

IN THE COURT OF APPEALS OF THE STATE OF OREGON

OLIVIA CHERNAIK, a minor and resident of Lane County, Oregon; LISA CHERNAIK, guardian of Olivia Chernaik; KELSEY CASCADIA ROSE JULIANA, a minor and resident of Lane county, Oregon; and CATIA JULIANA, guardian of Kelsey Juliana,
Plaintiffs-Appellants,

v.

KATE BROWN, in her official capacity as Governor of the State of Oregon;
and STATE OF OREGON,
Defendants-Respondents.

Lane County Circuit Court
161109273

A1519826

PLAINTIFFS-APPELLANTS' OPENING BRIEF AND EXCERPTS OF RECORD

Appeal from the General Judgment of the Circuit Court for Tillamook County;
Honorable Karsten H. Rasmussen, Judge

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I. STATEMENT OF THE CASE

A. Nature of the Case and Relief Sought

This appeal seeks review of a general judgment dismissing Plaintiffs' amended complaint for declaratory and injunctive relief brought under the Uniform Declaratory Judgment Act, ORS 28.010 to 28.140. Plaintiffs Olivia and Lisa Chernaik and Kelsey and Cathy Juliana brought suit to uphold their rights, as beneficiaries under the public trust doctrine to the use of Oregon's public resources. Those inalienable rights are threatened with irreversible harm as a result of climate change and ocean acidification, due to dangerous levels of greenhouse gas emissions, and the predicted adverse impacts on Oregon's natural resources. Plaintiffs seek a declaration that certain natural resources, including waters of the state, wildlife, and the atmosphere, are public trust resources. Plaintiffs also seek a declaration that Governor Brown and the State of Oregon as trustees have failed to uphold the fiduciary obligations under the trust by failing to take action to achieve necessary reductions in emissions of greenhouse gasses within the State in order to prevent, and remedy the existing, substantial impairment of public trust resources.

This is the second time that this case has come before the Court of Appeals. In 2014, this Court reversed the circuit court's judgment dismissing the case for lack of subject matter jurisdiction. *See Chernaik v. Kitzhaber*, 263

Or App 463 (2014) (“*Chernaik I*”). Plaintiffs now seek review of the circuit court’s ruling on the merits.

B. Nature of the Judgment

Plaintiffs appeal the judgment entered by the trial court on June 23, 2015, granting Defendants’ motion for summary judgment and denying Plaintiffs’ motion for partial summary judgment for declaratory relief.

C. Basis for Appellate Jurisdiction

The judgment is subject to appeal pursuant to ORS 19.205, ORS 19.270, and ORS 28.070.

D. Date of Judgment and Notice of Appeal

The judgment was entered on June 23, 2015. Plaintiffs filed and served the notice of appeal on July 7, 2015.

E. Questions Presented on Appeal

1. In ruling on the cross motions for summary judgment under ORCP 47, the trial court stated that it “makes no comment at this juncture about the actual facts” relating to climate change. It based this statement on its holding that facts related to climate change are “legislative facts” and thus the “parties are not entitled as a matter of right to present evidence to demonstrate those facts.”

Did the trial court err as a matter of law in denying Plaintiffs’ motion for partial summary judgment and granting Defendants’ motion for summary

judgment without determining based on the pleadings, affidavits, and admissions on file whether there is a genuine issue as to any material fact relating to climate change and the impacts on Oregon's public trust resources?

2. Did the trial court err by ruling the scope of the public trust doctrine does not encompass waters of the State, wildlife, and the atmosphere?

3. Did the trial court err by ruling the State of Oregon as trustee has no affirmative fiduciary obligation under the public trust doctrine to prevent substantial impairment of public trust resources?

4. Did the trial court err by ruling the State upheld its fiduciary obligations under the public trust doctrine despite the State's admission that it is falling far behind its own non-binding targets for greenhouse gas reductions?

5. Did the trial court err as a matter of law and contrary to *Chernaik I* when it ruled prematurely that Plaintiffs' hypothetical future requests for injunctive relief, which had not yet been presented to the trial court, violate the separation-of-powers doctrine?

