Brad D. De Noble
De Noble Law Offices LLC
11517 Old Glenn Hwy, Suite 202
Eagle River, Alaska 99577
(907) 694-4345

Andrew L. Welle
Attorney at Law
1216 Lincoln Street
Eugene, Oregon 97401
(574) 315-5565

Attorneys for Plaintiffs

IN THE SUPERIOR COURT FOR THE STATE OF ALASKA
THIRD JUDICIAL DISTRICT AT ANCHORAGE

ESAU SINNOK; LINNEA L., a minor, by and through her guardian, HANK LENTFER; TASHA ELIZARDE; CADE TERADA; KAYTLYN K., a minor, by and through her guardian, MAURICE KELLY; BRIAN CONWELL; JODE S., a minor, by and through his guardian, CONNIE SPARKS; MARGARET KURLAND; LEXINE D., a minor, by and through her guardian, BERNADETTE DEMIENTIEFF ELIZABETH B., a minor, by and through her guardian, ILONA BESSENYEY; VANESSA D., a minor, by and through her Guardian, JULEE DUHRSEN; ANANDA ROSE AHTAHKEE L., a minor, by and Through her guardian, GLEN "DUNE" LANKARD; GRIFFIN PLUSH; CECILY S. and Lila S., minors, by and through their guardians, MIRANDA WEISS and BOB SHAVELSON; and SUMMER S., a minor a minor, by and through her guardian, MELANIE SAGOONICK

Plaintiffs,

v.

STATE OF ALASKA; WILLIAM WALKER, Governor of the

State of Alaska, in his official capacity;)
ALASKA DEPARTMENT OF)
ENVIRONMENTAL CONSERVATION;)
LAWRENCE HARTIG, Commissioner)
of Alaska Department of Environmental)
Conservation, in his official capacity;)
ALASKA DEPARTMENT OF NATURAL)
RESOURCES; ALASKA OIL AND GAS)
CONSERVATION COMMISSION;)
ALASKA ENERGY AUTHORITY; and)
REGULATORY COMMISSION OF)
ALASKA)
)
Defendants.)
_____) Case No. 3AN-17-_____ CI

COMPLAINT FOR DECLARATORY AND EQUITABLE RELIEF

Plaintiffs, by and through their counsel, hereby seek declaratory and equitable relief against Defendants State of Alaska; William Walker, Governor of State of Alaska, in his official capacity; Alaska Department of Environmental Conservation ("DEC"); Lawrence Hartig, Commissioner of DEC, in his official capacity; Alaska Department of Natural Resources ("DNR"); Alaska Oil and Gas Conservation Commission ("AOGCC"); Alaska Energy Authority ("AEA"); and Regulatory Commission of Alaska ("RCA") (together, with DEC, DNR, AOGCC, and AEA, "Agency Defendants") for violations of Plaintiffs' due process, equal protection, and Public Trust rights under the Alaska Constitution arising from Defendants' knowing, historic, and ongoing causation of and contributions to the current climate crisis, and the abrogation of their duty to protect the atmosphere, climate system, waters, atmosphere, fish, wildlife and other crucial natural resources from the effects of greenhouse gas pollution and secure a future for Plaintiffs and Alaska's children. For their complaint, Plaintiffs allege as follows:

NATURE OF THE CASE

1. Esau Sinnok, Linnea L., Tasha Elizarde, Cade Terada, Kaytlyn K., Brian Conwell, Jode S., Margaret Kurland, Bernadette D., Elizabeth B., Vanessa D., Ananda Rose Ahtahkee L., Griffin Plush, Cecily S., Lila S., and Summer S., many of whom are minor children bringing this case through their respective guardians (collectively "Youth Plaintiffs" or "Plaintiffs"), hereby ask this Court to enforce Alaska's constitutional obligations to protect their inalienable and fundamental constitutional rights to life, liberty, property, equal protection, public trust resources, and a stable climate system that sustains human life and liberty. Youth Plaintiffs bring this case pursuant to AS 22.10.020, the Alaska Declaratory Judgment Act, and the Alaska Constitution.

2. Youth Plaintiffs depend on vital natural resources to exercise their inherent rights; these vital natural resources are and will continue to be adversely impacted by excessive human–caused emissions of carbon dioxide ("CO_2"). As a result of human-caused CO_2 emissions, global atmospheric CO_2 concentrations now exceed 403 parts per million ("ppm"), destabilizing our climate system, and have reached recent annual peak concentrations exceeding 410 ppm, as compared to the stable pre-industrial levels of 280 ppm.

3. Pollution of CO_2 and other greenhouse gases (collectively, "GHGs") is causing dangerously increasing temperatures, changing precipitation patterns, rising seas and storm surge flooding, thawing permafrost, increasing droughts and violent storms, ocean acidification and warming, coastal erosion, freshwater degradation, increased wildfires, resource and species extinctions, increased pestilence with resultant diseases and other adverse health risks, and other adverse impacts (collectively, "Climate Change

Impacts"), all of which threaten the habitability of Alaska and the safety and wellbeing of these Youth Plaintiffs.

4. All of Alaska's Public Trust resources, including, without limitation, waters (surface, subsurface, and atmospheric), fish, and wildlife, air (atmosphere), the climate system, the sea and the shores of the sea, submerged and submersible lands, beaches, forests, and tundra (each individually a "Public Trust Resource," and collectively "Public Trust Resources"), and correlative public uses to such resources, including, without limitation, public access, fishing, and navigation, are essential for Youth Plaintiffs' rights to life, liberty, and property.

5. Youth Plaintiffs and their families are currently, and will increasingly be, harmed and suffer injuries from Climate Change Impacts to Alaska's Public Trust Resources.

6. Defendants have longstanding knowledge of the perils that GHG emissions and climate change pose to Youth Plaintiffs' safety. Notwithstanding that knowledge, and extended opportunities spanning decades to mitigate Alaska's contribution to the climate crisis, Defendants have persisted in a systemic course of conduct with respect to CO_2 and GHG emissions that has caused and contributed to dangerous concentrations of GHGs in the atmosphere. Defendants have failed to use their authority to mitigate Alaska's GHG emissions and safeguard Plaintiffs' fundamental and inalienable rights.

7. By and through their affirmative aggregate and systemic actions with respect to fossil fuels, CO_2 and GHG emissions, Defendants have demonstrated that their policy, practice, and custom with respect to climate change in Alaska (hereinafter

"Defendants' Climate and Energy Policy" or "Climate and Energy Policy"), consists of: 1) systemic authorization, permitting, encouragement, and facilitation of activities resulting in dangerous levels of GHG emissions, without regard to Climate Change Impacts or any climate change mitigation standards, and 2) perpetual denial and delay of development of climate change mitigation standards, plans, and actions. By and through their Climate and Energy Policy, as evidenced by and effectuated through their affirmative aggregate and systemic actions, Defendants have materially caused and contributed to, and continue to materially cause and contribute to climate change and Climate Change Impacts.

8. Defendants have constitutional duties to refrain from actions which violate the fundamental and inalienable rights of Youth Plaintiffs by materially causing, contributing to, and exacerbating climate change and Climate Change Impacts. Defendants also have constitutional duties, affirmed by statute, to protect Youth Plaintiffs from climate change and Climate Change Impacts.

9. Defendants have the constitutional and delegated authority and obligation to reduce the State of Alaska's GHG emissions at least in line with global average reductions necessary to avert the worst Climate Change Impacts and preserve Youth Plaintiffs' fundamental and inalienable constitutional and Public Trust Rights. Despite longstanding knowledge of the dangers of GHG pollution, Defendants have failed to implement their authority in such a manner, instead actively infringing Youth Plaintiffs' fundamental rights by and through the continued implementation of their Climate and Energy Policy.

10. Plaintiffs bring this suit to enforce sections 1, 7, and 21 of Article I of the Alaska Constitution and Article VIII of the Alaska Constitution.

JURISDICTION AND VENUE

11. The Court has subject matter jurisdiction over Counts 1 through 4 under AS 22.10.020.

12. The Court has subject matter jurisdiction over Count 5 under AS 22.10.020 and pursuant to *Johns v. Commercial Fisheries Entry Commission*, 699 P.2d 334 (Alaska 1985).

13. Venue is proper in this Court under Civil Rule 3 and AS 22.10.030.

PLAINTIFFS

14. Plaintiff **Qaġġiġluilaq**, given name **Esau Sinnok,** is Iñupiaq Eskimo from the island of Shishmaref, Alaska. Esau is nineteen years old and has dedicated much of his life to climate advocacy. He has been an Arctic Youth Ambassador, attended national and international climate conferences including COP 21, and has worked closely with Alaska Youth for Environmental Action. Esau currently attends the University of Alaska, Fairbanks, where he is pursuing degrees in tribal management and Alaska Native studies. Esau hopes to use his degrees to further advocate for Shishmaref as a state representative.

15. Climate change is already harming, and threatens the very existence of Esau's home village and native culture. Esau's people have inhabited the lands on and around the island of Shishmaref for over 4,000 years. However, as a result of climate change the land on which Shishmaref sits is eroding into the ocean. Sea ice around Shishmaref has historically been a buffer against storms, storm surges, and flooding. However, climate change is resulting in loss of sea ice around Esau's village. Sea ice is

forming later and melting earlier in the season and is not as abundant or thick as it was before climate change. Combined with climate change induced sea level rise, more frequent and intense storm surges and floods are eroding the island of Shishmaref and contributing to the accelerating thaw of the permafrost underlying the community. The erosion, storms, and flooding is particularly bad in the fall, and is getting worse every year. Three to four meters of land is lost from Shishmaref to the sea every year. The village's homes and infrastructure are threatened by this erosion, which has taken as much as 15 meters of land overnight in a single storm. Already, 19 homes have had to be relocated away from the eroding coastline to other parts of the island. Esau's home is in the middle of the less than one-mile-wide island and his grandparent's home, where he grew up and often visits, is directly on the coast. During a large storm in 2004, Esau had to help evacuate his grandparents and all of their things from their home because ocean waves were slamming against the house. Each storm erodes the banks of the island and exposes more permafrost, which then thaws more quickly and accelerates further erosion. Because of this increasingly urgent situation, Shishmaref needs to relocate the village entirely. The community has voted to relocate to safer ground three times, most recently in 2016. However, Shishmaref does not have the resources to fund relocation. As climate impacts worsen, Esau's home will also become uninhabitable.

16. Ninety percent of Esau's Shishmaref diet comes from the land and sea. Esau's diet is based on traditional food sources including: blueberries, salmonberries, blackberries, caribou, moose, seal, ugruk (bearded seal), walrus, salmon, tomcod, whitefish, smelts, grayling, geese, duck, and ptarmigan. Esau has participated in traditional subsistence activities throughout his entire life, but climate change is making

traditional subsistence activities more difficult and dangerous. The Chukchi Sea ice around Shishmaref provides a platform for Esau's traditional hunting practices. Climate change is dramatically reducing the extent of arctic sea ice. Each winter season the sea ice is less extensive and is thinner than it used to be. Sea ice is forming later and melting earlier in the season than it did before climate change. The 2016-17 winter had a record low seasonal maximum sea ice extent. The ice used to freeze completely in October and be safe to travel on. But now the ice does not become solidly frozen enough to be safe to walk on until much later in the winter. Even then, the sea ice undergoes freeze and thaw cycles that make it dangerous for travel. Reduced sea ice harms Esau's and his family's ability to go out and access their winter food sources. Last winter, the sea ice was not solidly frozen enough to safely walk on until late January. Esau and his family lost months of hunting time as a result, harming their food supply. Tragically, Esau's uncle passed away when he fell through thin sea ice. He was hunting for geese and duck in an area where the ice was historically thick and safe for travel at that time of year.

17. Increasingly severe and frequent storms make hunting more dangerous and difficult. One year, high winds and flooding resulted in Esau's family's meat racks being blown into the sea. Fall flooding is occurring more frequently and getting worse in Shishmaref each year. The high waters and dangerous conditions make it difficult for Esau and his community to obtain moose and seal.

18. Esau and his family rely upon snow for travel during the wintertime. With warming temperatures and changing precipitation patterns, snow has become less abundant. Snow comes later to Shishmaref, melts earlier, and increasingly falls as rain. This makes travel for hunting and recreation difficult, harming Esau's subsistence

activities and diet. For instance, without adequate snow cover, Esau cannot use a snow machine to leave the village to hunt caribou.

19. Most residents in Shishmaref have no running water. In the wintertime Esau and his family rely on adequate snow cover to be able to travel by snow machine the five or six miles to the pond where they gather ice to thaw for drinking water. As the climate warms and snow cover is reduced, it is increasingly difficult to make the trip. The pond also does not freeze over as much as it used to, allowing surrounding debris to contaminate the ice and water and harming Esau's freshwater supply.

20. Climate change is having negative effects on the species that compose Esau's subsistence diet and his family's ability to safely store them in traditional ways. Species like walrus and seals depend on the sea ice and are threatened and harmed by sea ice reductions. Warmer winters with less snow cover on the tundra lead to smaller berries that bloom earlier in the season than they used to. Warmer winters with more precipitation falling as rain lead to a thick ice crust on the snow surface. This makes it difficult for caribou to access their food on the tundra. In 2014, a particularly icy winter, the caribou around Shishmaref were unable to dig through the ice to access their food. The animals were skinnier than usual and provided less meat. Esau's family is no longer able to safely store the food that they harvest in traditional underground ice cellars. Warming temperatures and permafrost melt are flooding ice cellars and endangering stored food supplies, which harms Esau's food security.

21. Esau is harmed by increased wildfires in Alaska. Esau began traveling to Fairbanks for school in 2010, and since that time, he has noticed an increase in the intensity and duration of the wildfire season. During the record-setting fire season of

2015, Esau had to wear a mask over his nose and mouth to filter the air, because the wildfire smoke made the air quality dangerous to human health. Esau enjoys hiking, rock climbing, biking, and spending time outside in Fairbanks, but he has often been unable to participate in these activities in the summers because of smoke from wildfires reducing air quality.

22. Climate change gravely threatens Esau's native traditions, heritage, and culture. Esau's Iñupiaq culture is intimately connected to the lands and waters around Shishmaref: it is deeply place-based. Since time immemorial, elders have passed down traditional knowledge of the weather, lands, waters, and animals around Shishmaref. Climate change threatens that cultural transmission because traditional knowledge and understanding no longer align with changing weather, ice, and animal migration patterns. Forced to relocate, Esau and his community will not be able to teach the next generation the means and methods of subsistence practices in their ancestral lands and waters. Without the resources necessary to relocate the village, Shishmaref could be forced to disband and Esau's traditions and culture could be lost in their current form. The language of the village, its unique carving and sewing practices, and the stories and traditions of Shishmaref could be forgotten.

23. The effects that climate change is having on Esau are a source of anxiety, stress and loss to him. Esau worries about the ways that climate change will continue to affect the plants and animals of his homeland in the future and he fears for the future of the cultural knowledge, history, and traditions, and existence of Shishmaref.

24. Plaintiff **Linnea L.**, by and through her guardian Hank Lentfer, is 14 years old and has lived in Gustavus, Alaska all of her life. Linnea's identity and community are

built on the rugged beauty and rich ecosystem surrounding her, which is increasingly endangered by climate change. Linnea's health and that of the biological and human communities in Alaska are increasingly put at risk by Defendants.

25. Linnea relies upon the wild flora and fauna of Southeast Alaska for subsistence. Approximately 60% of Linnea's family's diet comes from hunting, fishing, and their garden. Among the numerous species that make up her family's subsistence diet are deer, moose, coho and sockeye salmon, halibut, black cod, berries, and many others. The warming and acidification of ocean waters harms the ecosystems and aquatic species Linnea relies on. Warming oceans and freshwaters result in changes to salmon migration patterns and timing. Changing precipitation patterns, increased rain, and increased glacial and snowmelt also endanger salmon with increased stream turbidity and runoff. The warming oceans also increases harmful algal blooms, which contaminate shellfish, among many other negative ecosystem impacts. Ocean acidification harms phytoplankton and zooplankton at the bottom of the food chain, all the way up the food chain through crab, shellfish, and salmon, to whales and other marine mammals at the top. Climate change also threatens the game species that Linnea relies on by increasing risk of exposure to parasites and vector borne diseases and through changes in vegetation, affecting the availability of the game's food, resulting in changing habitat range. Absent science-based action to address climate change, Linnea could lose access to, and availability of, the species that sustain her diet.

26. Linnea enjoys observing all of the species that make up the rich and unique ecosystem of Southeast Alaska in their natural habitats. Whales are particularly important to Linnea and she enjoys spending time in the boat observing Humpback

whales, which are becoming increasingly difficult to find. Warming waters impact whales' migration patterns, timing, habitat ranges, and food sources. As climate change has progressed, whales have increasingly been found in abnormal locations, or hard to find at all in Linnea's region. Linnea also enjoys birds, like Murres, which are also harmed by climate change. Last year, Alaska experienced the largest die-off of Murres in the state's history, as the warming of ocean waters from climate change affected the abundance, location, and competition for the Murres' prey.

