, fine violators, bring criminal charges against violators, deny take permits not authorized under Section 10 of the ESA (Incidental Take Permits), and give “special consideration to beach preservation and . . . nourishment projects that restore habitat of endangered marine turtle species.”⁵⁵ The MTPA does not contemplate or provide any protections for climate change other than the application of the law to non-federal actors, which ESA Section 9 also covers in its prohibition against takes of endangered or threatened species.⁵⁶

As of now, there is no case law, substantial scholarly research, or law that has connected the MTPA and climate change.

III. IMPACT ON FLORIDA SEA TURTLES

Florida has five species of sea turtles, their common names are: the Loggerhead, the Green Turtle, the Leatherback, the Kemp’s Ridley, and the

⁵² *Id.*

⁵³ *Marine Turtle Protection Act*, FLA. STAT. § 379.2431(1)(c)(2) (2023).

⁵⁴ *Id.*

⁵⁵ *Id.* at § 379.2431(1)(i).

⁵⁶ *See generally Id.* § 379.2431; 16 U.S.C. § 1538.

Hawksbill.⁵⁷ The Green Sea Turtle and the Loggerhead are listed as threatened in their North Atlantic distinct population segments, while the Leatherback, the Kemp's Ridley, and the Hawksbill are all listed as endangered wherever they are found.⁵⁸ Loggerheads are larger sea turtles, weighing an average of 275 pounds, and are mainly carnivores, eating clams, crabs, and other armored animals.⁵⁹ Green Sea Turtles are green, oval-shaped, weigh an average of 350 pounds, and are mainly herbivores, eating seagrass and algae.⁶⁰ Green Sea turtles spend their days in shallow flats and seagrass meadows and their nights in rock ledges, oyster bars, and coral reefs.⁶¹ Leatherbacks eat mostly jellyfish and are larger, dive deeper, travel farther, and tolerate colder temperatures than any other sea turtle.⁶² Kemp's Ridley turtles are small and eat crabs and other crustaceans.⁶³ They are also the rarest sea turtle in the world, nesting on only one major beach in Mexico.⁶⁴ The Hawksbill is also a smaller sea turtle, eating primarily sponges, and is frequently seen in the lagoons, reefs, and bays of the Florida Keys.⁶⁵

The USFWS has listed all five sea turtles, which affords them the protection of the ESA, and all five are included in the MTPA, which also grants them state protection through the FWC. Because of climate change, in 2022, the previous four summers were the hottest on record, which means that when a sea turtle lays her eggs in the sand, the ambient temperature of the nest is hot as well.⁶⁶ The sex of sea turtles is determined, not by fertilization, but by the temperature of the egg during incubation, called temperature-dependent sex

⁵⁷ *Species of Sea Turtles Found in Florida*, FLA. FISH AND WILDLIFE CONSERVATION COMM'N, <https://myfwc.com/research/wildlife/sea-turtles/florida/species/> (last visited Sept. 23, 2023).

⁵⁸ *Listed species believed to or known to occur in Florida*, U.S. FISH & WILDLIFE SERV., <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=FL&stateName=Florida&statusCategory=Listed> (last visited Sept. 23, 2023).

⁵⁹ FLA. FISH AND WILDLIFE CONSERVATION COMM'N, *supra* note 57.

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*; Cardona, *supra* note 2.

determination.⁶⁷ If the turtles incubate above 88.8° F, the turtle hatchlings will be female.⁶⁸ Therefore, sea turtle scientists predict that in the coming years with less males available, there will be a decline in the sea turtle population, and less genetic diversity.⁶⁹