F. Summary of the Argument

This case now returns to the Court of Appeals for a second time, and these youth plaintiffs continue to call on the judicial branch of government protect their legal rights and to hold the executive and political branches accountable for failing to take meaningful action on climate change. These youth seek to enforce their rights under the public trust doctrine as beneficiaries

of an inalienable trust that imposes fiduciary obligations on the State of Oregon to prevent substantial impairment of public resources essential to the survival of humankind, including water, wildlife, submerged lands, and the atmosphere itself. In the absence of judicially-imposed checks and balances, the youth of today, including these plaintiffs, and future generations of Oregonians will suffer disastrous consequences as a result of severe droughts, dwindling water supplies, rising sea levels, ocean acidification, unnaturally frequent and intense wildfires, and increased rates of disease and adverse impacts on human health.

In the court below, youth plaintiffs were supported by the foremost experts in the world on the impending threats facing the State of Oregon as a result of catastrophic climate change and presented an extensive factual and scientific record that was wholly ignored by the trial judge. Those experts include Dr. Phil Mote, the Director of the Oregon Climate Change Research Institute at Oregon State University,¹ as well as Dr. James Hansen, Director of the Climate Science, Awareness and Solutions Program at Columbia University's Earth Institute and past Director of the NASA Goddard Institute for Space Studies.

In denying Plaintiffs' motion for summary judgment and granting Defendants' motion, the trial court committed the following errors of law:

¹ The Oregon Legislature created OCCRI in 2007. *See* HB 3543 (2007); *Chernaik I*, 263 Or App at 467.

1. The trial court committed legal error by treating all facts relating to climate change as “legislative facts” as opposed to “adjudicative facts.” As a result, the trial court ignored entirely the vast factual and scientific record developed by the Plaintiffs and failed to apply the appropriate standard of review under ORCP 47.

2. The trial court committed legal error in holding that submerged and submersible lands subject to the equal footing doctrine are the only natural resources encompassed by the public trust doctrine in Oregon. The trial court ignored decades of Oregon case law, State statutes, and State regulations in declaring that waters of the state and fish and wildlife are not public trust resources, and the trial court similarly erred in failing to recognize the atmosphere as a public trust resource.

3. The trial court committed legal error in holding that the State as trustee does not have any affirmative fiduciary obligations owed to the beneficiaries of the trust. The trial court instead held that the public trust doctrine serves only as a restriction on the State’s ability to alienate real property. To deny a fiduciary obligation is to ignore the very nature of a trust and to eviscerate the purposes of the trust and the rights of the beneficiaries.

4. As a result of these errors, the trial court failed to reach the question of whether the State has upheld its fiduciary obligation to prevent the substantial impairment of public trust resources. Because the State’s non-

binding greenhouse gas reduction targets are inadequate to fulfill the State's fiduciary obligations, and the State admits it is not on track to meet these ineffective targets, Plaintiffs are entitled to a declaration of law that the State has violated its duties as trustee, which are owed to these youth beneficiaries.

5. The trial court committed its final legal error – and ignored this Court's holding in *Chernaik I* – by reaching out to issue an advisory opinion on the issue of injunctive relief and separation-of-powers before Plaintiffs presented to the Court a petition for supplemental relief under ORS 28.080.

Plaintiffs respectfully request that the Court of Appeals reverse the trial court on each of these legal issues and remand with instructions to grant Plaintiffs' motion for partial summary judgment, to deny Defendants' motion for summary judgment, and to conduct further proceedings consistent with the Court's order.

G. Statement of Facts

1. Procedural History

On May 4, 2011, Plaintiffs filed their amended complaint in Lane County Circuit Court seeking declaratory relief under ORS Chapter 28. [ER 1](#). Plaintiffs seek a declaration that Governor Brown and the State of Oregon have a fiduciary obligation under the public trust doctrine to prevent the substantial impairment of public trust assets, including waters of the State, submerged and submersible lands, fish and wildlife, and the atmosphere. [ER 3](#). Plaintiffs also

seek a declaration that Defendants have breached their fiduciary obligation by failing to regulate and reduce carbon dioxide emissions in the State of Oregon sufficiently to prevent the substantial impairment of Oregon's public trust resources. [ER 3](#).

On October 18, 2011, the State moved to dismiss the amended complaint under ORCP 21A(1) for lack of subject matter jurisdiction. In seeking to dismiss the amended complaint, the State stipulated that it would not challenge the scope or applicability of the public trust doctrine in its Rule 21 motion. *See Chernaik I*, 263 Or App at 469. The trial court granted the motion to dismiss, and Plaintiffs appealed.