27. Linnea also enjoys recreating in the outdoors. She loves to visit nearby Glacier Bay National Park at least once per year. She is saddened, and her recreational experience harmed, by the retreat of the glaciers around her, accelerated rapidly by climate change. The glaciated area used to extend all the way into Icy Strait, but glaciers now only occur in the northern reaches of the park and nearly all of the glaciers are retreating. In the last few years, one of the nearby tidewater glaciers, which Linnea enjoyed, which used to calve into the ocean, has retreated so far that it is no longer a tidewater glacier. Linnea enjoys boating close to these tidewater glaciers and walking on the icepack, and hopes to continue to do so throughout her life and with her own family one day. She is saddened that, as she continues to visit Glacier Bay in the future, she will not be able to have the same experiences there as she does today, and that, absent science-based action, the glaciers may disappear entirely. The loss of glacier tourism will greatly harm Linnea, her local community, and its economy.

28. Linnea also enjoys skiing in the winter, but with the warming climate, is able to ski less and less. Three of the past four winters, Linnea has barely been able to go skiing at all.

29. Linnea is emotionally harmed by the losses she has already experienced from climate change and has anxiety and fears that climate change is only going to worsen without government action.

30. Plaintiff **Tasha Elizarde** is an 18-year-old resident of Juneau, where she was born and raised. Tasha is alarmed and saddened as she sees the ecological health and beauty of Alaska diminishing because of climate change. She worries that, absent science-based action, her community, and Alaska generally, will continue to be harmed by climate change and that these changes may be irreversible. Tasha's passion for protecting Alaska's communities and pristine landscape and ecology from climate change inspired her to join Alaska Youth for Environmental Action in 2016 and to work to stop the Chuitna Coal Mine.

31. Tasha is an avid artist. She enjoys writing and photography and draws her inspiration from the rich ecology and natural beauty surrounding her community. Much of that inspiration, and Tasha's enjoyment of nature, comes from her walks and hikes in the natural areas surrounding Juneau and from the snow that once typically blanketed the area during the winter. Tasha has watched as snow has all but disappeared from Juneau's winters - arriving later and melting earlier - and as snow has been increasingly replaced by far more rain than was previously typical for the region. The situation has gotten so bad that nearby Eagle Crest Ski Area was barely open to skiers at all during the winter of 2015/2016 due to lack of snow. Tasha is greatly concerned about the negative impact that unabated climate change is having on the natural areas from which she draws her inspiration. She refuses to merely watch as the beauty of Juneau deteriorates while her government continues to cause and contribute to the climate crisis.

32. Tasha particularly enjoys the glaciers surrounding Juneau. For many years, she has enjoyed hiking on the East Glacier Loop overlooking Mendenhall Glacier. Tasha is harmed by watching Mendendhall Glacier retreat farther and farther every single year as climate change continues unabated. Tasha will suffer the permanent loss of the Mendenhall Glacier in her lifetime, forever changing one of her favorite places, if climate change is not abated.

33. Tasha's diet consists in large part of the bounty of the seas surrounding Juneau, which several of her family members, and much of the Juneau community, relies on as commercial fisherpeople. As with the other Youth Plaintiffs, Tasha is harmed by the drastic decreases in the amount of salmon, crab, shrimp, and other seafood species available to Tasha and to Juneau's commercial fishermen. She can hardly find fresh crab at all anymore. The availability of her local food sources will be increasingly harmed by climate change and ocean acidification.

34. Youth Plaintiff **Cade Terada**, is a 19-year-old resident of Dutch Harbor, Alaska. Cade attends college in Vermont but returns to Dutch Harbor during breaks and will be returning to Alaska after college to pursue a career. Cade is deeply connected to the ocean that surrounds his hometown, and he relies upon it for food. Cade has presented at conferences across the nation to advocate for governmental action to address climate change and other environmental issues. He is an Arctic Youth Ambassador, a program partnered by the U.S. Fish and Wildlife Service, the U.S. State Department, and Alaska Geographic. Cade is active within the State of Alaska through Alaska Youth for Environmental Action, and is the arctic representative for One More Generation, an organization dedicated to protecting endangered species.

35. Cade relies on the ocean for sustenance. Sixty to seventy percent of his diet in Dutch Harbor comes from the sea and both of Cade's parents work in the fishing industry. Cade eats dungeness, king, and tanner crabs, halibut, cod, salmon, clams, and mussels, and other marine species. Ocean acidification and warming is occurring in the waters around Dutch Harbor, harming the marine species on which Cade and his community rely. Ocean acidification has already led to crab shortages in Dutch Harbor. The impacts of ocean acidification to organisms at the bottom of the food chain causes rippling domino effects throughout the ecosystem because these organisms feed the salmon, herring, Pollack, and other species that Cade and his family and the Dutch Harbor community rely upon for subsistence and commercial fishing.

36. Cade grew up digging clams and mussels with his mother, but his ability to safely harvest and eat shellfish is threatened by climate change. Warming ocean temperatures creates favorable water condition for dinoflagellate algae, which contaminate shellfish. Consuming shellfish contaminated by dinoflagellate algae can result in paralytic shellfish poisoning ("PSP"), a serious illness that can be fatal to humans. Currently, the Alaska Division of Public Health strongly recommends against eating any non-commercially caught shellfish in Alaska. Because of the increased risk of PSP that has come with warmer waters, Cade and his mother do not dig for clams like they used to. Fears about harvesting contaminated subsistence foods prevent Cade and other members of his community from eating mussels, which used to be a staple of their diet.

37. As climate change has progressed, Dutch Harbor is seeing more rain storm events and high winds are increasing in frequency and severity. The additional rain has

led to flooding on paths Cade uses to travel in his community and where he enjoys hiking. The increased frequency and severity of storm events makes travel in and out of Dutch Harbor more difficult, often grounding flights.

38. Youth Plaintiff **Kaytlyn K**., by and through her father and guardian Maurice Kelly is a seventeen-year-old resident of Palmer, Alaska. Kaytlyn is already being harmed by climate change in Alaska in ways similar to her fellow Plaintiffs. Kaytlyn is a member of Alaska Youth for Environmental Action.

39. Kaytlyn and her family subsistence fish in the summer for sea bass, halibut, cod, sockeye and coho salmon. As a result of climate change, warming temperatures and ocean acidification threaten the species Kaytlyn and her family rely on. When she goes fishing, it is more difficult to there are often fewer fish than there used to be, and the fish she catches are smaller.

40. Kaytlyn has asthma, which has been aggravated in recent years by the wildfires that are made more frequent and severe in Alaska. Warmer temperatures and spruce beetle infestations have caused an increase in forest fires in Kaytlyn's region and in other areas of Alaska where she visits. In 2016, when Kaytlyn was fishing near Chitna, smoke from wildfires triggered her asthma, making it difficult for her to breathe.

41. Kaytlyn enjoys hiking and skiing. Hatcher's Pass is a special place for Kaytlyn, as she grew up spending time there with her family. Recently, it has become harder to hike here because the permafrost is melting, causing the ground to become sunken and mushy. Kaytlyn has noticed that warmer temperatures have impacted the vegetation at Hatcher's Pass which seem drier and less verdant than it used to be. The biggest difference she has noticed at Hatcher's Pass is a decrease in winter snowfall. As a

result, it is more difficult to go cross-country and backcountry skiing there than it was when Kaytlyn was younger and Kaytlyn is able to participate in those activities far less often at Hatcher's Pass.

42. . Kaytlyn enjoys skiing at her local ski area, which used to open for the season by Thanksgiving weekend. Now, because of warming temperatures, the ski area often doesn't open until well into December. Because of decreased snow, and increasing rain, fewer of the runs that used to be open frequently are accessible to Kaytlyn. Some of the runs that used to be open every year when she was younger haven't been open for two to three seasons because of lack of snow. The increased rain also reduces the quality of the snow for Kaytlyn to ski on, harming her recreational interests.

43. Kaytlyn experiences fear and anxiety when she considers the Climate Change Impacts she is experiencing already and thinks of what the future brings. She knows that ocean warming and acidification threaten species that are the cornerstone of Alaskan diets, including salmon and fears for the repercussions to Alaskan communities and families, including her own. Kaylyn is scared when she considers that because of climate change there may no longer be snow where she lives in the future.

44. Plaintiff **Brian Conwell** is an 18-year-old, lifelong resident of Dutch Harbor, Alaska. Brian is experiencing many of the same harms from Climate Change as his fellow plaintiffs. He founded the local Alaska Youth for Environmental Action chapter and has lobbied the state legislature in Juneau to take action on climate change. Brian travels throughout the state for school trips, and sees how climate change is affecting all corners of Alaska. He believes that climate change is an opportunity for his generation to step up and become leaders.

45. Climate change is threatening the cultural and economic cornerstone of Brian's community: ocean fisheries. Brian relies on this fishery for subsistence. He regularly eats crab, salmon, halibut, and cod. His ability to rely on the ocean for sustenance is harmed by climate change.

46. Changing winter precipitation patterns are negatively impacting Brian's interests in recreation and community-service. Brian remembers getting consistent snow storms when he was younger, but now, precipitation that used to fall as snow, falls as rain and the snowy season isn't as long. The snow is slushier than it used to be because the rain, combined with warmer air temperatures, causes existing snow to melt and partially refreeze. Sledding is one of Brian's favorite hobbies. He used to go sledding frequently on the weekends, but with less snow, he is unable to sled nearly as much. For community service, Brian and his basketball team shovel snow from neighbors' driveways, but they are able to help their community members less and less in this way now because there is less snow.

47. Rising ocean temperatures and ocean acidification are putting pressure on the marine ecosystem and making it harder for fish and other marine species to survive. Brian fears that his community may not be able to survive if climate change destroys the marine fisheries on which Dutch Harbor relies.

48. Plaintiff **Jode S.**, by and through his guardian and mother Connie Sparks, is a seventeen-year-old resident of Sterling, Alaska. Jode lives on the edge of the Kenai National Wildlife Refuge. Jode is a member of Alaska Youth for Environmental Action and was involved with Kenai Change, a campaign to address climate change on the Kenai Peninsula.

49. Warmer temperatures are harming the ecology of the forests around Jode's home where Jode enjoys hiking and spending time, harming Jode. Spruce beetles are now able to survive through the winter and are increasing on the Kenai Peninsula. The higher summer temperatures allow more Spruce Bark Beetles to hatch and infest trees. This has caused the destruction of more than one million mature spruce trees on the Kenai Peninsula.

50. Climate change has also led to an increase in severity and frequency of wildfires in Jode's area, threatening Jode's family's home. In the past few years, several fires, including the Funny River Fire in 2014, have burned thousands of acres on the Kenai Peninsula. There have even been fire warnings issued in the month of January in Jode's area. This past summer, a wildfire burned in the Kenai National Wildlife Refuge, which is adjacent to Jode's house. All of the trees along his family's property line were recently cut down to create a fire line to protect their home.

51. Jode is harmed by decreased snowfall due to climate change. Jode and his family used to run dog-teams in the winter, but their season became shorter and shorter each year with later snows, earlier melts, and increasing rain. As a result, Jode's family no longer run-sled dogs. When Jode was younger, there would be snow at Halloween, but now the snow doesn't begin to stick to the ground until late November. This harms Jode's ability to ski with his ski-team. His team used to always practice on the Tsalteshi Trails near Sterling, but for the last two years they have had to drive up to four hours to find snow to practice on. Two of the last three winters, there was not enough natural snow, so he had to ski on artificial snow for the biggest ski competition of the year.

52. Jode is also harmed by climate change because it causes him emotional distress, fear, and anxiety. Whenever there is a fire nearby, which is an increasingly frequent occurrence, Jode worries that his home will be destroyed. Jode visited the glaciers in Portage and Seward when he was younger but he worries that it would be too emotionally jarring to see how far they have receded today. When he thinks about climate change, Jode experiences anxiety because he knows that the crisis is getting worse and that his government is not addressing the problem.

53. Plaintiff **Margaret "Sebastian" or "Seb" Kurland** is eighteen years old and lives in Juneau, Alaska where they have lived since they were three. Seb identifies as transgender, nonbinary and prefers the pronoun "they" and its derivations. Seb is a member of Alaska Youth for Environmental Action, has been a Girl Scout for twelve years, and has undertaken and completed numerous school projects on ecosystem climate change. Seb eats a vegan diet because sustainability and animal welfare are important to them. Seb is harmed by climate change in many of the same ways as their fellow Youth Plaintiffs.

54. Seb loves to hike the West Glacier Trail, which is close to their home, to Mendenhall Glacier, but climate change is diminishing Seb's enjoyment of both the trail and the glacier. Mendenhall Glacier has receded drastically in Seb's lifetime because of climate change. Warming temperatures and changing precipitation patterns from climate change have led to dramatically increased fall and winter rainfall that has eroded the West Glacier Trail. Warming temperatures melting Mendenhall Glacier have led to increasingly frequent jökulhlaups, glacial outburst floods, that drastically increase water

levels in Mendenhall Lake and Mendenhall River, causing flooding and erosion that is harming the forests on the lake's edge.

55. Seb enjoys skiing but their ability to go skiing has been harmed because of the terribly reduced snowfall in Seb's region over the last several winters. Climate change has resulted in reduced snowfall and increased rain in their region so that proper skiing conditions are becoming increasingly rare. Juneau's winters are becoming more and more difficult to recognize because of lack of snow. Climate change has made avalanches and mudslides more common and probable, resulting in danger to skiers and hikers, including Seb.

56. Seb experiences sadness and anxiety when they consider the harms that climate change is doing to the ecosystems, wildlife, and places about which Seb cares deeply. In the future, Seb would like to show their own family all of the amazing places in Alaska that Seb cherishes and grew up in, but is deeply worried that they won't be able to share those things because they will have been destroyed or altered by climate change. Seb is shocked and distressed that their government is more focused on the immediate revenue that fossil fuel extraction produces than on the long-term future of the state and its population.

57. Plaintiff Lexine D., by and through her guardian and mother, Bernadette Demientieff, is nine years old. Lexine is Gwich'in, from Fort Yukon, and lives in Fairbanks. Lexine is experiencing many of the same harms from Climate Change Impacts as her fellow plaintiffs, including harms to her native culture and traditions.

58. Plaintiff **Elizabeth "Liszka" B.,** by and through her guardian and mother Ilona Bessenyey, is a 17-year-old resident of Anchorage, Alaska. Liszka enjoys visiting

Alaska's wilderness and pristine natural areas, including the Arctic National Wildlife Refuge (the "Refuge") and the Chugach National Forest, and is passionate about their protection. Liszka is harmed by climate change because, absent meaningful action, the wild places she loves will be irreversibly damaged.

59. Liszka first visited the Refuge for a camping trip while she was in fifth grade and the experience ignited her passion for protecting Alaska's wild places. Liszka wrote a letter, and gathered supporting signatures, asking the U.S. Fish & Wildlife Service to protect the Refuge. Liszka has twice attended the Alaska Wilderness League's Wilderness Week in Washington D.C. to advocate for formal protection of the Refuge and in 2016 she shared her Refuge experiences with 700 Alaskans during the "Arctic Entries" storytelling event and encouraged others to become involved in protecting Alaska's wild places. Liszka plans to return to the Refuge but is saddened that her future visits will be drastically different from the trip that first inspired her, as the Refuge and the species that reside there are increasingly harmed by climate change. She greatly hopes to see a polar bear in its offshore, natural environment in her lifetime but worries that the increasing loss of polar bear habitat due to climate change will prevent her from doing so.

60. Liszka also cares deeply about Chugach State Park, near Anchorage, where she recreates often, cross-country and alpine skiing, hiking, rafting, paddle-boarding, running, and biking. Liszka is harmed by the changes in the Park ecosystem she has observed as climate change has progressed. Glaciers in Chugach State Park that Liszka frequents are rapidly receding due to climate change, including Eklutna Glacier, Portage Glacier, Knik Glacier, and Spencer Glacier. Liszka often goes rafting on Portage Lake, but each time she sees that Portage Glacier has receded more. Each time there are

more icebergs in the water that have calved from the glacier. This makes traversing the lake more challenging.

61. Liszka has also noticed a change in vegetation in Chugach State Park, including an increase of alders at higher elevations and in places that they were not found before. She has experienced an increase in wildfires in her area as climate change progresses and the forests where she recreates are threatened with increased outbreak of pests like spruce bark beetle.

62. Cross-country and alpine skiing are important to Liszka's health and well-being, but the warmer temperatures, lack of snow, and increased rain resulting from climate change in recent years has reduced her ability to participate in these healthy activities. Local ski resorts are opening later and closing earlier in the year due to climate change. When she was younger, the first lasting snowfall would come before Halloween. In recent years, while the cross-country training season still begins in early November, due to late and minimal snowfalls, Liszka has not been able to train on snow until early December. Liszka and her teammates have to run on asphalt to train or take a bus to a location that makes man-made snow. Increasingly early snowmelt also shortens Liszka's cross-country and alpine skiing seasons.

63. Late and reduced snowfall leads to icier conditions in Anchorage. Ice, from warmer temperatures and freezing rain, makes the roadways hazardous and results in lost school days for Liszka and other students in her area.