Climate change has led to rising seas, retreating shores, bigger storms, ocean acidification, and hotter temperatures in Florida.⁷⁰ As sea turtles live primarily in the ocean and require beaches to reproduce, climate change has already begun to take its toll on their populations.⁷¹ Sea turtles have a magnetic map of the location of the beach from which they hatched imprinted within their memories, which is how they are able to return to the same beaches they hatched from to lay their eggs.⁷² Stronger storms combined with rising sea levels have changed and will continue to change the shape, size, and even existence of the beaches.⁷³ Further, the addition of more carbon dioxide in the atmosphere has lowered the pH of the ocean, making it more acidic.⁷⁴ This is called ocean acidification, which also threatens the survival of the turtles by negatively impacting their food sources.⁷⁵ Ocean acidification affects shelled animals like coral reefs, clams, oysters, and other smaller shelled animals, making it more difficult for them to grow and maintain their shells.⁷⁶ Less available food combined with more difficulty finding their reproductive habitat, and the

⁶⁷ *What Causes a Sea Turtle to be Born Male or Female?*, NAT'L OCEANIC & ATMOSPHERIC ADMIN., June 15, 2022, <https://oceanservice.noaa.gov/facts/temperature-dependent.html>.

⁶⁸ *Id.*

⁶⁹ Cardona, *supra* note 2.

⁷⁰ See U.S. ENV'T PROT. AGENCY, *supra* note 29.

⁷¹ *Information about Sea Turtles: Threats from Climate Change*, SEA TURTLE CONSERVANCY, <https://conserveturtles.org/information-sea-turtles-threats-climate-change/> (last visited Sept. 23, 2023).

⁷² *Id.*

⁷³ *Id.*

⁷⁴ WASHINGTON STATE BLUE RIBBON PANEL ON OCEAN ACIDIFICATION, OCEAN ACIDIFICATION: FROM KNOWLEDGE TO ACTION (Hedia Adelsman & Lara W. Binder eds., 2012).

⁷⁵ *Id.*

⁷⁶ *Id.*

increasing number of female turtles born, will eventually threaten turtle genetic diversity.⁷⁷

The existing impacts on Florida sea turtles, which will be worsened as climate change continues to affect the globe, reveals the inadequate protection that the ESA and MTPA provide listed species. The latter half of this paper will underline how current legal remedies in the ESA and MTPA fall short in their goals to protect sea turtles from extinction. Then the final part will propose ways to improve the ESA, adding a new part of the statute that mentions climate change, and how Florida can change the MTPA to give agencies more power over the regulation and mitigation of climate change.

IV. FAILURE TO ADEQUATELY ADDRESS CLIMATE CHANGE

The current legal provisions of the ESA and MTPA are failing to adequately protect species from the effects of climate change. The listing procedures, designation of critical habitat, and consultation requirement fail to fully protect species because of the undermining of protections that occurs due to the lack of permanence in agency rules, issues within the listing of a species and the funding that goes with it, and the complete lack of guidance for Floridians under the MTPA.

A. Loopholes in the ESA

Listing species is the first step to offering them the protection of the federal government against acts that might jeopardize their continued existence. So far, the current mechanisms within the statute could allow for climate change impacts to be read into the five factor considerations that the Secretary must make when evaluating whether to list a species. However, even if a species is listed, issues exist in the actual implementation and enforcement of the statute that impact its efficacy.⁷⁸ Despite being listed, threats to the species persist especially in the light of climate change, overall programmatic funding is insufficient and

⁷⁷ SEA TURTLE CONSERVANCY, *supra* note 71.

⁷⁸ See Daniel M. Evans et al., *Species Recovery in the United States: Increasing the Effectiveness of the Endangered Species Act*, 20 ISSUES IN ECOLOGY 1 (2016).