On January 16, 2014, the Court of Appeals reversed. This Court held that:

“plaintiffs are entitled to a judicial declaration of whether, as they allege, the atmosphere ‘is a trust resource’ that ‘the State of Oregon, as a trustee, has a fiduciary obligation to protect * * * from the impact of climate change,’ and whether the other natural resources identified in plaintiffs’ complaint also ‘are trust resources’ that the state has a fiduciary obligation to protect. The answers to those questions will necessarily inform the court’s determination whether plaintiffs are entitled to any of the other relief that they request.”

Id. at 480.

On January 9, 2015, Plaintiffs filed a motion for partial summary judgment for declaratory relief,² and Defendants filed a motion for summary judgment. On April 7, 2015, the trial court heard oral argument on the cross motions. On May 11, 2015, the trial court issued its opinion and order denying Plaintiffs' motion and granting Defendants' motion. [ER 4-22](#).

2. *Plaintiffs and Defendants Agree on All Material Facts Relating to the Causes of Climate Change and the Impacts on Oregon's Natural Resources.*

The amended complaint lays out in great detail allegations of fact relating to the causes of climate change and the impacts on Oregon's natural resources. On September 29, 2014, the State filed its answer to the amended complaint and admitted virtually all of the material facts as to these two issues.

In particular, the State concedes "that anthropogenic greenhouse gas emissions have caused, and are causing, global climate change." [ER 30](#).

Defendants further admit that global climate change is causing, and is likely to continue to cause, significant adverse effects such as disruption of natural ecosystems, displacement or disappearance of some animal species, increases in the frequency and intensity of storm events and other extreme weather events, increases in the frequency and severity of droughts in some areas, warmer and more frequent periods of intense heat, rising sea levels, decreased agricultural productivity in some areas, sea level rise and coastal erosion.

Id.

² The four specific declarations of law sought by Plaintiffs are set forth on first page of their motion. [ER 23](#).

The State also agrees that:

- “global climate change poses risks to the health of all Oregonians.” [ER 32](#).
 - “the impact in Oregon of human-caused global climate change have been predicted to be severe if global carbon dioxide emissions are not curtailed.” [ER 32](#).
 - if “the atmosphere passes certain thresholds or tipping points of energy imbalance and planetary heating, the existing climatic conditions that exist today cannot be restored.” [ER 31](#).
 - “a further increase of average annual temperatures of 2° C (3.6° F) above current levels would cause severe, widespread and irreversible impacts.” [ER 31](#).
 - “there is still time to curb and reduce carbon dioxide emissions to avoid irrevocable changes to the atmosphere,” [ER 31](#) . and
 - a failure to take appropriate action may result in “the collapse of the earth’s natural systems leaving a planet that is largely unfit for human life.” [ER 31](#).
3. *Defendants do not Dispute Plaintiffs’ Evidence on the Level of Reductions in Greenhouse Gas Emissions That are Necessary to Avoid the Most Severe Effects to Oregon’s Natural Resources.*

Plaintiffs’ amended complaint sets forth detailed allegations on the steps needed to avoid the most catastrophic effects of climate change. At the time Plaintiffs filed the amended complaint, atmospheric carbon dioxide concentrations were at least 390 parts per million (ppm). [ER 2](#). Based on the best available science, Plaintiffs allege that those concentrations must be reduced to no more than 350 ppm by the end of the century. *Id.* ¶¶ 26-27. In order to achieve these levels, emissions “must begin to decline at a global

average of at least 6 percent per year, beginning in 2013, through 2050.” *Id.* ¶ 27.

Plaintiffs also submitted the expert declaration of Dr. Hansen, who describes a “glide path” of greenhouse gas reductions based on his most recent scientific work. ER 47. His prescription is “both technically and economically feasible, while sufficiently rigorous to constrain the period of ‘carbon overshoot’ and avoid calamitous consequences (greatly accelerating warming, ecosystem collapse, and widespread species extermination).” *Id.* ¶ 62. By reducing emissions by approximately 6 percent per year combined with improved agricultural and forestry practices, the atmosphere could be restored to approximately 350 ppm carbon dioxide concentrations within this century. *Id.* at ¶¶ 62-63.