64. Plaintiff **Vanessa D.,** by and through her guardian and mother Julee Duhrsen, is seventeen years old and lives in Anchorage, Alaska. Vanessa is of Chippewa-

Cree descent and enrolled member of the Rocky Boy Tribe of Montana. She is also active as a member of the Citizens Climate Lobby and Alaska Youth for Environmental Action.

65. As an avid skier, Vanessa's recreational interests are being harmed by climate change. She lives a healthy and active life and loves to downhill, backcountry, and cross-country ski in the wintertime, but because of climate change, reduced snowfall and increased rain prevent her from skiing as much as she was previously able to. Additionally, the effects of climate change decrease the quality of snow that she is able to find, and increased temperature variations increase the risk of avalanches, making these activities less safe. Historically, Vanessa and her family used to ski at Alyeska Resort at Thanksgiving, but now there is frequently not enough snow for the resort to be open before December. Vanessa loves to go Nordic skiing at Kincaid Park but reduced snowfall has prevented her from accessing much of the park that is accessible on skis with normal snowfall. She used to be able to ski throughout the over 100 kilometers of trails in Anchorage, but two seasons ago, because of reduced snow, she had to use a manmade three-kilometer loop instead. Because of reduced snow, rocks and sticks poke through the thin snowpack and damage Vanessa's equipment when she skis. Fluctuations in winter temperatures, including warm spells, lead to more dangerous avalanche conditions, endangering Vanessa. Avalanches are more common when warmer temperatures thaw and refreeze layers in the snow, and this makes backcountry skiing more dangerous. As a result, Vanessa does less backcountry skiing than she used to.

66. Vanessa is harmed by the increasingly severe and frequent wildfires resulting from climate change. In 2015, a wildfire near Anchorage destroyed Vanessa's favorite place to hike, just ten miles outside of the city.

67. As a member of the Rocky Boy Tribe, Vanessa has seen the negative impact that loss of homelands has on a culture. The traditional lands of the Rocky Boy Tribe no longer support the traditional way of life of her ancestors due to a loss of wildlife and land. Disconnected from her ancestral lands in Montana, Vanessa sees the culture of Alaska as her own. She fears that, because of climate change, the unique culture of Alaska of which she is a part will disappear in the same way that much of her Native American culture has. Vanessa is distressed that, because climate change is proceeding unabated, if she has a family in the future, she won't be able to share the same Alaskan places and experiences with them.

68. Youth Plaintiff **Ananda Rose Ahtahkee L.**, is seven years old and lives in Anchorage, Alaska. Ananda is represented in this action by her guardian and father, Glen "Dune" Lankard. Ananda is an Alaskan Native and a member of the Eyak Athabaskan Tribe. Ananda is experiencing harms from Climate Change Impacts similar to many of her fellow Youth Plaintiffs, including harms to her native traditions and culture.

69. Ananda and her family and others in the Eyak community have been personally affected by climate change due to erosion from ice melt and flooding from increased temperatures, as well as the forests dying. In the past decade, there have been numerous floods in Alaska and Cordova, Ananda's traditional homelands. These floods, melting glaciers, dying forests and increased temperatures threaten Ananda's village, wild Copper River salmon and other food sources, native traditions, culture, and livelihood.

70. Ananda enjoys dog-sledding as recreation and as part of her cultural heritage and traditions. However, reduced snowfall and snow quality resulting from climate change is harming her ability to participate in dog-sledding.

71. Ananda has seen glaciers receding, decline of wild salmon stocks in the Copper River and Prince William Sound, the loss of salmon habitat and the decline of animals. Alaska's ecosystems, which are being drastically altered and threatened by climate change, are very important to Ananda because they essential to her family's history, traditions and culture.

72. Youth Plaintiff **Griffin Plush** is 20 years old and attends college in Juneau. During breaks, Griffin returns to his hometown, Seward, and works during the summers as an interpretive ranger at nearby Kenai Fjords National Park. Griffin has been an Arctic Youth Ambassador, is a leader in Alaska Youth for Environmental Action, was on the board of the Alaska Center for the Environment, and is interning in the Alaska State Legislature. Griffin sees the impacts of climate change on his community, and others like his throughout the State. Griffin is shocked and distressed at the indifference shown by Defendants to a normal Alaskan kid like himself as he and others try to fight climate change and cope with the impacts that his generation will have to face.

73. The glaciers near Seward are immensely important to Griffin and to the surrounding communities. These glaciers flow from the largest icefield entirely within US borders, the Harding Icefield, and, because of climate change, the vast majority of them are retreating, some at 40-60 feet per year, harming Griffin's enjoyment of the glaciers and ecosystem. As a ranger, Griffin leads groups of visitors along the path of receding glaciers, and educates them about the rapid glacier melt affecting over 90% of

the glaciers in Alaska. Bear Glacier has retreated more than 2 miles in the last fifteen years. Portage Glacier has retreated so far that it is no longer visible from the visitor center built for its viewing. The nearby tidewater glaciers are retreating as well, affecting bird and seal habitat.

74. When Griffin was as young as six, he and his father would hike to the toe of Exit Glacier. It was easy to access the glacier and touch the ice. Since then, the glacier has retreated more than 1,000 feet, and the ice is more difficult to access. As a ranger, Griffin leads tours to Exit Glacier on a 2.5-mile path that begins where the glacier's terminus reached in 1917. Griffin values his memories of spending time at Exit Glacier with his father, who passed away when he was ten. As climate change progresses and Griffin witnesses Exit Glacier retreat, Griffin is harmed because he feels as if that valued memory is disappearing right in front him.

75. Ocean acidification is impacting the marine ecosystems of Resurrection Bay near Seward and throughout the Gulf of Alaska, harming Griffin. Griffin grew up digging razor clams and other shellfish with his family. However, increased ocean acidification is resulting in sharp reductions in razor clam populations. Griffin has been unable to harvest razor clams from his family's favorite spot for the past three years. Local shellfish hatcheries now have to use additives to reduce the acidity of their nursery waters. Griffin fishes for salmon and halibut in the Resurrection River and Resurrection Bay but Alaska's salmon fishery is also being adversely impacted by increasing land and water temperatures and ocean acidification. Decreased snow cover on streams near Seward results in a loss of insulation for salmon eggs with resulting population effects. Salmon returns have been unpredictable over the past several years and ocean

acidification's effects on zooplankton is further adversely impacting Alaskan salmon populations. This unpredictability makes it difficult for Griffin and his friends and community to catch salmon for subsistence and commercial uses.

76. In the summertime, Griffin grows vegetables in his garden, including lettuce, peas, and potatoes. Warmer winter temperatures, followed by sporadic freezing temperatures are harming griffin by making it more difficult to grow produce. Plants may begin to grow earlier in the season, but are then killed by later cold snaps.

77. Griffin suffers from asthma and seasonal allergies. His allergies worsen during warm, dry summers, which are increasing in frequency due to climate change. When Griffin's allergies flare up, it triggers his asthma, and it is difficult for him to breathe. Griffin's asthma is also exacerbated by smoke that blows in to Seward from wildfires on the other side of the Kenai Peninsula, which are increasingly frequent and severe as climate change results in hotter and drier summers and brings destruction to millions of trees through increased spruce beetle populations.

78. Changing precipitation patterns caused by climate change threaten Griffin's safety. Rainfall is increasing in the fall and winter precipitation that used to fall as snow is falling as rain, causing icy and slushy roads and making driving around town, and to Anchorage, dangerous. The increased rain is also creating more frequent and severe flood events in Seward. The Resurrection River, Japanese Creek, and Stoney Creek flood more frequently as a result of increased rain and glacial melt. Residents of Seward are increasingly experiencing flooding in their homes. Road flooding cuts off access to parts of town and to the Seward highway leading out of town. Existing infrastructure was not built to withstand the current increased fall precipitation and

flooding, and both the Japanese Creek and Lowell Creek levies are being threatened by worsened flooding and have been deemed to be at risk of damage with further flooding. If Lowell Creek levy were to be breached in a flood, downtown Seward and the only hospital in Seward would be flooded, as would the airstrip used for airlifting patients to Anchorage, that are required to provide medical care.

79. Warmer winters and hotter, drier summers in Seward and Southeast Alaska are enabling insects, like flies and mosquitos, to thrive and become more numerous. One year the flies were so bad at Exit Glacier that it was difficult for Griffin to be outside without being harassed by them. Ticks are beginning to survive through the winters in Southeast Alaska, increasing in population, and moving farther north. These developments increasingly make hiking and enjoying the forests around Seward less enjoyable and will harm local wildlife that is important to Griffin, like moose.

80. Griffin experiences stress and anxiety because of climate change. He already experiences Climate Change Impacts and worries that further changes may be even more extreme. The negative impacts of climate change and ocean acidification on salmon and other marine species are particularly consequential for Griffin's home community of Seward. A large part of the community has economic ties to the ocean. Griffin worries that ocean warming and acidification will devastate the local economy and community.

81. Youth Plaintiffs **Cecily S.** (age 7) and **Lila S.** (age 5) are siblings who live in Homer, Alaska. They are represented in this action by their guardians and parents Robert Shavelson and Miranda Weiss. Cecily and Lila are harmed by climate change and experiencing Climate Change Impacts in ways similar to their fellow Youth Plaintiffs.

The Earth is important to Cecily and Lila and they want to help protect it. In 2012, Cecily delivered a letter to Governor Walker about climate change.

82. Cecily and Lila enjoy fishing for salmon and halibut and eating all of the bounty of their local seas, including salmon, pacific cod, black cod, crab and shrimp. Cecily's favorite thing to do is to go fishing and Lila particularly likes to fish for salmon and to eat it smoked. They love to go fishing at their friend's fish camp on Chisik Island. They also like to eat crab their family catches in Kachemak Bay. Like their fellow Youth Plaintiffs, the marine species that Cecily and Lila and their family rely on are threatened by warming ocean and stream temperatures and ocean acidification. For example, the Pacific cod population in the Gulf of Alaska has recently crashed. Their family used to dig for clams but they can't find hardshell or razor clams like they used to in Kachemak Bay and Lower Cook Inlet. Warming streams and oceans and ocean acidification threaten the salmon that Cecily and Lila depend on and love to eat.

83. Cecily and Lila love to play in the snow and to go sledding and skiing, but their ability to enjoy these winter activities is being harmed by climate change. There has been less snow during recent winters, so Cecily and Lila have often been unable to go sledding or skiing. Warmer winter temperatures also prevent them from going ice skating on the local lakes. In 2015, they were unable to go ice skating at all because there was not enough ice on the lakes. Cecily and Lila enjoy stomping on ice and visiting glaciers near their home. They enjoy hikes to Grewingk Glacier Lake to see the glacier and play nearby. Climate change is harming their ability to engage in these activities. They love the snow and ice that winter bring.

84. With warming temperatures reducing their abilities to participate in their favorite winter time activities, Lila and Cecily are sad that snow will be more and more rare in their area, absent science-based action on climate change. Lila wants to put a snowman in the freezer so she can have it for later.

85. Youth Plaintiff **Summer S.**, by and through her guardian and mother Melanie Sagoonick, is a 16-year-old, Inupiaq resident of Unalakleet. The Inupiaq culture of Summer's village is tied intimately to the land and local ecology, both of which are increasingly endangered by climate change. Summer's ancestors have inhabited the area for over 2,200 years. Climate change is already harming, and will dangerously threaten, Summer's village, her subsistence lifestyle, and her cultural traditions and heritage.

86. Summer is emotionally and psychologically harmed by losing the native plants and landmarks of her people and her heritage. Learning the subsistence lifestyle and other aspects of Unalakleet's native culture is important for Summer and important for her to pass the traditions and culture along to future generations. As climate change increasingly impacts her village and the environment on which it depends, Summer worries about the harms to her cultural heritage and the village's ability to transmit that culture to her generation and later generations.

87. Unalakleet sits between the ocean and an arm of the Unalakleet River, leaving it vulnerable to flooding events that can trap the village's residents. Sea ice in the region is forming later and thinner and breaking up earlier and faster. Permafrost is thawing, leaving Unalakleet vulnerable to a combination of higher seas and increasing storm events that flood the village and wash away the coast more and more frequently, especially during the fall months. Increased river flooding also occurs because of the

increased rain that Unalakleet receives as a result of climate change. Unalakleet placed a wall of boulders along its coastline and mouth of the river to buffer against erosion, storm surges, and higher ocean levels, but each flooding event pushes the boulders out into the ocean or the river mouth and more land is washed away. Many Unalakleet residents have to be evacuated from their homes to higher elevation during these climate-induced storms and flood events. Summer's house is less than one mile from the ocean, and is threatened by these climate-change induced threats. Permafrost around Summer's house has already thawed leaving one part of her house higher than the rest. Her grandparents' home, which Summer visits regularly, in Shaktoolik is just 200 feet from the ocean, situated on and surrounded by low elevation. Situated miles away from higher ground, Shaktoolik's only evacuation route is by boat.

88. Summer relies upon the lands and waters of Alaska for subsistence. She picks blueberries, salmonberries, cranberries, and blackberries. She fishes salmon and trout, hunts for ugruk (bearded seal), beaver, moose, and geese, and collects seagull and duck eggs. Summer's ability to engage in these seasonal subsistence activities is already harmed by climate change. She loves to fish in the North River near Unalakleet, but hotter and drier summer seasons have made the river shallower and some of its streams are now often even dry. Snow comes later and later to Unalakleet each year, melts earlier, and increasingly falls as rain instead of snow. Lack of snow makes travel and hunting during the winter difficult for Summer and her family. Increased rain makes the roads icy and dangerous. Overland travel is also more difficult without adequate snow cover where rain accumulates in large pools on top of the ice as "overflow." Due to low snow pack, for the past few years, Summer has had to travel by different and more difficult trails to

her family's nearby cabin on the North River for subsistence activities. Loss of sea ice and thinner sea ice makes hunting for seals and jigging for crab increasingly difficult and dangerous as well. One of Summer's teachers fell through the ice one year, but thankfully was saved. Summer's family used to use an ice cellar to preserve berries and fish in the summer months, but they cannot use it now because the land is not frozen anymore and it is not cold enough to preserve the food. Summer's traditional subsistence practices are already negatively affected by climate change, and these impacts will only worsen without meaningful action to address GHG emissions and climate change.

89. Summer is also injured by the increase in wild forest and tundra fires caused by climate change. In June 2017, smoke from fires near North River and Stebbins blew across the mountains, filling the air in Unalakleet. Ten miles outside of Unalakleet at her vacation bible camp, Summer has seen first-hand the increasing numbers of spruce beetles that are killing the forests where her community hunts and traps, leaving the forests at further risk of wildfire.

90. Summer enjoys skiing but now there is frequently not enough snow for her ski practice and her team has to find alternative ways to practice, including running indoors or traveling away from the village to find snow.

91. All of Summer's aforementioned harms to her food sources, her culture and traditions, her family, and her home harm Summer's emotional and mental wellbeing. Summer worries about and fears these impacts, the impact of increasing fires on wildlife and habitat in the areas surrounding Unalakleet, the loss of the things that are vital to her life, and the increasing temperatures that threaten the very landscape and ice on which she and her people have survived for millenia.

92. In 2011, six Alaska youth filed suit to compel science-based GHG emissions reductions in Alaska. Upon review of that case in 2014, the Alaska Supreme Court recognized that the "science of anthropogenic climate change is compelling." *Kanuk ex rel Kanuk v. State, Department of Natural Resources*, 335 P.3d 1088, 1097 (Alaska 2014). The Court also noted that there had been no progress on the issue of climate change at the state level since 2009. *Id.* at 1098. Ultimately, the Court determined that Alaska's policy determinations as to whether and how to address the climate crisis were not those of the judiciary, but those of the "legislature – or an executive agency entrusted with rule-making authority" to make "in the first instance." *Id*.

93. On August 28, 2017, Youth Plaintiffs submitted a petition for rulemaking to Defendants DEC and Commissioner Hartig requesting reductions of Alaska's GHGs in order to preserve their fundamental and inalienable constitutional rights and rectify Defendants' infringements thereof (hereinafter "Petition for Rulemaking"). A true and correct copy of Youth Plaintiffs' Petition for Rulemaking is attached hereto as **Exhibit A** and incorporated herein by reference.

94. On September 27, 2017, consistent with, providing further evidence for, and in furtherance of Defendants' Climate and Energy Policy (which involves systemic authorization, permitting, encouragement, and facilitation of activities resulting in dangerous levels of GHG emissions, without regard to Climate Change Impacts or any climate change mitigation standards, and perpetual denial of and delay in development of climate change mitigation standards), DEC and Commissioner Hartig denied Youth Plaintiffs' Petition for Rulemaking.

95. Regarding cases involving fundamental constitutional rights, the U.S. Supreme Court recently said, "[t]here may be an initial inclination in these cases to proceed with caution—to await further legislation, litigation, and debate. . . . Of course, the Constitution contemplates that democracy is the appropriate process for change, so long as that process does not abridge fundamental rights. . . . The Nation's courts are open to injured individuals who come to them to vindicate their own direct, personal stake in our basic charter." *Obergefell v. Hodges*, 135 S. Ct. 2584 (2015). The Youth Plaintiffs' stories show the urgency of the issue they present to the Court.