“the distribution of money among listed species is highly uneven.”⁷⁹ The listing process itself is imperfect because “at least [ten] times more species than are actually listed likely qualify for listing.”⁸⁰

Currently, there is a deficiency in both the consideration of climate change in species recovery plans, as well as listing climate-threatened species because of climate change. As of 2019, only 13% of all species recovery plans actually addressed climate change as a threat, compared to the fact that scientists have identified climate change as the primary threat to almost 40% of listed species.⁸¹

As of March 2021, the FWS had considered climate change in their considerations of listing four animals: the polar bear, the American Pika, the American wolverine, and the Gunnison sage-grouse.⁸² Of these animals, only the Gunnison sage-grouse and the polar bear are actually listed as threatened, the American wolverine is proposed threatened, and the American Pika is not listed at all.⁸³

By 2013, four of the five Florida sea turtle recovery plans, the Loggerhead, the Leatherback, the Hawksbill, and the Kemp’s Ridley, did mention climate change.⁸⁴ The revised Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle discussed climate change as being a

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ Aimee Delach et al., *Agency Plans are Inadequate to Conserve US Endangered Species under Climate Change*, 9 NATURE CLIMATE CHANGE 999 (2019).

⁸² Talia Ogliore, *Coastal Lupine Faces Specific Extinction Threat from Climate Change*, WASH. UNIV. ST. LOUIS: NEWS ROOM (Mar. 29, 2021), <https://source.wustl.edu/2021/03/coastal-lupine-faces-specific-extinction-threat-from-climate-change/>.

⁸³ *Gunnison Sage-Grouse*, U.S. FISH & WILDLIFE SERV., <https://ecos.fws.gov/ecp/species/6040> (Aug. 4, 2022); *North American Wolverine*, U.S. FISH & WILDLIFE SERV., <https://ecos.fws.gov/ecp/species/5123> (Jan. 9, 2020); *American Pika*, U.S. FISH & WILDLIFE SERV., <https://ecos.fws.gov/ecp/species/8741> (Jun. 9, 2011); *Polar Bear*, U.S. FISH & WILDLIFE SERV., <https://ecos.fws.gov/ecp/species/49518> (Jun. 11, 2021).

⁸⁴ See Delach et al., *supra* note 81, data availability at <https://osf.io/76ytr>.

potential threat to Loggerhead populations.⁸⁵ The recovery plan suggested developing “a model that describes the effects of sea level rise on loggerhead nesting beaches” and “implement measures” and more generally, to “develop agreements to reduce atmospheric greenhouse gasses.”⁸⁶ The 5-year Review on the Leatherback’s endangered status mentioned that climate change will impact their habitat and biology.⁸⁷ The Hawksbill 5-year Review was similar to the Leatherback’s 5-year Review in its discussion of climate change and its impact on the sea turtle’s nesting on beaches that are eroding and getting hotter, food sources, and habitat.⁸⁸ The Hawksbill Review supplied that “additional information and data are particularly needed on long-term population trends based on both nesting and in-water population monitoring.”⁸⁹ The Bi-National Recovery Plan for the Kemp’s Ridley Sea Turtle discussed similar effects as the other sea turtle recovery plans, however it suggested assessing the potential impacts of climate change on the sex-ratio of the turtles.⁹⁰ However, all five of them were not originally listed because of climate change, but rather other factors. Additionally, the remaining sea turtle whose recovery plan is silent on climate change is the Green Sea Turtle which is only listed as threatened. If climate change was considered by the Secretary, they could be uplisted as endangered, offering them more protections than they are currently receiving.

Courts in the past have ruled that potential impacts on species due to climate change is a legitimate consideration in the Secretary’s determination on

⁸⁵ NAT’L MARINE FISHERIES SERV. & U.S. FISH & WILDLIFE SERV., RECOVERY PLAN FOR THE NORTHWEST ATLANTIC POPULATION OF THE LOGGERHEAD SEA TURTLE, SECOND REVISION I-45 (2008), https://ecos.fws.gov/docs/recovery_plan/090116.pdf.

⁸⁶ *Id.* at II-26.

⁸⁷ NAT’L MARINE FISHERIES SERV. & U.S. FISH & WILDLIFE SERV., LEATHERBACK SEA TURTLE 5-YEAR REVIEW: SUMMARY AND EVALUATION 46 (2013), https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs//2140.pdf.