The State has not disputed Plaintiffs’ allegations that 350 ppm is the maximum safe concentration of carbon dioxide in the atmosphere. ER 31. The State instead alleged that it was “without knowledge or information sufficient to form a belief” as to the necessary concentrations of carbon dioxide in the atmosphere. *Id.* Yet nowhere does the State argue or present evidence that 350 ppm is not the safe level and the State does not refute Plaintiffs’ expert declarations on this issue.

4. *In 2007, the Legislature Set Non-Binding Targets for Reductions in Greenhouse Gases, and the State Admits it Has Fallen Far Behind These Inadequate Targets.*

In 2007, the Oregon Legislature enacted the Global Warming Statute, (HB 3543 codified, in part, as ORS 468A.200-.260), in response to a report from the Governor’s Advisory Group on Global Warming that called for “immediate and significant action to address global warming and to begin to prepare for the affects of global warming.” ORS 468A.200(1). The legislature set non-binding targets for reductions in greenhouse gases:

- by 2010, arrest and begin to reduce Oregon’s greenhouse gas emissions;
- by 2020, reductions to 10% below 1990 levels; and
- by 2050, reductions to 75% below 1990 levels.

ORS 468A.205(1).

The legislature also created the Oregon Global Warming Commission, and gave it authority to track and evaluate progress towards these greenhouse gas reduction goals. ORS 468A.205(1)(e). Based on the findings of the Global Warming Commission, the State admitted in its Answer that “Oregon is likely to fall well short of the targets set by its greenhouse gas reduction and mitigation plan.” ER 34.³ While Plaintiffs do not agree that these targets are

³ The Commission’s 2015 Report to the Legislature was published on September 28, 2015 and is available at http://www.keeporegoncool.org/sites/default/files/ogwc-standard-documents/OGWC_Rpt_Leg_2015_final.pdf. The Commission again concluded that Oregon

adequate to prevent the catastrophic effects of climate change and ocean acidification, and the best available science supports this conclusion, the record is clear that the State is failing to meet even these outdated and inadequate targets.

II. FIRST ASSIGNMENT OF ERROR

The trial court committed reversible error by treating all facts relating to climate change as “legislative facts” and failing to apply the appropriate standard of review under ORCP 47 to determine based on the “pleadings, depositions, affidavits, declarations and admissions on file” whether there was a “genuine issue of any material fact.”

A. *Preservation of Error*

In its opinion and order, the trial court *sua sponte* held that all facts relating to climate change are legislative facts. ER 7. Neither party raised this issue in its brief, although the trial court raised the issue during the hearing on the cross motions for summary judgment. Plaintiffs preserved the error by timely filing of a Notice of Appeal with the Court of Appeals.

B. *Standard of Review*

Declaratory judgment actions that are equitable in nature are subject to *de novo* review by the Court of Appeals pursuant to ORS 19.415. See *C-Lazy-K Ranch, Inc. v. Alexanderson*, 243 Or App 168, 172-73 (2011); *Ken Leahy Const., Inc. v. Cascade Gen., Inc.*, 329 Or 566, 571 (1999).

is not on track to meet the 2050 goal and that “we must immediately begin taking more ambitious action that what we have seriously contemplated as a state historically.” *Id.* at 32.

C. *Argument on the First Assignment of Error*

The trial court erred as a matter of law by failing to apply the appropriate standard of review under ORCP 47. Instead of reviewing the pleadings, declarations, and admission on file, the trial court ignored the entirety of the record before it.

The court instead made the following statement: “That global warming poses a ‘serious threat’ is a ‘legislative finding’ in the sense that the Legislature believes it is true and has, accordingly, decided to act upon that finding.” ER 7. The lower court then stated that the “‘parties are not entitled as a matter of right to present evidence to demonstrate [legislative] facts.’” *Id.* (quoting *Ecumenical Ministries of Oregon v. Oregon State Lottery Comm’n*, 318 Or 551, 558 (1994)). Having decided that the parties were not entitled to present facts on the causes and impacts of climate change, the lower court, on its own accord, refused to address, or even discuss, the well-developed record. “In the context of the case at bar, this Court wishes to make clear that it makes no comment at this juncture about the actual facts, or lack thereof, related to global warming.” *Id.*

The trial court erred by refusing to analyze the “actual facts” relating to climate change, because these are adjudicative facts that were addressed by the parties in the record below.