DEFENDANTS

96. Defendant State of Alaska is the sovereign trustee over Public Trust Resources within its domain, including air, water, the sea, the shores of the sea, and fish and wildlife. It maintains control over these and other Public Trust Resources and must protect them from substantial impairment and alienation, for the benefit of present and future Alaskans. Alaska must exercise a duty of care over Public Trust Resources and manage them with of loyalty and impartiality to the citizen beneficiaries of Alaska's public trust, including these Youth Plaintiffs and future generations.

97. In interpreting and effectuating its trustee duties, the State has declared that it is its policy "to conserve, improve, and protect its natural resources and environment and control water, land, and air pollution, in order to enhance the health, safety, and welfare of the people of the state and their overall well-being....and to develop and manage the basic resources of water, land, and air to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations." AS

46.03.010. Alaska has delegated lead responsibility for the State's duties as trustee of Public Trust Resources to DEC.

98. Notwithstanding its trustee obligation, Defendant State of Alaska has explicitly authorized and encouraged the development, transport, and use of fossil fuels to generate energy in Alaska and for export.

99. Defendant William Walker is the Governor of Alaska and is sued in his official capacity. The Alaska Constitution vests the Governor with the responsibility "for the faithful execution of the laws." Alaska Const. art. III, sec. 16. The Governor must actively or passively approve bills passed by the legislature before they become law and has the power to veto legislation. Alaska Const. art. II, §§ 15, 17. The Governor is constitutionally obligated to periodically address the legislature as to the affairs of the state and recommend necessary actions. Alaska Const. art. III, § 18.

100. "The executive power of the State is vested in the Governor." Alaska Const. art. III, § 1. The Governor has supervisory authority over each principal department of the executive branch, including DEC, DNR, and the Department of Commerce, Community, and Economic Development, Alaska Const. art. III, § 24, and appoints the head of each principal department of the executive branch, Alaska Const. art. III, § 25. The Governor has supervisory authority over each Agency Defendant.

101. The Governor holds cabinet meetings, communicates with other state officers, oversees budget expenditures, and has authority to issue executive orders.

102. The Governor is responsible for approving annual plans submitted by DEC for management and protection of the quality of the environment and natural resources of the state. AS 46.03.040

103. Governor Walker, adding to the dangerous acts of his predecessors, has used his expansive authority, and directed DEC, DNR, and other Agency Defendants, to encourage, allow, and authorize activities resulting in dangerous levels of CO_2 and GHGs, thus causing, contributing and exacerbating the climate crisis. He has taken these actions while simultaneously telling the public that Alaska is "ground zero for climate impacts" and that the crisis is "an absolute urgency for Alaska." Similarly, Governor Walker has not used his authority, nor directed DEC, DNR, and other Agency Defendants to implement their authority, to prevent and reduce Alaska's emissions of dangerous levels of GHGs and protect its biologic carbon sinks.

104. Defendant Alaska Department of Environmental Conservation ("DEC") is a department of the State of Alaska created by AS 44.17.005(14). The legislature has granted DEC broad responsibility, powers, and duties to "conserve, improve, and protect [Alaska's] natural resources and environment and control water, land, and air pollution, in order to enhance the health, safety, and welfare of the people of the state and their overall economic and social well-being[]" and to "manage the basic resources of water, land, and air to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations." AS 46.03.010; 46.03.020(10)(G); 44.46.020(a)(4). DEC has both the power to adopt regulations to accomplish these purposes and the duty to take action necessary to fulfill them. AS 46.03.020(10)(G); 44.46.020(a)(4). DEC has authority to review the programs and activities of other state departments and agencies for consistency with these purposes. AS 46.03.020(2). In furtherance of these purposes, DEC must annually review and revise a statewide

environmental plan for the management and protection of the quality of the environment. AS 46.03.040.

105. DEC has primary responsibility for "coordination and development of policies, programs, and planning related to the environment of the state and of the various regions of the state." AS 44.46.020(a)(1).

106. DEC has primary responsibility for "the adoption and enforcement of regulations for the prevention and abatement of all water, land, subsurface land, and air pollution, and other sources or potential sources of pollution of the environment…." AS 44.46.020(a) (2). With respect to air pollutants, DEC is authorized to establish "ambient air quality standards" and "emissions standards," AS 46.14.010, and standards "for the control of the emissions for motor vehicles," AS 46.14.510 and has the duty to "adopt regulations to address substantive and procedural elements of the emission control permit program…." AS 46.14.140. DEC issues air quality permits to facilities that emit GHG emissions, including but not limited to projects that burn and promote the use of fossil fuels.

107. DEC issues permits governing the discharge of solid and liquid waste materials for activities that emit GHG emissions, including but not limited to solid waste management and liquid waste management. The activities for which DEC issues permits result in dangerous levels of GHG emissions.

108. Defendant Lawrence Hartig is commissioner of DEC and is sued in his official capacity. Through his office, Commissioner Hartig has authorized, permitted, and encouraged fossil fuel exploitation, development, utilization, combustion, and exports, which activities generate dangerous levels of GHG emissions. Consistent with these

efforts that exacerbate the climate crisis, Commissioner Hartig has refused to utilize his office and his authority to initiate any effort to phase out GHG emissions consistent with levels that could avert dangerous disruption of the climate system.

109. DEC and Commissioner Hartig denied Youth Plaintiffs' Petition for Rulemaking on September 27, 2017.

110. Defendant Alaska Department of Natural Resources ("DNR") is a department of the State of Alaska created by AS 44.17.005(10). DNR manages all state-owned land, water, and natural resources, except for fish and game, including 65 million acres of tidelands, shorelands, and submerged lands, and 34,000 miles of coastline, on behalf of the people of Alaska.

111. DNR regulates, permits, and authorizes activities with which result in significant emissions of GHGs in Alaska. DNR has authority to regulate the disposition of deposits of fossil fuels in Alaska. DNR issues permits for surface coal mining and reclamation in Alaska, issues licenses for exploration and leases for production and extraction of oil and gas in Alaska, and permits for drilling in Alaska. DNR also issues permits and leases for livestock grazing in Alaska. The activities for which DNR issues permits, licenses, and leases result in dangerous levels of GHG emissions.

112. ADNR has authorized, permitted, and encouraged fossil fuel exploitation, development, utilization, combustion, and exports, and livestock grazing, which activities generate dangerous levels of GHG emissions. Consistent with these efforts that exacerbate the climate crisis, ADEC has not utilizes its authority to initiate any effort to phase out GHG emissions consistent with levels that could avert dangerous disruption of the climate system.

113. Defendant Alaska Oil and Gas Conservation Commission ("AOGCC") is an independent agency of the State of Alaska created by AS 31.05.005. AOGCC has authority to oversee and regulate oil and gas drilling, development, and production in Alaska for conservation and for public health, safety, and environmental protection purposes and issues permits for oil and gas drilling in Alaska. AOGCC's authority extends to all land in the state lawfully subject to its police powers, including land of the United States and land subject to the jurisdiction of the United States, as well as offshore areas. Oil and gas drilling in Alaska permitted by AOGCC results in dangerous levels of GHG emissions.

114. Defendant Alaska Energy Authority ("AEA") is a public corporation of the State created by AS 44.83.020 and organized within the Department of Commerce, Community, and Economic Development ("DCCED"). AEA is the state's energy office and lead agency for statewide energy policy and program development. AEA's purposes are to finance and operate power projects and facilities in Alaska that recover and use waste energy. AEA is authorized to improve, equip, operate, and maintain power projects and bulk fuel, waste energy, energy conservation, energy efficiency, and alternative energy facilities and equipment and to carry out the other powers listed in AS 44.83.080.

115. Defendant Regulatory Commission of Alaska ("RCOA") is an independent agency of the State created by AS 42.04.010 and is organized within DCCED. RCOA regulates public utility and pipeline services to ensure that they provide safe and adequate services and facilities. RCOA issues certificates of public convenience to utilities that provide natural gas and electric services derived from fossil fuel combustion and regulates the rates, services, and practices of the utilities to which it

issues certificates of public convenience. RCOA regulates oil and gas pipelines and pipeline carriers in the state and issues permits for the construction, modification, operation, and abandonment of oil and gas pipeline facilities in the state. RCOA's certification and permitting activities cause and contribute to dangerous levels of GHG emissions.

LEGAL BACKGROUND

116. Article I, Section 7 of the Alaska Constitution recognizes and preserves the fundamental right of citizens to be free from government actions that harm life, liberty, and property without due process of law.

117. The Alaska Constitution expressly recognizes that "[a]ll political power is inherent in the people. All government originates with the people, is founded upon their will only, and is instituted solely for the good of the people as a whole." Alaska Constitution Art. I, Section 2. The Constitution of Alaska is dedicated to the principle of protection of all persons' (including future generations) natural and inherent rights and explicitly states that the "enumeration of rights in this constitution shall not impair or deny others retained by the people." Alaska Constitution Art. 1, §§ 1, 21. In recognizing unenumerated constitutional rights, the Alaska Supreme Court has recognized the "broad scope of the Alaska Constitution's liberty and privacy guarantees." *Myers v. Alaska*, 138 P.3d 238, 248 (Alaska 2008).

118. Alaska's constitutional guarantee to individual liberty is broader and more protective than that guaranteed by the federal constitution.

119. One of the fundamental and inalienable rights retained by the people is the right to a stable climate system that sustains human life and liberty. The right to a stable climate system that sustains human life and liberty is a liberty interest both necessary for and foundational to the explicitly enumerated rights reserved by the Alaska Constitution, including the rights to life, liberty, and property, and is constitutionally reserved through both Sections 7 and 21 of Article I of the Alaska Constitution.

120. Other unenumerated rights protected by the Alaska Consitution include the rights to personal security, bodily integrity, and autonomy. The liberty interests protected by the Alaska Consitution also extend to certain personal choices central to individual dignity and autonomy, including intimate choices that define personal identity and belief. The constitutionally protected liberty interests in dignity and autonomy encompass the capacity to provide for one's basic human needs, safely raise families, learn and practice one's religious and spiritual beliefs, learn, practice, and transmit one's native cultural traditions and practices, maintain one's bodily integrity, and lead a life with sufficient access to clean air, water, shelter, and food.

121. The equal protection clause of Article I, Section 1 of the Alaska Constitution prohibits Defendants from discriminating against individuals and groups with respect to fundamental rights and as members of a protected class. This legal principle prohibits Defendants from adopting, implementing, and pursuing policies, practices, customs, and actions that destabilize the climate system whose protection is fundamental to children's and Youth Plaintiffs' fundamental rights to life, liberty, property, and to other unenumerated rights, including personal security, bodily integrity, autonomy, and to a stable climate system that sustains human life and liberty.

122. Article VIII of the Alaska Constitution ensures the protection, balanced development, and conservation of Alaska's natural resources and constitutionalizes the Public Trust Doctrine in Alaska. Constitutionally protected Public Trust Resources under the Public Trust Doctrine include at least waters (surface, subsurface, and atmospheric), fish, and wildlife.

123. The Public Trust Doctrine provides that the State holds Public Trust Resources, including, but not limited to, waters (surface, subsurface, and atmospheric), fish, wildlife, air (atmosphere), the climate system, the sea and the shores of the sea, submerged and submersible lands, beaches, forests, grasslands, grasslands, and tundra in trust for public use. The overarching Public Trust Resource is our climate system, which encompasses the atmosphere, waters, oceans, and biosphere. The state owes a fiduciary duty to manage Public Trust Resources for the common good of the beneficiaries - present and future generations of Alaskans. The Public Trust Doctrine is applicable to the State's management, use, and disposal of Public Trust Resources, which are held in trust for present and future generations of citizens of the State of Alaska.

124. Article VIII, § 2 of the Alaska Constitution states: "The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people."

125. Article VIII, § 3 of the Alaska Constitution states: "Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use."

126. Article VIII, § 4 of the Alaska Constitution states that "fish, forests, wildlife, grasslands and all other replenishable resources belonging to the State shall be

utilized, developed and maintained on a sustained yield principle, subject to preferences among beneficial uses."

127. Article VIII, § 6 of the Alaska Constitution states that "lands and interests therein, including submerged and tidal lands, possessed or acquired by the State, and not used or intended exclusively for governmental purposes, constitute the public domain."

128. The Alaska Legislature has declared the climate system a Public Trust Resource in AS 46.03.010, which states: "It is the policy of the state to …manage the basic resources of water, land, and air to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations."

129. Youth Plaintiffs are beneficiaries of rights under the Public Trust Doctrine, rights that are secured by Article I, Section 21 and Article VIII of the Alaska Constitution. The Public Trust Doctrine is an inherent attribute of sovereignty preserved, rather than created by, the Alaska Constitution and cannot be abdicated.

130. Under the Public Trust Doctrine, "'[t]he control of the State for purposes of the trust can never be lost, except as to such parcels as are used in promoting the interests of the public therein, or can be disposed of without any substantial impairment of the public interest in the lands and water remaining.'" *CWC Fisheries, Inc. v. Bunker*, 755 P.2d 1115, 1118 (Alaska 1988) (quoting *Illinois Cent. R.R. v. Illinois*, 146 U.S. 387, 453 (1892)).

131. Public Trust rights secured by the Public Trust Doctrine include the rights of present and future generations to access, use and enjoy Public Trust Resources. Defendants, as trustees, have concomitant duties corresponding with Youth Plaintiffs' rights as beneficiaries under the Public Trust Doctrine. As trustees Defendants have a

duty of care to exercise appropriate skill, prudence, and caution in managing the Public Trust Resources. Defendants have a duty to maintain, control, preserve, and prevent substantial impairment to and waste of Public Trust Resources. Defendants, as trustees, have a duty of loyalty and impartiality to manage Public Trust Resources for the benefit of all beneficiaries, both present and future generations, and not to favor one class of beneficiaries at the expense of and detriment to another class of beneficiaries.

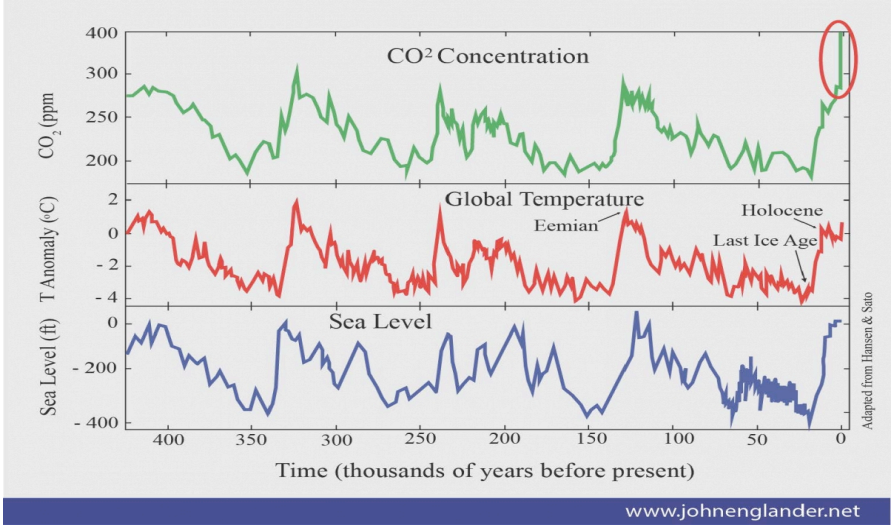
FACTUAL BACKGROUND

Anthropogenic Climate Change Will Be Catastrophic Unless Atmospheric CO_2 Concentrations Decline to 350 ppm or Less by 2100

132. There is an overwhelming scientific consensus that human-caused climate change is occurring. The present rate of global heating and ocean acidification is a result of anthropogenic GHG emissions, primarily CO_2 emissions, from the combustion of fossil fuels. This release of GHG emissions into the atmosphere, combined with deforestation and soil degradation, has disrupted Earth's energy balance, thereby changing Earth's climate, resulting in Climate Change Impacts.

133. In April 2017, the monthly average atmospheric CO_2 concentration exceeded 410 parts per million (ppm) for the first time in recorded history. The global annual average atmospheric CO_2 concentration today is 404 ppm compared to the pre-industrial concentration of 280 ppm. For hundreds of thousands of years, CO_2 levels naturally fluctuated between 180 and 280 ppm. The atmospheric CO_2 concentration has been increasing, and continues to increase, as a direct result of human combustion of fossil fuels. Current atmospheric CO_2 concentrations are higher than levels in millions of years.

134. Atmospheric CO_2 is the primary forcer of climate change. Atmospheric CO_2 levels, global temperature and sea levels are all closely correlated as depicted in the graph below.



135. For the first time in the measurable paleo-record, CO_2 levels have risen by more than 125 ppm and within only 150 years. This type of differential in CO_2 levels drove a series of sea level rise pulses over thousands of years that totaled 120 meters of sea level rise in response to warming and ice melt. The last time in the measured paleo-record when CO_2 levels were as high as present levels, the seas were approximately 70 feet higher than today.

136. The concentration of other GHGs in the atmosphere have also increased. For example, methane concentrations have increased approximately 250% since the pre-industrial period.