⁸⁸ See NAT’L MARINE FISHERIES SERV. & U.S. FISH & WILDLIFE SERV., HAWKSBILL SEA TURTLE 5-YEAR REVIEW: SUMMARY AND EVALUATION 1 (2013), https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/3614.pdf.

⁸⁹ *Id.* at 54.

⁹⁰ See NAT’L MARINE FISHERIES SERV. & U.S. FISH & WILDLIFE SERV., RECOVERY PLAN FOR THE KEMP’S RIDLEY SEA TURTLE, SECOND REVISION II-11 (2011), https://ecos.fws.gov/docs/recovery_plan/kemp Ridley_revision2_with%20signature.pdf.

whether to list a species. In 2018, the U.S. District Court for the District of Colorado upheld the USFWS's listing of the Gunnison Sage-Grouse after the Service concluded, in addition to other factors, that climate change was going to change the conditions in Colorado and that the Gunnison sage-grouse would not be able to effectively adapt in time to prevent negative effects on their populations.⁹¹ Because the agency relied on sufficient and reliable data, the court held that the "[s]ervice's assessment of an increased threat from climate change and drought was not arbitrary and capricious."⁹²

While the listing of the Gunnison Sage-Grouse was a success, considering climate change as a factor in the Secretary's determinations has not occurred for the vast majority of other species threatened by climate change. This presents a major gap in listing considerations, that if corrected, would help many climate-threatened species, including Sea Turtles. For example, the American Pika has yet to be listed, but it is rapidly disappearing from its habitat.⁹³ Their ideal habitats are the cool and moist mountain ecosystems, as they overheat and die in temperatures as low as 78°F.⁹⁴ Due to climate change, the temperatures in the western mountain habitats have been higher, with one-third of their population vanishing in Oregon and Nevada, in addition to their numbers in the Great Basin dwindling.⁹⁵ Like the canary in the coalmine, the American Pikas have been an indicator species of climatic variability since at least 2017, yet it remains to be unlisted as we near the end of 2023.⁹⁶

One of the main issues may be the fact that the USFWS's enforcement of the listings is susceptible to the politicization of climate change with presidents from different political parties disrupting species mitigation and adaptation to

⁹¹ Colorado v. U.S. Fish & Wildlife Serv., 362 F. Supp. 3d 951, 970-71 (D. Colo. 2018).

⁹² *Id.*

⁹³ *American Pika*, NAT'L WILDLIFE FED'N, <https://www.nwf.org/Educational-Resources/Wildlife-Guide/Mammals/American-Pika> (last visited Sept. 27, 2023).

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ Mike Gaworecki, *The American pika: A Case Study in Wildlife Acclimating to Climate Change*, MONGABAY (Aug. 10, 2017), <https://news.mongabay.com/2017/08/the-american-pika-a-case-study-in-wildlife-acclimating-to-climate-change/>.

climate change.⁹⁷ For example, the Obama Administration implemented policies on climate change, produced Executive Orders relating to species adaptation, and agreed to the Paris Accords, most of which were then undone by the Trump Administration.⁹⁸ Now the Biden Administration has once again placed a focus on climate change. Currently the Administration is revising regulations for listing species and critical habitat, trying to reinstate previous versions of the regulation that required these determinations be made “without reference to possible economic or other impacts of such determination.”⁹⁹ There are also currently revisions in place for Section 7 consultation to redefine “effects of the action” to make it more inclusive of climate change.¹⁰⁰ And more importantly, the Biden Administration is reinstating the blanket 4(d) rule, which establishes an automatic default extension of the protections that endangered species receive to threatened species.¹⁰¹

All of these changes from the Biden Administration provide a beacon of hope for species endangered and threatened by climate change. However due to the nature of our administrative agencies and the executive branch, the efforts of the Biden Administration agencies might be undone by the next president.¹⁰² The four to eight-year political back and forth on climate change is not enough time for a species to recover fully or adapt to climate change, so a better, more long-term solution is required if there is going to be more lasting change in the conservation, adaptation, and mitigation of risks to the listed species.¹⁰³

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Endangered Species Act Regulation Revisions*, U.S. FISH & WILDLIFE SERV. <https://www.fws.gov/project/endangered-species-act-regulation-revisions> (last visited Oct. 1, 2023).