“ * * * Adjudicative facts are simply the facts of the particular case. Legislative facts * * * are those which have relevance to the legal reasoning and the lawmaking process, whether in the formulation of a legal principle or ruling by a judge or court or in the enactment of a legislative body.”

Chartrand v. Coos Bay Tavern, 298 Or 689, 693 (1984) (quoting commentary to OEC 201(a)).

Oregon courts invoke the concept of legislative facts in very narrow circumstances, *e.g.*, when ruling on the admissibility of evidence or interpreting an ambiguous term in a statute. *See, e.g., Ecumenical Ministries v. Oregon State Lottery Comm’n*, 318 Or 551, 558 (1994); *State v. Branch*, 243 Or App 309, 321-22 (2011). Courts can take judicial notice of legislative facts in these limited circumstances without having to comply with the procedures set forth in OEC 201(a). *Ecumenical Ministries*, 318 Or at 558. Because those procedures do not apply, courts have held that “parties are not entitled as a matter of right to present evidence to demonstrate such facts.” *Id.* In *Branch*, for instance, this Court held that a court could take judicial notice of the speed of light as a scientific principle in ruling on whether measurements of distance from an electronic instrument were admissible. 243 Or App at 319-20.

In this case, the trial court erred as a matter of law because facts relating to climate change and the impacts on Oregon’s natural resources are “simply the facts of the particular case.” *Chartrand*, 298 Or at 893. Those facts provide the predicate for Plaintiffs’ request for declaratory relief and, at the appropriate

time, supplemental injunctive relief. This legal error is readily apparent because the trial court did not invoke the concept of legislative facts in ruling on the admissibility of evidence or interpreting an ambiguous statute, nor did the court take judicial notice of any facts. Instead, the lower court bluntly refused to comment “at this juncture about the actual facts, or lack thereof, relating to climate change.” ER 7.

This is surely not the outcome envisioned by this Court in *Chernaik I* where it held that Plaintiffs are entitled to a declaration of whether the atmosphere and other natural resources are “trust resources” that the State “has a fiduciary obligation to protect * * * from the impact of climate change.” 263 Or App at 481. This Court instructed that the “trial court must evaluate those allegations, in the first instance, after defendants have answered or otherwise responded on the merits to plaintiffs’ complaint.” *Id.* The trial court’s subsequent ruling on remand that all facts relating to climate change are “legislative facts,” which the parties may not litigate before the trier of fact, is plain legal error.

III. SECOND ASSIGNMENT OF ERROR

The trial court erred in determining which natural resources fall within the scope of the public trust doctrine. The court erred in limiting the scope of the public trust doctrine to the real property underlying navigable waters, which belongs to the State. The trial court wrongly excluded waters of the State, fish and wildlife, and the atmosphere from the scope of the public trust doctrine.

A. Preservation of Error

In its opinion and order, the trial court addressed the issue raised by Plaintiffs in their motion for partial summary judgment and as directed by this Court whether waters of the State, fish and wildlife, and the atmosphere are public trust resources. ER 12-15. Plaintiffs preserved the trial court's error by timely filing of a Notice of Appeal with the Court of Appeals.

B. Standard of Review

Declaratory judgment actions that are equitable in nature are subject to *de novo* review by the Court of Appeals pursuant to ORS 19.415. See *C-Lazy-K Ranch, Inc.*, 243 Or App at 172-73; *Ken Leahy Const., Inc.*, 329 Or at 571.

C. Argument on Second Assignment of Error

Under the public trust doctrine, the State of Oregon as trustee has a fiduciary obligation to protect essential natural resources in trust for current and future generations of Oregonians – the beneficiaries of the trust. See, e.g., *Corvallis Sand & Gravel Co. v State Land Bd.*, 250 Or 319, 333-35, 439 P2d 575, (1968) (the people of each state in their sovereign capacity “hold the absolute right to all their navigable waters, and the soils underneath them, for their own common use” and these sources are “ held by the state in trust for the benefit of the whole people of the state.”) (quotations omitted); *State v. Dickerson*, 356 Or 822, 832, 345 P 3d 447 (2015) (“title to animals * * * is held by the state, in its sovereign capacity in trust for all of its citizens”)

(quotations omitted); *Oregon Shores Conservation Coal. v. Or. Fish and Wildlife Comm'n*, 62 Or App 481, 493, 662 P2d 356 (1983) (“[The S]tate, as trustee for the people, bears the responsibility of preserving and protecting the right of the public to the use of the water * * *”); ORS 537.334(2) (recognizing the “public trust” inherent in the “public’s rights in the ownership and control of the waters of this state”); OAR 141-067-0150 (“public trust values” defined as “the rights and interests held by the public to use and enjoy submerged and submersible lands and waters of the state for fishing, navigation, recreation and commerce”); OAR 635-400-0010(9) (actions by the “Water Resources Department affecting instream water rights are limited by public trust obligations”).