137. GHGs in the atmosphere act like a blanket over Earth to trap the heat that it receives from the sun. Without this greenhouse effect, the average surface temperature of our planet would be 0°F (-18°C) instead of 59°F (15°C). Scientists have understood this basic mechanism of global warming since at least the late-nineteenth century. More

GHGs in the atmosphere means that more heat is being retained on Earth, with less heat radiating back out into space, causing a disruption in Earth's energy balance.

138. A substantial portion of every ton of CO_2 emitted by humans persists in the atmosphere for as long as a millennium or more; therefore, the impacts associated with the CO_2 emissions of today will be mostly borne by children and future generations. The Earth will continue to warm in reaction to concentrations of CO_2 from past emissions, as well as future emissions. This scientific concept has been well understood and accepted by Defendants for multiple decades.

139. Over 90 percent of the excess heat caused by rising CO_2 levels is being absorbed by the oceans, causing the largest ice sheets on the planet to melt. Oceans will retain that heat for much longer than the surface of the earth because water must lose more energy in order to cool. Thus, future generations will continue to be harmed by the warming oceans long after climate pollution is eliminated.

140. By the time Alaska became a state, the federal government well understood that CO_2 caused dangerous climate change. In 1955, a research paper supported by the United States Office of Naval Research, The Carbon Dioxide Theory of Climate Change, clearly linked the release of carbon dioxide from human activities to temperature increases. A 1965 White House Report, Restoring the Quality of Our Environment, linked rising carbon dioxide emissions to temperature increases, melting of the Antarctic ice cap, sea level rise and warming, acidification, and other impacts.

141. A September 17, 1969 White House Memorandum acknowledged that "[i]t is now pretty clearly agreed that the CO_2 content will rise 25% by 2000. This could increase the average temperature near the earth's surface by 7 degrees Fahrenheit. This in

turn could raise the level of the sea by 10 feet. Goodbye New York. Goodbye Washington [DC], for that matter."

142. For decades, the U.S. Government and the State of Alaska have acknowledged that climate change is occurring from burning fossil fuels, that its adverse effects are underway and that a continuation of a fossil fuel-based energy system and unabated GHG emissions would consign future generations to irreversible and catastrophic consequences. In 2014, the National Climate Assessment acknowledged that "the cumulative weight of the scientific evidence . . . confirms that climate change is affecting the American people now, and that choices we make will affect our future and that of future generations."

143. The State of Alaska has also long known that it is on the frontline of climate change impacts due to its northern latitudes and the fact that the planet is warming more quickly at the poles. Whereas the global average temperature has increased more than 1°C above preindustrial temperatures, Alaska's temperatures have increased by 3-4°C.

144. U.S. Senator for Alaska Ted Stevens stated in 2001 that "There is little doubt that Alaskans are feeling the effects of climate change more than anyone else in our nation."

145. Climate Change Impacts result from human-caused GHG pollution, deforestation, and degradation of soils. Climate Change Impacts are already injuring and irreversibly destroying human and other natural systems, causing loss of life and pressing species to extinction. Based on GHG emissions already in the atmosphere, absent immediate science-based action, climate change is projected to produce catastrophic and

irreversible consequences for humanity and nature alike. Unless arrested by immediate science-based action, climatic tipping points will be reached and points of no return will be crossed after which catastrophic Climate Change Impacts will be unavoidable and irreversible.

146. Well-documented and observable impacts from the changes in the climate system in Alaska highlight that the current level of atmospheric CO_2 concentration, over 400 parts per million, has already taken Alaska and the rest of Earth into a danger zone. In fact, Michael Kuperberg, director of the U.S. Global Change Research Program at the Office of Science and Technology Policy, admitted in a 2017 deposition that climbing emissions have placed the nation "in a danger zone." Current CO_2 and GHG concentrations are resulting in the warming of land surfaces, the warming and acidification of oceans, increased atmospheric moisture levels, rises in the global sea level, and changes in rainfall and atmospheric air circulation patterns that affect water and heat distribution, among other impacts.

147. One key observable change is the rapid increase in recorded global surface temperatures. As a result of increased atmospheric CO_2 and GHGs from human activities, based on fundamental scientific principles, the Earth has been warming as scientists have predicted. The increased concentrations of GHGs in our atmosphere have raised average global surface temperature by just over 1°C from 1880 to 2016, which is above the maximum warming of the Holocene era, the ~12,000 year epoch of relatively stable climate, which allowed human civilization to develop. In the last thirty years, the acceleration of change has intensified as the Earth has been warming at a rate three times faster than that over the previous one hundred years. According to the National

Aeronautics and Space Administration ("NASA"), 2016 was the hottest year on record, with 2014 and 2015 falling into second and third places, respectively, with 2017 in the running for making the second hottest year in recorded history.

148. The United States Environmental Protection Agency ("EPA") has found that climate change already harms our health and welfare and will only worsen without immediate action. Human-caused fossil fuel extraction and combustion and the resulting climate change are already contributing to an increase in asthma, cancer, cardiovascular disease, stroke, heat-related morbidity and mortality, food-borne diseases, and neurological diseases and disorders. Climate change threatens the basic requirements for maintaining health like clean air and pure water, sufficient food, and adequate shelter. Increased atmospheric concentrations of CO_2 results in food crops with decreased nutritional content. Climate change also increases occurrence of infectious diseases, including those spread by mosquitos, ticks, and other pests. Children are especially vulnerable to adverse health impacts due to climate change.

149. Mental health disorders are likely to be one of the most dangerous indirect health effects of climate change. The mental health effects include elevated levels of anxiety, depression, PTSD, and a distressing sense of loss. The impacts of these mental health effects include chronic depression, increased incidences of suicide, substance abuse, and greater social disruptions like increased violence.

150. Climate change is already causing, and will continue to result in, more frequent, extreme, and costly weather events, such as floods and hurricanes and other storm-related events. The annual number of major tropical storms and hurricanes has

increased over the past 100 years in North America, coinciding with increasing temperatures in the Atlantic sea surface.

151. The science of attributing extreme weather events to climate change is developing rapidly and now can be used to make significant, scientifically accurate probabilistic predictions about future weather events and the expected severity of weather-related natural disasters. Scientifically reliable research has been done and continues to advance establishing a causal relationship between anthropogenic greenhouse gas emissions and certain extreme weather events.

152. Scientific evidence demonstrates that projected non-linear sea level rise would submerge substantial portions of Alaska's coast and increase the severity of storm surge, coastal flooding, and erosion, impacting many Alaskans, necessitating relocation of entire communities and causing trillions of dollars of property loss, unless there are immediate reductions in CO_2 and GHG emissions. Some communities already require relocation and many more are imminently threatened. Global mean sea level has risen about 8-9 inches since the industrial revolution and 3 of those inches have occurred since 1993. Even these relatively small increases have had substantial effect on low-lying areas.

153. Scientists have established that during certain periods of the geologic record sea level has occurred very rapidly. This geologic evidence for prior rapid ice sheet disintegration verifies that the numerous reinforcing, accelerating feedbacks are occurring with respect to recent sea ice and ice sheet melt.

154. In 2017, the National Oceanic and Atmospheric Administration (NOAA) published the most recent United States Government sea level rise projections, once

again confirming that sea level rise is a certain impact of climate change. NOAA's projections included a range between 4.1-8 feet global mean sea level rise for 2100. However, for certain coastlines across the U.S., the high ranges could be 1-3.3 feet higher. NOAA's 2017 projections are higher than the projections it made just five years ago in its 2012 assessment.

155. Under NOAA's 2017 projected scenarios, there could be 2 feet of sea level rise by 2048, 4 feet by 2074, 6 feet by 2093, 8 feet by 2110, and 10 feet by 2125. A 2-3 foot rise of sea level will make nearly all of the barrier islands of the world uninhabitable, result in inundation of a major portion of the world's deltas, and make low-lying coastal zones increasingly challenging communities in which to maintain infrastructure and welfare and to assure protection of life and property. Alaska's coastal villages will be increasingly threatened with storm surge, flooding, and coastal erosion.

156. NOAA reports that even 3 feet of sea level rise would permanently inundate 2 million American's homes and communities and 6.6 feet of sea level rise would put 6 million U.S. homes underwater.

157. NOAA's projection of up to 8 feet of sea level rise by 2100 is representative of sea level projections typically made in the scientific literature based on current modeling, including the current rate of accelerated melting in the poles, but it does not address other plausible high-risk scenarios. The scientific consensus regarding the historic rapid pulses in sea level rise as ice sheets disintegrate is not incorporated in NOAA's 2017 model, or any of the modeling summarized by the Intergovernmental Panel on Climate Change. Thus, all of those governmental reports likely underestimated the severity and speed with which the seas will rise.

158. The best scientific information available projects a 15-40 foot rise in sea level by 2100 if current trends continue, with ever greater rises and acceleration in subsequent centuries until such time as levels of CO_2 in the atmosphere are dramatically reduced and steps are taken to cool the upper portion of the ocean.

159. Increased CO_2 emissions are having a severe negative impact on our oceans, in addition to our climate system. The oceans absorb around 25-30% of global CO_2 emissions, resulting in their acidification. Ocean acidity has been rising at a geologically unprecedented rate. Currently, acidity is rising at least 100 times faster than at any other period during the last 100,000 years, threatening marine life, including human food sources, and killing coral reefs.

160. Climate change and ocean acidification are threatening the survival and wellbeing of plants, fish and wildlife, and Earth's biodiversity. As many as one in six species are threatened with extinction due to climate change. Many more species that do not face extinction will face changes in abundance, distributions, and species interactions that cause adverse impacts for ecosystems and humans. Almost two-thirds of common plants and half of all animals are projected to decline dramatically in population this century as a result of climate change, absent meaningful science-based action.

161. Climate change is resulting, and projected to increasingly result, in increased frequency and severity of wildfires. Anthropogenic climate change has already increased the risk of severe wildfire in Alaska by as much as 60%.

162. Increased wildfires threaten forest and agricultural industries, private property, and public health. Smoke and particulate matter from wildfires endanger

individuals with asthma and other respiratory and cardiovascular conditions as well as the elderly and young children.

163. Increased severity and frequency of storms and severe weather events threatens health and safety. These events increase the risk of accidental injury, drowning, and death. In rural communities, like many of those in Alaska, where serious medical emergencies require medivac trips to larger communities, these events can ground flights or prevent safe travel, endangering health.

164. The best available climate science today prescribes that global heating must be limited to no more than 1°C in the long-term, with a short-term peak of no more than 1.5°C, in order to avert the worst and most catastrophic impacts of climate change. According to the current climate science, to prevent long-term global heating greater than 1°C and to avoid short-term heating of more than 1.5°C, concentrations of atmospheric CO_2 must decline to 350 ppm or less by the end of this century. If CO_2 emission reductions begin in 2018, the global average annual rate of reduction would need to be 9.2% per year.[1] In addition to eliminating CO_2 emissions, the scientific prescription to return to 350 ppm requires the global sequestration of 100 gigatons of CO_2 through improved land management practices and protection of forests and soils. The best available science dictates that this prescription is necessary to restore balance to Earth's climate system and avoid the worst and most catastrophic Climate Change Impacts.

165. In the longer run, beyond this century, to avoid catastrophic ice sheet melt and sea level rise, atmospheric CO_2 levels need to continue to decrease and likely need to

[1] Since Youth Plaintiffs submitted their Petition for Rulemaking, calculations of the global rate of reduction of CO_2 have changed, indicating that steeper reductions are necessary to avert the worst and most catastrophic impacts of climate change.

return closer to levels of the Holocene epoch at 280 ppm. There is only one way to accomplish this and it is by significantly and swiftly reducing fossil fuels as a source of energy. For every additional year of delay, it becomes that much more difficult to reach 350 ppm by 2100.

166. Oceans have the same scientific standard of protection. Critically important ocean ecosystems, such as coral reefs, and critical foundational food web species, like phytoplankton and zooplankton, including pteropods, are substantially impaired and threatened with increasingly devastating impacts by today's global annual mean CO_2 concentrations of approximately 404 ppm. According to current science, atmospheric CO_2 levels should be reduced to no more than 350 ppm in order to protect ocean ecosystems, foundational food web species, and coral reefs from dangerous acidification and warming. As new scientific studies become available, the best science may show the need to reduce levels well lower than 350 ppm to protect ocean systems.

167. Experts have already concluded the feasibility of, and prepared a roadmap for, the transition of Alaska's all-purpose energy systems (for electricity, transportation, heating/cooling, and industry) to a 100 percent renewable portfolio by 2050, which, in addition to direct climate benefits, will reduce air pollution and save lives and costs associated with air pollution.

168. Opportunities to sequester carbon through improved land use practices are technically and economically feasible. For example, improved forestry and agricultural practices can provide a net drawdown of atmospheric CO_2, primarily via reforestation, helping to return to safe levels of atmospheric CO_2.

Climate Change Impacts in Alaska Are Already Severe and Will Increase, Disproportionately Affecting Young People

169. As a result of anthropogenic climate change, average annual temperatures in Alaska have risen at nearly twice the rate of the rest of the world in the last few decades. Alaska's average annual temperatures have increased 2-3 degrees Celsius since the 1950's and as much as 6.3 degrees Celsius in the winter since the 1950s. According to the National Oceanic and Atmospheric Administration, Alaska was as high as eleven degrees Fahrenheit over the temperature norm in 2016. Recent findings by the Alaska Research Center show an increase in average winter temperature for the state from 1949 to 2016 of 6.7 degrees Fahrenheit, with increases as high as 9.9 degrees Fahrenheit in some areas.

170. By midcentury, as climate change progresses, average annual temperatures in Alaska are projected to increase an additional 2 to 4 degrees Fahrenheit and by as much as 8 degrees Celsius by the end of the century. The warming that has occurred to date is already causing sweeping and alarming impacts to Alaska's ecosystems. Snowfall is arriving later in the season, melting earlier, and increasingly falling as rain instead of snow.

171. Anthropogenic climate change has caused and is causing a decrease in both the extent and thickness of Arctic sea ice, with an expanse of sea ice about twice the size of Texas having vanished over the past thirty years. The volume of late summer arctic sea ice is now estimated to be only one-fifth of what it was in 1980. The rate at which sea ice is disappearing is accelerating as climate change progresses. The last three years have established consecutive new record lows for maximum extent sea ice.

172. As reflective sea ice melts and is replaced by sunlight-absorbing dark ocean surface, loss of sea ice creates a feedback effect further amplifying global warming

and accelerating further loss of sea ice, a phenomenon known as the "albedo effect." Further increase in temperatures is projected to melt the remaining sea ice by the 2030's. This will cause devastating impacts to Alaska's wildlife and human communities.

173. Loss of sea ice has increasingly devastating consequences for seals, walruses, narwhal, and other marine and Arctic mammals, with associated impacts to individuals and communities for whom these animals are a primary food source. Sea ice loss is projected to result in loss of two-thirds of the polar bear population.

174. Loss of sea ice increases the exposure of coastal communities to flooding, coastal erosion, and high energy storms and storm surges, which are increasingly frequent and severe as a result of climate change and sea level rise, threatening many villages and necessitating relocation of entire communities. In the past 30 years, 100-300 feet of coastline has washed away from the north coast of Alaska between the U.S.-Canadian border and Icy Cape. Some Native villages are losing up to 50 to 75 feet of land each year. According to U.S. Geological Survey, 84 percent of the Alaska coast is eroding. In 2003 the U.S. Government Accountability Office reported that 86% of Alaskan Native Villages are experiencing flooding and erosion due to climate change. In many of these communities, including Shishmaref, these impacts have gotten so bad as to necessitate relocation of the entire village.

175. Anthropogenic climate change is causing accelerating glacier melt and retreat in Alaska. Alaska is experiencing the fastest loss of glacier ice on Earth with the vast majority of Alaska's glaciers in retreat and many already melted entirely. Alaska is one of the largest mountain glacier contributors to sea level rise. In 2012, data showed that Alaska's glaciers were melting at the rate of 46 billion tons of ice per year. The rate

of loss is only accelerating as climate change progresses; in 2015, Alaska's pace of glacial melt had risen to 75 billion tons of ice per year.

176. Glacial melt leads to rising sea levels, changes to localized ocean salinity, and affects ocean currents and ocean circulation. Increasing glacial melt also causes flooding and even landslides. Additionally, glacial melt has profound impacts on freshwater and marine aquatic resources, including river systems, with associated resulting impacts to wildlife, ecology, drinking water, fisheries, and downstream hydrologic resources. For instance, increased glacial melt can increase stream water turbidity with negative impacts to salmon and fish populations and can lead to flood events that wash salmon eggs from streambeds.

177. Anthropogenic climate change is causing accelerating thawing of permafrost in Alaska. Permafrost underlies about 80 percent of Alaska's surface, and over 70 percent of that surface is vulnerable to land sinkage due to permafrost thaw. Over the past 20 to 30 years, permafrost temperatures have increased 1 to 2 degrees Celsius. Absent science-based action to reduce GHG emissions, near surface permafrost is projected to be lost entirely from large parts of Alaska by the end of the century.