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² See President Biden, Remarks on Actions to Tackle the Climate Change Crisis (July 20, 2022), <https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/07/20/remarks-by-president-biden-on-actions-to-tackle-the-climate-crisis/>.

¹⁰³ Delach et al., *supra* note 81, at 1002.

Additionally, the current way that spending is allocated is failing to adequately protect listed species.¹⁰⁴ The current imbalanced funding has negatively impacted species recovery.¹⁰⁵ In 2012, 62% of the species recovery funding was used for a mere 10% of listed species.¹⁰⁶ From 1980 to 2014, less than 25% of the required recovery funding was actually allocated annually, giving agencies a very restricted budget to work with.¹⁰⁷ A lack of sufficient funding and allocation of the few resources the agencies do have access to hinders their ability to adequately implement and enforce the procedures that protect, mitigate, and assist in the recovery of listed species. As of 2020, the Loggerheads in the Northeast Atlantic Ocean received \$388,457 in federal funding, the Green Sea Turtles in Florida received \$7,500, the Leatherbacks received \$3,808,076, the Kemp's Ridley received \$3,620,214, and the Hawksbills received \$913,058.¹⁰⁸

B. Absence in the MTPA and Florida Law

Currently, the Marine Turtle Protection Act has no mention of climate change or any protection for the future of sea turtles outside of individual takes and beach activities that affect sea turtles. Currently, FWC only has control over the takes of individual animals and the DEP has control over regulations for beach activities that affect the sea turtles like beach restoration, renourishment, and recreation.¹⁰⁹ FWC cannot regulate habitat, but it can comment on permitting for beach activities, suggest guidance for the future which will be impacted by climate change, and regulate activities that involve takes, like forcing fishermen in Florida waters to have sea turtle friendly shrimp nets.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 1003.

¹⁰⁸ U.S. FISH & WILDLIFE SERV., FEDERAL AND STATE ENDANGERED AND THREATENED SPECIES (2020), <https://www.fws.gov/sites/default/files/documents/endangered-threatened-species-expenditures-%20report-to-congress-fiscal-year-2020.pdf>.

¹⁰⁹ *Marine Turtle Protection Act*, FLA. STAT. §§ 379.2431(1)(g), (i) (2023).

V. RESOLUTION

The ESA is absolutely a necessary law to keep in place, as even some protection for endangered and threatened species is better than none. If it were to be scrapped entirely, it would leave many crucial species without protection, which could put the North American ecosystem in a bad situation. However, there are certainly ways we can improve upon the existing statute, reform how we fund and oversee the enforcement of the ESA, and add new sections that are more protective of species who will be significantly impacted by climate change.

The current issues with funding and the problematic disproportionate distribution of funds have served as roadblocks for the recovery and success of species that were able to be listed.¹¹⁰ The way that the ESA is set up allows its enforcement to be influenced by the whim of the party in power and four to eight years is not sufficient time for the listed species to adequately recover, especially in the face of climate change.¹¹¹ Just getting species on the list of endangered or threatened has been an issue, like in the case of the American Pika, which has yet to be listed despite years of research showing that it is rapidly disappearing.¹¹² Finally, the disproportionate spending has failed to protect listed species.¹¹³

A. Changing the ESA

To fix these issues, the simplest solution would be to revise and add sections to the current ESA to close the loopholes that have allowed these climate-threatened species to suffer and in some cases, perish. The current five factors that the Secretary must think about when determining whether a species should be listed or when reviewing a petition for a certain species to be listed must be revised. Although climate change could be read into factors A, C, and E, it would be much more effective to either revise (E) to explicitly include climate change as the “other natural or manmade factors” or to add a sixth factor, (F), that is dedicated only to considering climate change. This would eliminate the current

¹¹⁰ *See supra* Part III(A).