The trial court committed legal error by declaring that the scope of the public trust doctrine does not encompass: (1) waters of the State; (2) fish and wildlife; and (3) the atmosphere. Instead, ignoring decades of contrary judicial precedent, statutory authority, and agency regulations, the trial court limited the scope of the public trust doctrine to only submerged and submersible lands.

1. Argument on First Sub-Assignment of Error – Waters of the State are a Public Trust Resource.

The trial court declared “the public trust doctrine does not encompass waters of the State.” ER 12. This declaration eviscerates the scope and

applicability of the public trust doctrine to an impermissibly narrow construction.

The trial court leans on *Corvallis Sand & Gravel Co.*, 250 Or at 334, in an effort justify its ruling that the public trust doctrine applies only to submerged or submersible lands and no other State natural resources. The court did this by differentiating “between the State’s *title* to the lands under navigable waters and navigable waters themselves.” ER 12. (emphasis added). In reaching its conclusion, the lower court: 1) ignored key admissions by Defendants that the doctrine encompasses more than submerged and submersible lands; 2) failed to distinguish Oregon case law that recognizes waters of the State as public trust assets; and 3) ignored statutory mandates that specifically include waters of the State and in-stream surface water rights held by the State in the public trust to benefit its citizens.

First, in their summary judgment motion brief, Defendants conceded that: “some in-stream water may be covered by the common law public trust doctrine.” ER 40. The trial court, however ignored Defendants’ admission.

Second, the trial court failed to address, much less controvert, Plaintiffs’ arguments that in *Morse v. Or. Div. of State Lands*, 285 Or 197, 201-02, 590 P. 2d 709 (1979), *Corvallis Sand & Gravel*, and *Cook v. Dabney*, 70 Or 529 532, 139 P. 721 (1914), the Oregon Supreme Court effectively held that the public

trust doctrine includes navigable waters and fisheries, not just the submersed lands beneath them. For example, in *Cook*, the Court found:

[U]pon admission of the state into the Union it was vested with the title to the lands under navigable waters, *subject, however, at all times to the rights of navigation and fishery. To all intents and purposes the title of the state was burdened with a trust, so to speak, in favor of those two occupations* [navigation and fishery].

Cook, supra, 70 Or at 532. (Emphasis added). Similarly, in *Corvallis Sand & Gravel*, the Court held:

When, therefore, Oregon was admitted into the Union, it acquired title to the submerged lands not by grant from the United States, but by virtue of its sovereignty. As stated by Chief Justice Taney in *Martin v. Waddell's Lessee*, 16 Pet. 367, 410, 41 U.S. 234, 410, 10 L.Ed. 997, ‘when the revolution took place, the people of each state became themselves sovereign; and in that character **hold the absolute right to all their navigable waters, and the soils under them, for their own common use....**’

Corvallis Sand, supra 250 Or at 337. (Emphasis added).

Thus, in contrast to the trial court’s ruling in the present case, neither the Federal nor the Oregon Supreme Courts limit trust rights to the submerged lands beneath waters of the state – both are held in trust for the common good. This position is consistent with the Court’s ruling in *Morse*, where it referred to *Shively v. Bowlby*, 152 U.S. 1, 14 S. Ct 548, 38 L. Ed 331 (1894), and *Illinois Central Railroad v. Illinois*, 146 U.S. 387, 13 S. Ct 110, 36 L.Ed. 1018 (1892) when discussing the “[l]imitation upon the power of the state *to permit alienation of the use of its waters....*” and *not* merely alienation of submerged

lands beneath. *Morse* at 200-201. (Emphasis added). The trial court did not (and cannot) quote a single Oregon case to the contrary.