178. Permafrost acts as a large carbon sink, storing massive amounts of GHGs. Permafrost holds about 50 percent of soil carbon. Thawing permafrost releases GHGs, which, absent science-based emissions reductions, could create a self-reinforcing climate change feedback loop resulting in further accelerating permafrost thaw and runaway climate change. If all the world's permafrost thawed, it could double the amount of heat-trapping CO_2 in the atmosphere causing all of the ice on the planet to melt.

179. Permafrost thaw is causing land subsidence and sinkholes in Alaska, compromising structural integrity of houses, buildings, pipelines, plumbing, and other infrastructure. Thawing permafrost threatens many of Alaska's roadways, including the Alaska Highway. The costs of repair necessitated by thawing permafrost are projected to add as much as $6.1 billion to the costs of maintaining public infrastructure in the Arctic.

180. Land subsidence from permafrost thaw has also resulted in the loss of large forested areas in Alaska. Additionally, Permafrost thaw releases water and debris that impacts water quality, including turbidity, sedimentation, nutrients, and other contaminants, affecting human communities and fish and wildlife.

181. Permafrost stabilizes the ground and thus absorbs the impacts of ocean waves and protects against coastal erosion. As a result of thawing permafrost and other effects of climate change such as sea level rise, loss of sea ice, and increased frequency and severity of storms and storm surge, many Alaskan coastal communities are experiencing rapid coastal erosion. Many native villages, including Shishmaref, Kivalina, Newtok, and dozens of other coastal communities are faced with the necessity of relocation as a result, threatening Alaska Natives' cultural heritage and way of life.

182. Anthropogenic climate change is increasing the risk, incidence, and severity of wildfires in Alaska. Historically, the Alaskan tundra has been too wet and cold to support extensive fires. However, climate change has altered wildfire dynamics in Alaska leading to tundra fires in the central Alaska arctic that are unprecedented within the last 5,000 years. Like melting sea ice, increased absorption of light by burned tundra can influence feedback loops that accelerate and reinforce climate change. The increased

incidence of forest fires resulting from climate change also accelerates the degradation and thawing of permafrost, among other impacts.

183. As a result of anthropogenic climate change, wildfires across Alaska have increased in area burned and frequency since the 1950's with wildfires in the 2000's having increased tenfold compared to the 1950's and 60's. There has also been a dramatic increase in larger fires, those that consume between 10,000 and 50,000 acres. Because of Alaska's hotter, drier, and longer summers, reduced soil moisture, changes in precipitation and increased evaporation, all stemming from climate change, Alaska's wildfire season is now 40% longer than it was in the 1950's, running from May to August, or 35 days longer than it did 60 years ago.

184. Alaska's forests are also threatened by spruce beetles, which because of the warming climate, are increasing in population and expanding their habitat northward. With warmer temperatures, spruce beetles are now able to mature in one year when it had previously taken two years, leading to population booms that kill massive numbers of trees, and create stands of dead trees prone to wildfire.

185. Increasing wildfires have dire consequences for human health in Alaska. Wildfire smoke affects air quality, harming eyes, irritating respiratory systems, and worsening chronic heart and lung diseases.

186. Due to climate change, Alaska wildfires are projected to increase 150 to 390 percent by midcentury with grave consequences for forests and wildlife. An increase of wildfires of this magnitude would transform the species profiles of Alaska's forests and their suitability for timber production and wildlife.

187. Alaska is particularly prone to ocean acidification due to low temperatures and low salt content of marine waters caused by freshwater input from melting sea ice. The sea creatures in the polar region rely on particular conditions to survive. Notably, zooplankton, a major food source for salmon, herring, and whales, are particularly susceptible to ocean acidification. The incidence of severe pteropod shell deformation attributable to anthropogenic ocean acidification has already doubled in near-shore habitats since pre-industrial conditions and is projected to triple by 2050. Alaska's crab and shellfish populations and industries are also affected by ocean acidification.

188. According to a 2015 study, the "largest and most rapid changes in pH will occur in the Arctic Ocean and the Bering Sea" in the next decade. Absent science-based emissions reductions, projected rates of ocean acidification would overwhelm the ability of marine calcifiers to build and maintain their shells, which will further impair Alaska's fisheries. Absent swift implementation of science-based emissions reductions, Alaska's marine waters' capacities to further absorb carbon dioxide could be reached as early as 2025 in the Beufort Sea, 2027 in the Chuchki Sea, and 2044 in the Bering Sea. These implications are dire not only for Alaska's marine life, but also for the Alaskans that rely upon it, including subsistence fisherpeople and the commercial fishing industry, which constitutes the largest private sector employer in Alaska.

189. Climate change is having and will increasingly have profound impacts on Alaska's wildlife, with resulting impacts to the Alaskans who rely upon them and the ecosystems they support. Arctic species are specialized to the extreme conditions in which they live so species diversity is low and the food web is relatively small. The depletion of even one species when those conditions change produces ripple effects

throughout the entire ecosystem. The influx of rising temperatures, declining sea ice, thawing permafrost, increased wildfires, glacial melt, and increased ocean acidification has left Arctic species very sensitive and increasingly vulnerable. In the Pribilof Islands off the coast of Alaska alone, climate change is credited as the cause of decline for twenty native species.

190. Alaska's salmon populations, which provide subsistence for Native communities and provide a substantial portion of the state's economy, face devastating impacts in the absence of science-based emissions reductions. Considering rising temperatures alone, scientists predict that summer habitats in the North Pacific and part of the Arctic Ocean will decrease 86% for Chinook, 45% for sockeye, 36% for steelhead, and 30% for coho, pink, and chum salmon. The open ocean Gulf of Alaska habitat for Chinook and sockeye could be completely lost by 2100 as a result of climate change. Warming of freshwater and marine habitat, increased landslides, seawater rise, changes in running time and changing zooplankton availability, increased stream flooding, decreased stream snow cover, altered hydrology in spawning rivers, reduced productivity in nursing habitats, and changed frequency and distribution of predator, prey, and competitor species, as well as other impacts, each associated with climate change, present increasing dangers to Alaska's salmon.

191. Warming ocean waters in Alaska is causing fish like cod and haddock, and many other species, to move farther and farther north in search of cold, oxygen rich water, changing species composition and relative abundances and substantially altering the arctic food web structure and ecosystem functioning. This northward migration also effects Alaska's fishing industry and fisherpeople, who must increasingly make longer

trips for their catch. These longer journeys result in increased spoiled catches and threaten the safety of fisherpeople.

192. Sixteen of the Arctic National Wildlife Refuge's 38 species of mammals are at increasingly severe risk from progressing climate change. Six of these species are considered extremely vulnerable to climate change, meaning that their numbers or range within the Refuge will substantially decrease or disappear by 2050, absent science-based emissions reductions, including the polar bear, the arctic fox, the muskox, the tundra vole, the brown lemming, and the collared lemming. Ten other species are considered highly vulnerable and are projected to decrease significantly by 2050. These include the lynx, wolverine, caribou, Dall sheep, Alaska marmot, arctic ground squirrel, singing vole, northern bog lemming, tundra shrew, and barren ground shrew.

193. Caribou have been, and are increasingly, impacted by climate change. Thirty-four of the 43 major herds studied in the last decade are in decline with caribou populations plunging 57% from their historical peaks. The causes of the decline are straightforward and chief among them is rapidly rising Arctic temperatures. For Alaska's largest caribou herd, the Western Arctic Herd, scientists forecast up to a 53% increase in habitat area burned by wildfires by 2099, with up to a 60% increase in tundra fires in the region by 2053 alone. These effects will have corresponding impacts on caribou abundance and on the subsistence hunters reliant on them.

194. Rising temperatures are resulting in expanding tick habitat and populations, exposing moose and other animals, as well as humans, to parasite and disease.

195. Changes in tundra vegetation resulting from climate change are predicted to drastically alter the extent and habitat of songbird breeding habitat. Scientists predict that breeding conditions for Arctic migratory birds could shift, contract, and collapse by 2070 due to climate change. Of 24 shorebird species assessed in one study alone, as many as 83% are predicted to lose most of their breeding area, with declines being fastest in Western Alaska. A study by the Audubon Society in 2015 concluded that of 50 Alaskan bird species analyzed, all but three were projected to lose more than half of their summer habitat as a result of climate change.

196. Climate change is also affecting, and projected to increasingly affect, vegetation in Alaska, with evergreen forests shifting northward into the tundra and being replaced by grasslands or temperate forests at the southern edge of the biome. Warmer temperatures allow tree species previously found at lower latitudes and elevations to invade, or alter, higher altitude and tundra ecosystems. High latitude evergreens are especially at risk with changing precipitation patterns associated with climate change in Alaska, with past substantial mortality events for western hemlock, Sitka spruce, and yellow cedar linked to the transition from snowy to rainy winters and projected high mortality rates at northern latitudes as warming continues.

197. The changing climate also affects human health and safety in Alaska. Decreases in sea ice extent and thickness, decreases in snow, and increasingly icy road conditions are increasingly making hunting, fishing, and travel more dangerous and increasing the vulnerability of coastal communities to storms, flooding, and coastal erosion. Global warming has led to an increase in dangerous landslides and rockfalls. Debris and pollutants from thawing permafrost, and flooding from glacial melt and

increased rain impact the water supply and quality of Alaska's communities. Damage to infrastructure from thawing permafrost and increased flooding events can result in damage and disruption to water and sanitation infrastructure ultimately leading to infectious diseases like food- and water-born illnesses. Thawing permafrost has led to exposure to and illness from viruses and bacteria long frozen in the soil. Alaska's climate change-induced warming increases the risk and exposure of humans and animals alike to vector borne diseases and substantial increases in winged and stinging insects and airborne allergens. Additionally, climate change is predicted to result in food scarcity, water scarcity, and an increase of wildfires in Alaska. Many people in Alaska use their underground freezers to store subsistence foods throughout the year. As the ground warms, these traditional storage methods are not able to provide safe food storage.

198. These climate change impacts in Alaska are already having profound effects on subsistence lifestyles and these effects are only projected to increase absent science-based emissions reductions. Many local populations of fish, marine mammals, and seabirds have already been reduced or displaced. Reduced snow cover, shorter river and sea ice seasons, changing precipitation patterns, increasing wildfires, and permafrost thawing all obstruct travel and the harvest of wild food.

199. Climate Change Impacts are harming, and absent science based action on climate change, will increasingly harm Alaska's Native communities and cultures, their traditions, and their abilities to transmit their culture and traditions to future generations. Alaska Native and other indigenous communities share unique historical and cultural relationships with ancestral lands, significantly shaping their identities and cultures. This deep connection with the land and environment is integral to Alaska natives' culture.

Alaska Native communities have a deep relationship with ancestral homelands for sustenance, religious communion and comfort, and to maintain the strength of personal and inter-familial identities. Through language, songs, and ceremonies, Alaska's Native communities honor their sacred places as well as their traditions and the species they rely on for sustenance. Alaska's climate system, land, water, fish, and wildlife has sustained Alaska Native communities and cultures for thousands of years. As a result of climate change, these lands, waters, fish, and wildlife, and the climate system are being disrupted and changing in ways that were not anticipated based on traditional knowledge. Natural conditions increasingly no longer correspond with traditional knowledge. As a result, Native knowledge and traditions are increasingly at risk of being lost.

200. Alaska Native subsistence lifestyles, traditions, and practices, and the species they depend on, are important both nutritionally and culturally for Alaskan Native culture and wellbeing. Changes in sea and river ice have adversely affected the ability of Native communities to fish and hunt for species which are part of their traditional subsistence diets. Loss of sea and river ice adversely impacts subsistence fishing and hunting. Changing sea ice patterns adversely affects the animals themselves as well as access to them by hunters. Reductions in sea and river ice has made fishing and hunting more dangerous and difficult.

201. Climate change is adversely affecting the health and livelihoods of many Alaska Native Communities. Water distribution systems are at risk to erosion and flooding caused by climate change. Climate change also increases Native food insecurity due to adverse impacts to hunting and fishing opportunities and subsistence species. In many parts of Alaska, traditional Native food storage methods, like underground cellars,

are no longer reliable to safely store food due to permafrost melt and rising temperatures, also harming food security.

202. Due to Climate Change Impacts including rising sea levels, the thawing of permafrost, and the increase of storms and precipitation, Alaska Native Villages are suffering from unprecedented rates of flooding and erosion. This flooding and erosion is consuming and destroying Native lands, forcing entire communities to abandon their homes and the ancestral lands to which their traditions and cultures are tied and to relocate. Relocation can sever the deep and long-standing connections of Native Alaska communities to their ancestral lands. Many Native Alaskan communities lack the resources to fund relocation, increasing the probability that, if forced to relocate, the communities' members would not be able to relocate to the same place. This threatens the very existence and transmission of the culture and tradition of these Native communities.

203. Climate change is already, and, absent science-based action, will increasingly result in massive adverse economic impacts to Alaska's economy. Economic and financial losses from climate change impacts are wide-ranging and span across many sectors, including healthcare, wildlife and fisheries management, disaster relief, infrastructure construction and repair, and energy development, among others. Total cumulative damages to infrastructure alone in Alaska resulting from unmitigated climate change this century have been estimated as costing as much as $5.5 billion.

204. Further unmitigated emissions from Alaska will only exacerbate and increase the Climate Impacts already occurring and projected for Alaska.

Defendants' Longstanding Knowledge and Perpetuation of Climate Danger

205. State of Alaska governmental documents from as early as 1998 demonstrate Alaska governmental knowledge of anthropogenic climate change and global warming.

206. A 1999 regional report on Alaska entitled "Preparing for a Changing Climate" identified projected Climate Change Impacts in Alaska.

207. In 2001, U.S. Senator for Alaska Ted Stevens, in his capacity as Chairman of the Committee on Appropriations, chaired a special public hearing at the University of Fairbanks before the Committee to "present facts and predictions on the Arctic climate change issue and the impact it is having on the Arctic Region." Senator Stevens stressed the "practical need to address the impact of climate change" and emphasized that Climate Change Impacts "require more than a slow-moving response as far as the Federal and State governments are concerned."

208. On June 7, 2006, recognizing the urgency and severity of climate change in Alaska, and acknowledging that Alaska then had "only one employee working on these issues," the Alaska legislature, with the passage of HRC 30, created the Alaska Climate Impact Assessment Commission ("ACIAC") to assess the effects of climate change in Alaska and "recommend policies to decrease the negative effects of climate change." ACIAC was charged with holding public hearings around the state to guide its assessment and recommendations and to deliver a final report on its findings and recommendations to the legislature on January 10, 2008.

209. In advance of ACIAC's final report, the DCCED, the Department of Health and Social Services, the Department of Fish and Game, the Department of Transportation and Public Facilities, DEC, the Department of Military and Veterans

Affairs, and DNR submitted letters to ACIAC detailing Climate Change Impacts in Alaska.

210. Over ten years ago, in a presentation to the ACIAC on January 24, 2007, DEC recognized the Climate Change Impacts facing Alaska and their projected increase. In the presentation, DEC publicly acknowledged that "[i]t's a DEC duty not only to react/mitigate, but to act to prevent and control damage to the environment caused by greenhouse gases." DEC's presentation noted that DEC has the authority and ability to "lead the regulatory functions of reducing emissions."

211. In its final report to the legislature dated March 17, 2008, ACIAC detailed numerous urgent Climate Impacts occurring in Alaska and recognized that "the State of Alaska is at the leading edge of impacts resulting from a warming climate" and that "[t]here will be new responsibilities for the State of Alaska" in addressing the challenge of climate change. ACIAC acknowledged that "[a]s stated in the [2004] Arctic Climate Impact Assessment, 'The science suggests that responding to this challenge will require two sets of actions; one, *mitigation*, to slow the speed and amount of future climate change by reducing greenhouse gas emissions; and the other, *adaptation*, to attempt to limit adverse impacts by becoming more resilient to the climate changes that will occur while society pursues the first set of actions.'" The ACIAC was terminated in 2008 after its final report to the legislature.

212. Administrative Order 238, signed on September 14, 2007 by then-Governor Sarah Palin, established the Alaska Climate Change Sub-Cabinet. Order 238 was based in part on a finding that "[a]s a result of [global] warming, coastal erosion, thawing permafrost, retreating sea ice, record forest fires, and other changes are affecting,

and will continue to affect, the lifestyles and livelihoods of Alaskans." The Sub-Cabinet was composed of the commissioners of several departments, including DEC, DNR, Fish and Game, and DCCED and chaired by Commissioner Hartig.

213. The Sub-Cabinet was charged with making recommendations to the Governor on preparation and implementation of an Alaska Climate Change Strategy, which was to include measures the state can take to: 1) build its knowledge regarding climate change; 2) avoid or adapt to the predicted effects of climate change; and 3) mitigate the causes of climate change.

214. The Alaska Climate Change Strategy was required to be "built on sound science and the best available facts." Governor Palin's Report on the Climate Change Sub-Cabinet dated July 2008 also stated that Order 238 was meant, in part, to further the possibility of adopting policies "to regulate greenhouse gas emissions."