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

need to try and come up with a reason that could eventually get challenged in court. This would also take some of the pressure off of the agencies who must implement the law. As it stands, the agency's decision to list a species due to being threatened by climate change can be challenged in court for making an "arbitrary and capricious" decision, as seen in *Alaska Oil & Gas Ass'n*. Having to defend against similar cases if the agency began listing the many species that are threatened by climate change would be costly for the agency, further draining the already small pool of resources it has available. Adding a climate change factor would eliminate those legal challenges and potentially allow for the uplisting of endangered of both the Loggerhead and Green Sea Turtle.

The inclusion of either a review process of how funding is distributed or an independent commission to review the distribution of funds to listed species would benefit species that receive minimal funding. Despite not having adequate funding, what little money the agencies do have is distributed disproportionately, with some species receiving as little as \$60 for their species recovery funding.¹¹⁴ By creating an independent review board of ESA species recovery funding allotments to ensure that funding is distributed more equitably, more listed species will actually get the attention and care they need to mitigate or adapt to the effects of climate change.

A huge part of ensuring the species have adequate time to recover under the protections of the ESA would be creating a way to insulate the agency's actions from the effects of political changes in the executive branch. This would require either restructuring entirely how agencies work to give them more independence over their decision-making or utilizing a number of bypasses to avoid presidential observation, or three, changing the ability of the agency to later modify their own rules. The first solution is impractical because it would require overturning years of established administrative law and is likely politically impossible as well. There are several ways that agencies can avoid executive review including not engaging in regulatory action, producing more guidance

¹¹⁴ Delach et al., *supra* note 81, at 1002.

documents than rules, and creating non-significant rules.¹¹⁵ However, this solution is not practical either because the environmental regulatory agencies need the ability to enforce their regulations to protect endangered fauna and flora, which under the ESA, requires review from the executive branch. Furthermore, insulating agencies from outside political influence could be unwise depending on the goals of whichever presidential administration is in power during the formation of the more permanent and insulated rules.

Currently, the Secretary has the discretion to choose whether to include climate change in the biological opinions that the Department is required to produce.¹¹⁶ This has led to a huge deficiency in listings and considerations for critical habitat and permitting once listed.¹¹⁷ As of 2008, 87% of recovery plans did not include climate change.¹¹⁸ If there were a mandate that requires consultation with climate change experts to include climate change in every biological opinion, it would be very beneficial to climate-impacted species that are currently not offered enough or even any protection under the ESA.

B. Changing the MTPA

The second prong of addressing climate change would be asking the Florida legislature to give more authority to the FWC and DEP to have more discretion and enforcement power to regulate activities that worsen climate change. If the legislature were to include a larger and more expansive definition of take for the sea turtles as a collective, rather than just takes of individual animals, then all of Florida's sea turtles could be afforded a protection similar to that of the ESA. Because the state has its own resources, knows its waters, beaches, and the local sea turtles' needs better than the federal government, this would allow more specialized and targeted care for the continued survival of the species. Finally, if the legislature gave the FWC more power to regulate the habitat, it could make rules to protect the sea turtles' food supply.

¹¹⁵ See Jennifer Nou, *Agency Self-Insulation Under Presidential Review*, 126 HARV. L. REV. 1755 (2013).