215. The Sub-Cabinet's recommendations were drawn from recommendations of the Mitigation Advisory Group ("MAG"), which assessed measures that could be taken to reduce Alaska's GHG emissions. MAG was in turn supported by five Technical Work Groups assembled around general greenhouse gas mitigation action categories, including: oil and gas; energy supply and land use; transportation and land use; forestry, agriculture, and waste; and cross-cutting issues.

216. The Cross-Cutting Technical Work Group was responsible for making policy recommendations that cover multiple sectors. As detailed in the MAG's final report, dated August 2009, the Cross-Cutting Technical Work Group made six policy recommendations that were approved by the MAG:

a. Establish an Alaska GHG emission reporting program, headed by DEC;

b. Establish goals for statewide GHG emissions reductions;

c. Identify and implement state government mitigation actions;

d. Integrate Alaska's climate change mitigation strategy with the Alaska Energy Plan;

e. Explore various market-based systems to manage GHG emissions; and

f. Coordinate implementation of Alaska's efforts to address climate change.

217. In its final report, MAG issued a number of policy recommendations to address climate change including: energy transmission optimization and expansion; energy efficiencies for residential, commercial, and industrial customers; renewable energy implementation; building standards; and energy efficiency for industrial installations; forest management and reforestation strategies for carbon sequestration in coastal and boreal forests; community wildfire risk reduction plans; expanded use of biomass feedstocks for energy production (heat, power, alternative fuels); and advanced waste reduction and recycling; oil & gas conservation practices; reducing fugitive methane emissions; electrification of North Slope operations with centralized power; improved equipment efficiency; renewable energy in O&G operations; carbon capture, sequestration, and enhanced oil recovery strategies within and away from known geologic traps; greater commuter choices; heavy-duty vehicle idling; transportation system management; efficient development patterns; promotion of alternative-fuel vehicles; vehicle-miles-traveled and greenhouse gas reduction goals; efficiency

improvements in heavy-duty vehicles and marine vessels; aviation emission reduction strategies; alternative fuels research and development; establishing an Alaska greenhouse gas emission reporting program; establishing goals for statewide greenhouse gas emission reductions; encouraging the state government to lead by example; integrating this Climate Change Mitigation Strategy with Alaska's Energy Plan; and exploring market-based systems to manage greenhouse gas emissions. These recommendations have not been implemented in Alaska despite MAG's estimation that these recommendations would have reduced Alaska's GHG emissions by approximately 19% by 2025 as compared to Alaska's calculations of GHG levels projected for 2025 in MAG's 2009 report.

218. In its 2009 final report, MAG recommended that the State of Alaska establish greenhouse gas emissions goals of 20% below 1990 greenhouse gas emission levels by 2020 and 80% below 1990 levels by 2050. These recommendations were not implemented. According to MAG, these recommendations corresponded to the best available science at the time, however they do not correspond to the current best available science, which requires at least a 9.2% annual reduction in CO_2 emissions per year starting in 2018.

219. The Alaska Climate Change Sub-Cabinet released several reports outlining recommendations to the Governor regarding the adaptation and mitigation of climate change. Additionally, the Sub-Cabinet completed a greenhouse gas inventory for the State of Alaska, outlining the sources of Alaska's greenhouse gas emissions and projected emissions for future years.

220. After taking office as Governor on July 26, 2009, former ConocoPhilips executive, Sean Parnell, allowed the Sub-Cabinet to go dormant. The Sub-Cabinet has not convened since 2011.

221. To date, no significant action has been taken by the Alaskan government to fulfill its constitutional, statutory, and common law obligations to address GHG emissions in an effort to combat the effects of climate change in Alaska. Instead, Defendants have persisted in systemically implementing a Climate and Energy Policy of authorizing and promoting activities resulting in dangerous levels of GHG emissions.

Greenhouse Gas Emissions Levels and Accounting in Alaska

222. In its most recent GHG emissions inventory, dated March 12, 2015, DEC calculated Alaska's gross GHG emissions for 2010, the most recent year for which DEC provided data, at 43.04 million metric tons of carbon dioxide equivalent ("MTCO2e").

223. In "Alaska Greenhouse Gas Inventory and Reference Case Projections, 1990-2020" prepared by the Center for Climate Strategies ("CCS") for DEC in July 2007, CCS projected that by 2020, gross Alaskan emissions of greenhouse gases would rise to 61.5 MTCO2e. According to DEC's and CCS's data, Alaska's annual emissions are similar to those of Oregon, Nevada, and Connecticut -- all states that have 3.5-7 times the population of Alaska, and show that, on a per capita basis, Alaska's GHG emissions rank third in the nation.

224. However, neither the DEC nor the CCS GHG emissions inventories account for extraction-based emissions (emissions associated with the combustion of fuels extracted in Alaska, regardless of where such fuels are combusted.) Consequently, DEC's and CCS's inventories significantly underestimate Alaska's GHG emissions.

225. DEC does not have a rigorous and current accounting and GHG emissions inventory.

226. According to DEC's inventory data for 2010, not including emissions from fuels extracted in Alaska and combusted elsewhere, the largest sources of GHG emissions in Alaska resulted from activities related to the industrial sector (fuels used in industry as well as emissions from the oil, natural gas, and coal industries) (47.1% of statewide emissions) with industrial use and production of natural gas accounting for 33.0% of statewide emissions. The next largest source of greenhouse gas emissions was transportation (31%). The third largest source of emissions comes from fuels combusted in residential and commercial buildings (12%) and the fourth largest source was electricity production (8%).

227. In 2016, Alaska's utility-scale electricity generation sector's portfolio was based 67% on fossil fuels. Most of Alaska's rural residents are not connected to a utility-scale grid and rely on consumer-owned electric cooperatives for power, most of which use diesel-fueled electricity generators that produce significant levels of GHG emissions.

228. According to the U.S. Energy Information Administration ("EIA"), Alaska "one of the largest crude oil producers in the nation," ranking sixth in the nation in crude oil production. According to the EIA, Alaska ranks third in the nation in gross natural gas withdrawals. According to the EIA, Alaska ranks second only to Hawaii in the share of its electricity that is generated from petroleum liquids.

229. The EIA figures show that 3,229,968 million feet of cubic feet of natural gas were withdrawn in Alaska and that Alaska produced 490,000 barrels of crude oil per day in 2016.

Defendants' Climate and Energy Policy Allowing and Perpetuating Climate Change Dangers Violate Youth Plaintiffs' Fundamental Rights

230. Non-fossil-fuel based energy generation and transportation systems are feasible and technologically available to employ in Alaska.

231. Notwithstanding their longstanding knowledge of the dangers that GHG emissions pose to Youth Plaintiffs, Defendants have historically engaged in and continue to persist in a systemic pattern and practice of policies, customs, and actions that causes emissions of dangerous and substantial levels of GHG pollution into the atmosphere within Alaska and outside of its borders. Defendants' affirmative aggregate and systemic actions and omissions constitute their Climate and Energy Policy, which involves systemic authorization, permitting, encouragement, and facilitation of activities resulting in dangerous levels of GHG emissions, without regard to Climate Change Impacts or any climate change mitigation standards, while perpetually denying and delaying development of climate change mitigation standards.

232. Consistent with, providing further evidence for, and in furtherance of Defendants' Climate and Energy Policy, DEC and Commissioner Hartig denied Youth Plaintiffs' Petition for Rulemaking on September 27, 2017.

233. Defendants have taken no actions designed to reduce GHG emissions in Alaska as called for by current science in spite of numerous requests to do so and in spite of recommendations for GHG emissions mitigation and regulation from within Alaska's government.

234. By and through their Climate and Energy Policy, as evidenced by their aggregate, system-wide affirmative actions, Defendants cause and contribute to dangerous levels of GHG emissions and Climate Change Impacts. For example:

a. Defendants lead and coordinate statewide energy policy and program development;

b. Defendants permit the operation of facilities and activities that emit significant levels of GHG emissions, including but not limited to projects that burn and promote the use of fossil fuels (for instance, coal-fired power plants);

c. Defendants permit surface coal mining and reclamation in Alaska;

d. Defendants authorize through licenses and leases the exploration and extraction of oil and gas in Alaska;

e. Defendants permit oil and gas drilling in Alaska;

f. Defendants permit the construction, modification, and operation of oil and gas pipelines and facilities;

g. Defendants continue to actively and aggressively pursue expansion of oil and gas development in Alaska, and have even proposed increased extraction of fossil fuels in Alaska, including in the Arctic National Wildlife Refuge;

h. Defendants authorize and certify fossil fuel-based utilities to operate;

i. Defendants engage in a systemwide pattern and practice of issuing permits, licenses, leases, and authorizations across departments and offices without climate change planning or science-based limits on the

amount of GHGs that can be safely released in order to protect the constitutional rights of these Youth Plaintiffs and future generations of Alaskans for whom they stand.

j. Defendants authorize the development and extraction of significant amounts of fossil fuels that are not consumed in Alaska, but shipped outside the state, contributing to climate change.

k. The aforementioned systemic actions, which make up Alaska's Energy and Climate and Energy Policy, omit any plan for mitigating climate change and protecting the Public Trust Resources of the state or its children and future generations.

235. As a result of the dangerous levels of GHG emissions caused by Defendants' implementation of their Climate and Energy Policy, and the aggregate and systemic affirmative actions and omissions taken pursuant thereto and as a part thereof, Youth Plaintiffs are being harmed and face an imminent risk of increasing and likely catastrophic harm.

236. Defendants Climate and Energy Policy is ongoing, in spite of their knowledge of its dangers and in spite of requests by these Youth Plaintiffs to mitigate the harm they are causing to Plaintiffs. Defendants have made clear their Climate and Energy Policy will continue. Among other things:

a. Defendants have persisted in a wrongful and systemic course of conduct affirmatively authorizing, permitting, and promoting dangerous levels of GHG emissions since at least the 1990's;

b. Defendants know and have known that their Climate and Energy Policy, and the affirmative aggregate and systemic actions taken pursuant thereto and as part thereof, cause the rights of Youth Plaintiffs to be violated;

c. Defendants have not implemented their own recommendations for climate stabilization, for instance the recommendations Defendants participated in developing, or received through ACIAC, the Cross-Cutting Technical Work Group, MAG, and the Sub-Cabinet;

d. Defendants have not taken prompt action to end their wrongful Climate and Energy Policy and the systemic course of illegal conduct taken pursuant thereto;

e. Defendants have not implemented their authority to reduce Alaska's GHG emissions by levels that preserve the rights of Plaintiffs;

f. Defendant DEC rejected and denied a petition by these Plaintiffs to establish by regulation a statewide climate recovery plan pursuant to the best available science to mitigate climate change by reducing the state's emissions; and

g. Plaintiffs reasonably believe similar conduct will continue in light of their status as young people, their Petition's rejection, past experience, and Defendants' continuing implementation of their Climate and Energy Policy despite the scientific consensus that we are now in the danger zone with climate change.

237. Defendants' historic and ongoing implementation of their Climate and Energy Policy is a systemic problem that Defendants are perpetuating. Defendants have allowed, and continue to allow, emitters to treat the atmosphere as a dump for their CO_2 and GHG emissions. By and through their Climate and Energy Policy, Defendants have allowed dangerous and unlawful levels of GHG emissions and violated the Public Trust rights and other constitutional rights of Plaintiffs. Defendants have placed Plaintiffs in a position of danger with deliberate indifference to their safety by and through the implementation of their Climate and Energy Policy.

238. Since the 1990's, Defendants have deliberately taken a series of actions that threaten the integrity of Public Trust Resources that are being harmed by climate change.

239. By and through their Climate and Energy Policy, Defendants prioritize fossil-fuel based energy generation and transportation systems over renewable energy sources and prioritize cost savings for the current generation over the constitutional rights of Plaintiffs.

240. By and through their Climate and Energy Policy, as evidenced by and implemented through their affirmative aggregate and systemic actions, Defendants have caused, contributed to, and or exacerbated dangerous levels of atmospheric GHGs, climate change, and Climate Change Impacts in violation of Youth Plaintiffs fundamental and inalienable constitutional rights.

COUNT 1

Violation of Youth Plaintiffs' Substantive Due Process Rights
Alaska Constitution, Article I, Section 7

241. Youth Plaintiffs hereby re-allege and incorporate by reference each of the allegations set forth above.

242. Article I, Section 7 of the Alaska Constitution recognizes and preserve the fundamental right of citizens to be free from government actions that harm life, liberty, and property without due process of law. These inherent and inalienable rights reflect the basic societal contract of the United States and Alaska Constitutions to protect citizens and posterity from government infringement upon basic freedoms and basic (or natural) rights. The rights to life, liberty, and property have evolved and the United States Supreme Court and Alaska Supreme Court have recognized that there are certain liberty interests protected by the due process clause that are not explicitly enumerated in the Bill of Rights. These rights, including "unenumerated rights," belong to present generations as well as to our "posterity" (or future generations).

243. For decades, Defendants have known about the dangers to Youth Plaintiffs created by excessive emissions of CO_2 and other GHGs. Acting with full appreciation of the consequences of their conduct, Defendants knowingly caused and contributed to, and continue to knowingly cause and contribute to, dangerous interference with our atmosphere and climate system by and through their Climate and Energy Policy and the historic and ongoing affirmative and systemic actions taken pursuant thereto and as part thereof.

244. A stable climate system, including the atmosphere and the oceans, is a critical component of and necessary foundation for Youth Plaintiffs' rights to life, liberty, and property. Our climate system has been, and continues to be, harmed by Defendants. By and through Defendants' Climate and Energy Policy, as evidenced by and

implemented through their affirmative aggregate and systemic actions, Defendants have harmed and continue to harm our climate system with full appreciation of the resulting effects. Defendants have directly infringed Youth Plaintiffs' substantive due process rights because Defendants have caused and contributed to dangerous levels of atmospheric CO_2 concentrations that interfere with a stable climate system required by Youth Plaintiffs and future generations. Present concentrations of CO_2 concentrations and continuing CO_2 and GHG emissions, caused and contributed to by Defendants by and through Defendants' historic and ongoing implementation of their Climate and Energy Policy, endangers Youth Plaintiffs' lives, liberty, and property and other unenumerated substantive due process rights, including the rights to personal security, bodily integrity, and autonomy, and to a stable climate system that sustains human life and liberty.

245. By and through Defendants' Climate and Energy Policy, Defendants have been and are infringing on Youth Plaintiffs' right to life by causing dangerous CO_2 concentrations in the atmosphere and dangerous interference with Alaska's climate system. Defendants have knowingly endangered Youth Plaintiffs' personal security, bodily integrity, safety, health, and welfare by and through their Climate and Energy Policy and the historic and ongoing affirmative and systemic actions taken pursuant thereto and as part thereof. This deliberate conduct by Defendants has cumulatively resulted in dangerous levels of atmospheric CO_2, infringing Youth Plaintiffs' fundamental substantive due process rights to life, liberty, and property and other unenumerated rights, including the rights personal security, bodily integrity, and autonomy and to a stable climate system that sustains human life and liberty.

246. Defendants' Climate and Energy Policy, and the affirmative aggregate and systemic actions taken pursuant thereto and as part thereof, are infringing Plaintiffs' rights to liberty by causing and contributing to Climate Change Impacts, placing Youth Plaintiffs in a position of danger within dangerous atmospheric levels of CO_2 and a destabilized climate system. Defendants' Climate and Energy Policy, as evidenced by and implemented through Defendants' affirmative aggregate and systemic actions, has caused dangerous and increasing levels of atmospheric CO_2, harming Youth Plaintiffs' dignity, autonomy, personal security and safety, and other liberty interests, including their capacity to provide for their basic human needs, safely raise families, learn and practice their religious and spiritual beliefs, learn and transmit their native cultural traditions and practices, maintain their bodily integrity, and lead lives with sufficient access to clean air, water, shelter, and food.

247. Defendants' Climate and Energy Policy and Defendants' actions taken pursuant thereto and as parts thereof, if not fundamentally altered without delay, will infringe Youth Plaintiffs' fundamental right to their property interests.

248. Youth Plaintiffs are now suffering harm, and will increasingly suffer harm absent relief from this Court, from Defendants' Climate and Energy Policy, by and through which Defendants knowingly have caused and contributed to and continue to cause and contribute to Climate Change Impacts and the destabilization of our climate system.

249. Defendants' Climate and Energy Policy, as evidenced by and implemented through Defendants' affirmative aggregate and systemic actions, does not operate to secure, and is not narrowly tailored to achieve a more compelling state interest than

Youth Plaintiffs' rights to life, liberty, and property, and other unenumerated rights, including the rights to personal security, bodily integrity, and autonomy, and to a stable climate system that sustains human life and liberties, nor can it satisfy intermediate scrutiny or rational basis review.

COUNT 2

State-Created Danger Violates Youth Plaintiffs' Due Process Rights
Alaska Constitution, Article I, Section 7

250. Youth Plaintiffs hereby re-allege and incorporate by reference each of the allegations set forth above.

251. For decades, Defendants have known of the dangers to Plaintiffs created by excessive emissions of CO_2 and other GHGs. In spite of this longstanding knowledge, with full appreciation of the consequences of their conduct, Defendants knowingly caused and contributed to, and continue to knowingly cause and contribute to, dangerous interference with our atmosphere and climate system by and through their Climate and Energy Policy and the historic and ongoing affirmative and systemic actions taken pursuant thereto and as part thereof, placing Youth Plaintiffs in a position of danger with deliberate indifference to their safety.

252. After knowingly creating this dangerous situation for Youth Plaintiffs, Defendants continue to knowingly enhance that danger with deliberate indifference to Youth Plaintiffs' safety by authorizing and allowing dangerous levels of GHG emissions by and through their Climate and Energy Policy, thereby violating Plaintiffs' substantive due process rights under Article I, Section 7 of the Alaska Constitution.

253. After placing Youth Plaintiffs in a position of climate danger, Defendants have continued to act with deliberate indifference to the known danger they helped create

and enhance. A destabilized climate system poses unusually serious risks of harm to Plaintiffs' lives, personal security, bodily integrity, and autonomy. Defendants have had longstanding, actual knowledge of the serious risks of harm and have not taken necessary and feasible steps to address and ameliorate the known, serious risk to which they have exposed Plaintiffs. With deliberate indifference, Defendants have not implemented recommendations for climate stabilization or any other comprehensive remedial measures to effectively reduce Alaska's CO_2 emissions consistent with levels that would adequately protect Youth Plaintiffs from dangerous climate destabilization.

254. Having placed Youth Plaintiffs in a position of danger with deliberate indifference to their safety, despite their longstanding knowledge of the dangers of GHG emissions, and despite extended opportunities spanning multiple decades, Defendants have not utilized or implemented their authority to require and implement reductions of Alaska's GHG emissions at rates that would preserve the rights of Youth Plaintiffs to life, liberty, personal security, bodily integrity, and autonomy, other unenumerated rights, and to a stable climate that sustains human life, in further violation of Youth Plaintiffs' substantive due process rights.

COUNT 3
Violation of the Equal Rights, Opportunities, and Protection
Alaska Constitution, Article I, Section 7

255. Youth Plaintiffs hereby re-allege and incorporate by reference each of the allegations set forth above.

256. Article I, Section 1 of the Alaska Constitution prohibits Defendants from pursuing policies and taking actions that discriminate against individuals or groups with respect to their fundamental rights or as members of a protected class.

257. Many of Youth Plaintiffs are members of the class of children, and all are members of the class of youth. Youth and children are a separate suspect and/or quasi-suspect class in need of extraordinary protection from the political process pursuant to the principles of equal protection. As evidenced by their Climate and Energy Policy, and the affirmative aggregate and systemic actions taken pursuant thereto and as part thereof, Defendants have a long history of deliberately discriminating against youth and future generations, including Youth Plaintiffs, in exerting their sovereign authority for the economic benefit of industry and prior and present generations of adults. Many of Youth Plaintiffs are children, an insular minority with no voting rights and little political power over Defendants and their systemic policies, practices, customs, and actions. As youth, Youth Plaintiffs have immutable age and generational characteristics that they cannot change. They are the living generation that will be most affected by the actions of Defendants.

258. Youth Plaintiffs have no avenue of redress other than this Court, as they cannot otherwise challenge or alter the systemic policies, practices, customs, and actions of Defendants. Youth Plaintiffs will disproportionately experience the irreversible and catastrophic impacts of a destabilized climate system, and ocean acidification. The adults living in our country today will not experience the full scope or degree of catastrophic harms that Youth Plaintiffs will experience.

259. For purposes of the present action, Plaintiffs should be treated as a protected class because the overwhelming majority of harmful effects caused by Defendants, by and through their Climate and Energy Policy, will occur in the future. As Youth Plaintiffs include citizens presently below the voting age, this Court should

determine that they must be treated as a protected class, and that state policies, practices, customs, and actions that disproportionately harm and discriminate against and endanger them must be invalidated and rectified.

260. By and through their Climate and Energy Policy, as evidenced by and implemented through their affirmative aggregate and systemic actions, Defendants have deliberately favored the interests of prior and present generations of adults to the long-term detriment of Youth Plaintiffs – precisely the sort of dysfunctional majoritarian outcome that our constitutional democratic system of government is designed to check. Such a check is especially appropriate here because, substantially as a result of Defendants' Climate and Energy Policy, the climate system will soon pass crucial tipping points after which Youth Plaintiffs will no longer be able to secure equal rights, opportunities and protection under the law and protection against an uninhabitable climate system.

261. By and through Defendants' Climate and Energy Policy, as evidenced by and implemented through their affirmative aggregate and systemic actions, Defendants have discriminated and continue to discriminate against Youth Plaintiffs' in the exercise of their fundamental and inalienable constitutional rights to life, liberty, and property, and other unenumerated rights, including their rights to personal security, bodily integrity, and autonomy, and to a climate system that sustains human life. By and through their Climate and Energy Policy, Defendants' have materially caused and contributed to, and continue to materially cause and contribute to, irreversible climate damage, harming Youth Plaintiffs and abridging central precepts of equality. As a result, the harm caused by Defendants has denied Youth Plaintiffs the same protection of fundamental rights

afforded to prior and present generations of adult citizens. The imposition of this disability serves only to disrespect and subordinate Youth Plaintiffs as members of the class of youth and children.

262. Defendants' Climate and Energy Policy, and the affirmative aggregate and system actions taken pursuant thereto and as part thereof, which discriminate against Youth Plaintiffs as members of a protected class, and with respect to their fundamental rights, cannot and does not operate to secure, and is not narrowly tailored to achieve, a more compelling state interest than Youth Plaintiffs' fundamental and inalienable constitutional rights to life, liberty, property, personal security, bodily integrity, autonomy, a stable climate system that sustains human life and liberty, rights under the Public Trust Doctrine, and other unenumerated rights, nor their right to be free from unlawful discrimination under the equal protection clause. Neither can the same satisfy intermediate scrutiny or rational basis review, or any level of scrutiny under the sliding-scale approach to equal protection analysis.

COUNT 4

Violation of the Public Trust Doctrine

263. Youth Plaintiffs hereby re-allege and incorporate by reference each of the allegations set forth above.

264. Alaska's Public Trust Doctrine traces its roots to historic common law principles governing the sovereign's management of fish, wildlife, and water resources, principles Alaska's framers enshrined in Article VIII of the Alaska Constitution. As an inherent attribute of sovereignty, the Public Trust Doctrine predates Alaska's Constitution and is preserved, rather than created, but it.

265. Youth Plaintiffs are beneficiaries of rights under the Public Trust Doctrine, rights that are secured by Article VIII of the Alaska Constitution. Under the Public Trust Doctrine, Defendants are obligated to manage Alaska's vital natural resources, including all Public Trust Resources, to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations.

266. Under Article VIII of the Alaska Constitution, Public Trust Resources protected under the Public Trust Doctrine explicitly include, but are not limited to, water, mineral, wildlife, and fish resources. Alaska's Public Trust Resources also include those other essential resources that are of vital public concern to the citizens of Alaska, including at least the air (atmosphere), the sea, the shores of the sea, surface lands, and submerged lands. The overarching Public Trust Resource is the climate system, which encompasses the atmosphere, waters, oceans, and biosphere.

267. The atmosphere is intertwined and inextricably linked with all of Alaska's other Public Trust Resources including those explicitly recognized in Article VIII, and is therefore also held in trust by Defendants for the benefit of present and future Alaskans under the Public Trust Doctrine. The atmosphere is both air and water, the first two resources Emperor Justinian recognized in the Roman Code, the Institutes of Justinian, the first known written articulation of the Public Trust Doctrine. The atmosphere contains more freshwater than the rivers and lakes of Alaska and indeed contains atmospheric rivers that provide precipitation for Alaska. The atmosphere, the oceans, other freshwater resources and the biosphere are all interconnected. Harm to the atmosphere negatively affects water, wildlife, and fish resources, as well as other Public Trust Resources. Harm to the atmosphere also harms the public's ability to use, access, enjoy, and navigate other

Public Trust Resources, purposes and interests protected under the Public Trust Doctrine and for Public Trust Resources must be managed, preserved, and protected.

268. The Public Trust Doctrine requires all sovereign governments as trustees to maintain control, protect, preserve, and prevent substantial impairment to and waste of Public Trust Resources for the beneficiaries of the trust – all present and future generations of its citizens. The Public Trust Doctrine is an attribute of sovereignty that cannot be surrendered or abrogated. The rights of the public as beneficiaries under the Public Trust Doctrine predate Alaska's Constitution and are secured, not created, by it.

269. Defendants, as trustees, have an obligation to manage and hold in trust all Public Trust Resources for the benefit of all Alaskans, including Youth Plaintiffs and future generations of Alaskans, and to refrain from acting in a manner that abdicates control of Public Trust Resources, alienates Public Trust Resources from the trust, or results in waste or substantial impairment of Public Trust Resources.

270. Defendants, as trustees, have a duty to administer and manage Public Trust Resources with loyalty to and in the interest of trust beneficiaries – all present and future generations of Alaskans, including Youth Plaintiffs. As trustees, Defendants have a duty of impartiality prohibiting them from favoring one class or generation of beneficiaries over another in the management of Public Trust Resources. Present and future generations are equally protected classes of beneficiaries under Alaska's constitution. Thus, when carrying out its obligations as trustees, Defendants must treat present and future generations equally and cannot be shortsighted. Defendants may not manage Public Trust Resources in a manner which benefits the present class of beneficiaries at the expense and to the detriment of future beneficiaries.

271. Defendants, as trustees, have a duty of care to exercise appropriate skill, prudence, and caution in managing Public Trust Resources.

272. By and through Defendants' Climate and Energy Policy, as evidenced by and implemented through Defendants' affirmative aggregate and systemic actions, Defendants have unconstitutionally caused, and continue to cause and allow, substantial impairment to Public Trust Resources, in abdication and violation of their duties to safeguard and to prevent substantial impairment to and waste of Public Trust Resources. Such abdication and violation of duty abrogates the ability of succeeding members of the legislative and executive branches to provide for the survival and welfare of Alaska's citizens and to promote the endurance of our state.

273. By and through Defendants' Climate and Energy Policy, as evidenced by and implemented through their affirmative aggregate and systemic actions, Defendants have abdicated control over and alienated substantial portions and capacities of our atmosphere and climate system in favor of the short-term interests of private parties so that these private parties can treat our atmosphere as a dump for their carbon emissions and profit off of developing Alaska's fossil fuel resources, which also results in carbon emissions to the atmosphere. Such policy, practice, and custom prejudices the Public Trust rights and interests of Youth Plaintiffs and future generations of beneficiaries in violation of Defendants' duties of loyalty, impartiality, and prudence. Defendants have abrogated their duty of care to manage the atmosphere in a manner that promotes and does not substantially impair the public interest in use, enjoyment, access, and navigation of Public Trust Resources. For instance, climate change and ocean acidification are having increasingly devastating impacts to Alaska's fisheries. Such abdication and

violation of duty abrogates the sovereign powers of succeeding members of the executive and legislative branches to provide for the survival and welfare of Youth Plaintiffs and future generations.

COUNT 5

DEC and Commissioner Hartig's Denial of Youth Plaintiffs' Petition Violates Youth Petitioners' Constitutional Rights

274. Youth Plaintiffs hereby re-allege and incorporate by reference each of the allegations set forth above.

275. In the context of the aforementioned climate dangers and Defendants' ongoing implementation of their Climate and Energy Policy, DEC and Commissioner Hartig's Denial of Youth Plaintiffs' Petition for Rulemaking violates Youth Plaintiffs' constitutional rights and is a further basis for relief.

276. Defendants DEC and Commissioner Hartig denied Youth Plaintiffs' Petition for Rulemaking pursuant to and as part of Defendants' Climate and Energy Policy - a systemic practice and custom of authorizing, permitting, facilitating, encouraging, and otherwise allowing activities that result in dangerous levels of GHG emissions and perpetual delay of GHG emissions reductions standards.

277. By and through Defendants DEC and Commissioner Hartig's denial of Youth Plaintiffs' Petition for Rulemaking, consistent with and as part of Defendants' Climate and Energy Policy, Defendants continue to knowingly authorize, permit, facilitate, encourage, and otherwise allow activities that result in dangerous levels of GHG emissions and to delay and deny GHG emissions reductions standards, thereby causing, contributing, and/or exacerbating dangerous interference with our atmosphere and climate system.

278. By continuing to allow dangerous levels of GHG emissions in Alaska and by continuing to allow and encourage governmental authorization, permitting, facilitation, encouragement, and general allowance of activities resulting in dangerous levels of GHG emissions in Alaska, Defendants DEC and Commissioner Hartig's denial of Youth Plaintiffs' Petition for Rulemaking is arbitrary and violates Youth Plaintiffs' fundamental and inalienable constitutional rights to life, liberty, and property; to equal rights, opportunities, and protection under the law by discriminating against Youth Plaintiffs as members of a protected class and with respect to their fundamental rights; to a stable climate system that sustains human life and liberty; and Youth Plaintiffs' rights as beneficiaries under Alaska's Public Trust Doctrine.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully requests that the Court:

1. Declare that Defendants have constitutional duties and constitutional and statutory authority to protect and refrain from infringing Plaintiffs' fundamental and inalienable constitutional rights to life, liberty, and property; equal rights, opportunities and protection under the law; and other unenumerated rights, including the right to a stable climate system that sustains human life and liberty.

2. Declare that Defendants have constitutional duties and constitutional and statutory authority under the Public Trust Doctrine to protect Alaska's waters, atmosphere, land, fish, wildlife, and other Public Trust Resources from substantial impairment, waste, and alienation, and to manage such resources prudently and with

impartiality and loyalty to present generations, including Youth Plaintiffs, and future generations.

3. Declare that Defendants, by and through their Climate and Energy Policy, implemented through their historical and ongoing affirmative aggregate and systemic actions, have materially caused, contributed to, and/or exacerbated climate change in violation of Youth Plaintiffs' fundamental and inalienable constitutional rights to life, liberty, and property, and to a stable climate system that sustains human life and liberty.

4. Declare that Defendants, by and through their Climate and Energy Policy, implemented through their historical and ongoing affirmative aggregate and systemic actions, have placed Plaintiffs in a position of danger with deliberate indifference to their safety in a manner that shocks the conscience such that Defendants' ongoing act of omission in not reducing Alaska's GHG emissions consistent with rates that would avoid dangerous climate interference further violates Youth Plaintiffs' fundamental and inalienable constitutional rights to life, liberty, and property, and to a stable climate system that sustains human life and liberty.

5. Declare that Defendants, by and through their Climate and Energy Policy, implemented through their historical and ongoing affirmative and systemic aggregate actions, have materially caused, contributed to, and/or exacerbated climate change and discriminated against Youth Plaintiffs as members of a protected class, and with respect to their fundamental rights, in violation of Youth Plaintiffs' fundamental and inalienable constitutional right to equal rights, opportunities, and protection under the law.

6. Declare that Defendants, by and through their Climate and Energy Policy, implemented through their historical and ongoing affirmative aggregate and systemic

actions have violated their legal duties to retain control, protect, prudently manage, and prevent substantial impairment to the State's waters, atmosphere, land, fish, wildlife, and other Public Trust Resources, and to manage the State's Public Trust Resources with loyalty and impartiality to Youth Plaintiffs, under the Public Trust Doctrine, as expressed in the Alaska Constitution.

7. Declare that Defendant Alaska Department of Environmental Conservation and Defendant Commissioner Lawrence Hartig's denial of Youth Plaintiffs' petition for rulemaking violates Youth Plaintiffs' fundamental and inalienable constitutional rights to life, liberty, and property; to equal rights, opportunities, and protection under the law; to a stable climate system that sustains human life and liberty; and Youth Plaintiffs' rights as beneficiaries under Alaska's Public Trust Doctrine.

8. Enjoin Defendants from further violations of Youth Plaintiffs' fundamental and inalienable constitutional rights through further implementation of their Climate and Energy Policy.

9. Order Defendants to prepare a complete and accurate accounting of Alaska's GHG emissions, including an accounting of Alaska's in-boundary and extraction-based emissions.

10. Order DEC, Commissioner Hartig, and Governor Walker, in collaboration with Defendants, to develop and submit to the Court by a date certain an enforceable state climate recovery plan, which includes a carbon budget, to implement and achieve science-based numeric reductions of Alaska's in-boundary and extraction-based emissions consistent with global emissions reductions rates necessary to stabilize the

climate system and protect the vital Public Trust Resources on which Youth Plaintiffs depend;

11. Retain continuing jurisdiction over this matter for the purposes of enforcing the relief awarded;

12. Declare Plaintiffs are the prevailing party and award them all costs and attorney's fees to which they are entitled to pursuant to Civil Rule 79 and AS 09.06.010(c)(1); and

10. Award Plaintiffs such other and further relief as the Court deems just and equitable.

Respectfully submitted this 27th day of October 2017.

Attorneys for Plaintiffs

_____

Brad D. De Noble, ABA #9806009
De Noble Law Offices LLC
11517 Old Glenn Hwy, Suite 202
Eagle River, Alaska 99577

Andrew L. Welle, Pro Hac Vice Pending
Oregon Bar #154466
Attorney at Law
1216 Lincoln Street
Eugene, Oregon 97401