¹¹⁶ Delach et al., *supra* note 81, at 999.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

The MTPA currently allows mitigating factors, like having an active marine turtle nest relocation program with the ability to administer such a program, as part of the permitting process for beach restoration, renourishment, and inlet sand transfer projects.¹¹⁹ However, if these mitigating factors are present, the MTPA restricts the DEP by ordering that they “must not restrict the timing of the project.”¹²⁰ This part of the statute is troubling in light of climate change. As the climate and beaches change, the turtle nesting seasons that were initially reliable, have become more unpredictable, beginning earlier. If a permit for a project to restore the beach with the ability to administer a mitigation program happens in February and since the time the permitting process began turtles have begun early nesting on the beach, the DEP has no power to restrict the project’s timing. This law would have made sense when climate change wasn’t pushing sea turtles to nest earlier and the state had an interest in quickly restoring beaches. In light of the current impacts to sea turtles and the threats they will continue to face, this law needs to be amended to give the DEP more discretion and control over the projects.

One argument against expanding federal regulation is that states can fill in the gaps with their own regulation. If the ESA and federal regulations are not amended to include the impacts of climate change more thoroughly, the MTPA could be used as a backstop for the flaws in the ESA. The current MTPA does not fix any of the issues that exist in the ESA. In addition to the aforementioned solutions, if the FWC and DEP were given more power to enforce and regulate, then adding a take prohibition clause that is more like the ESA’s definition would give the agencies more control over existing and future sea turtle takes. Currently, the MTPA instructs that the DEP “give special consideration to beach preservation and beach nourishment projects that restore habitat of endangered marine turtle species.”¹²¹ Based on this wording, it is not far-fetched that the Florida legislature can also instruct the DEP to give special consideration for other things, like climate change. The DEP could be instructed to give special

¹¹⁹*Marine Turtle Protection Act*, FLA. STAT. § 379.2431(1)(i) (2023).

¹²⁰ *Id.*

¹²¹ *Id.*

consideration to climate change when handling permitting that affects marine turtles, state actions that may affect them, or individual activities that could worsen the already dire situation. However, unfortunately, there is only so much the state statutes can do as federal regulations are so fundamental in the protection and funding of endangered species. Therefore, federal change is still necessary and using state statutes as gap fillers for the failures of federal regulations is ultimately no more effective than a band-aid on a bullet hole.

VI. CONCLUSION

If the proposed changes to the ESA and Florida statute were implemented, Florida's sea turtles would have a better fighting chance of adapting to and mitigating the effects of climate change. If Congress included climate change as the sixth factor in 16 U.S.C. § 1533(b)(1)(A), then the Loggerhead and the Green Sea Turtle would be afforded the same level of protection as the other three sea turtle species. If the MTPA were revised to give more power to the FWC and the DEP to regulate the habitat of sea turtles outside of individual takes and beach renourishment projects, Florida would be able to work together with the federal government to ensure that the sea turtles successfully adapt to or are protected from climate change.

While sea turtles have existed for millions of years and have successfully lived through huge changes in the earth's climate, these changes in the coastal development and the unprecedented speed at which the climate is changing are not like what they have endured in the past.¹²² Current legal remedies for climate-threatened species, like Florida's five sea turtles, are insufficient in their current form, in their implementation, and in their ability to be influenced by politics. To solve these issues, Congress needs to step in and ensure that climate change will be a definite factor in every Secretary consideration for listing species.

¹²² Bill Wellock, *Coastal Development, Changing Climate Threaten Sea Turtle Nesting Habitat*, FSU NEWS (Aug. 25, 2020, 3:38 PM), <https://news.fsu.edu/news/science-technology/2020/08/25/coastal-development-changing-climate-threaten-sea-turtle-nesting-habitat/>.

Additionally, the ESA needs to have an overhaul of the way it allocates funding to listed species so that 62% of the funding never goes to a mere 10% of the species again. These changes would provide more accountability of the agencies and the Secretaries to the way they are using taxpayer money, ensure future protection for the climate-threatened species, and put a stop to the uneven enforcement of the ESA. The Florida legislature also needs to step up and allow the agencies, like FWC and DEP, to have more control and more enforcement capabilities to ensure the future survival of the five sea turtle species. The current absence of climate change or the ability to mitigate climate change in statute and therefore, the inability of Florida's agencies to act, needs to be addressed and remedied before Florida's sea turtles go extinct.