Accordingly, although Oregon appellate court decisions recognize that application of the public trust doctrine may be tailored to particular situations to accommodate competing uses of public resources, the case law consistently limits alienation or degradation of submersed and submersible lands below waters of the state, as well as the waters themselves, whenever necessary to prevent substantial impairment of those waters and the beneficial uses derived therefrom. Waters of the State, and navigation and fisheries dependent upon them, are therefore inherent components of the State's public trust *res* and the trial court erred by interpreting the doctrine to include only submerged and submersible lands in isolation.

Third, the trial court neglected to reconcile its misplaced conclusion regarding the scope of the doctrine with State statutes describing waters of the state and in-stream water rights under ORS 537.332, ORS 537.334, and ORS 537.341, as public trust assets. The definitions in ORS 537.332 state, in relevant part:

- (3) In-stream water right means a water right ***held in trust by the Water Resources Department for the benefit of the people of the State of Oregon to maintain water in-stream for public use.*** An in-stream water right does not require a diversion or any other means of physical control over the water.

- (4) Public benefit means a benefit that accrues to the public at large rather than to a person, a small group of persons or to a private enterprise.
- (5) **Public use includes but is not limited to:**
- (a) **Recreation;**
 - (b) **Conservation, maintenance and enhancement of aquatic and fish life, wildlife, fish and wildlife habitat and any other ecological values;**
 - (c) **Pollution abatement; or**
 - (d) **Navigation.**

(Emphasis added). The trial court also disregarded the express designation of waters of the State as a public trust asset in ORS 537.334:

The people of the State of Oregon find and declare that:

- (1) Public uses are beneficial uses.
- (2) The recognition of an in-stream water right under ORS 537.336 **shall not diminish the public's rights in the ownership and control of the waters of this state or the public trust therein.**

(Emphasis added). Nowhere in its opinion does the trial court address or distinguish these statutes. In sum, the trial court erred by failing to heed Defendants' admissions, Oregon cases, and statutory mandates, all of which either expressly recognize waters of the state and the beneficial uses that depend on them as public trust assets or, at the very least, do not limit the public trust doctrine to only submersed lands beneath.

2. Argument on Second Sub-Assignment of Error – Fish and Wildlife are a Public Trust Resource.

The trial court committed a similar error of law by summarily rejecting the State's trust responsibility over fish and wildlife:

Although the title of migratory fish and game “is held by the state, in its sovereign capacity in trust for all its citizens,” these natural resources are regulated pursuant to laws that have been “upheld as legitimate exercises of the police power employed by a state to protect the welfare of all its citizens.” *See State v. Hume*, 52 Or 1, 6 (1908) (demonstrating principle); *Monroe v. Withycombe*, 84 Or 328, 334-35 (1917). Plaintiffs acknowledge that courts “have always treated the Public Trust Doctrine as distinct from the State’s police power authority.” (Pls.’ Resp. in Opp’n to State’s Mot. for Summ. J. 18.) Based on that acknowledged distinction (which the Court finds to be appropriate) between the State’s police power and the public trust doctrine, and considering the narrow scope of the public trust doctrine, *this Court declares that the public trust doctrine does not apply to fish and wildlife.*

ER 13. (Emphasis added).

Thus, despite acknowledging legal precedent stretching back more than a century that fish and wildlife are held in trust by the State of Oregon for the benefit of all citizens, the trial judge issued the exact opposite declaration of law.

The lower court’s reasoning is flawed for a number of reasons. First, the court misused Plaintiffs’ acknowledgment that the public trust doctrine and the state’s police powers are distinct concepts. While the State clearly retains and properly exercises its police power to regulate fishing, hunting, and wildlife habitat management, the public trust doctrine grants to the State *additional* legal authority as well as imposes on the State affirmative fiduciary responsibilities.

ER 41.

The mere fact that the State retains police power authority over fish and wildlife does not negate the State's role as trustee for the benefit of the public. As declared by the U.S. Supreme Court in *Illinois. Cent. R.R. v. Illinois*, 146 U.S. 387, 453 (1892), “[t]he state can no more abdicate its trust property in which the whole people are interested . . . than it can abdicate its police powers in the administration of government and the preservation of the peace.”

For more than a century Oregon courts have identified the unique sovereign interest held by the State of Oregon as a trustee of fish and wildlife. As the Oregon Supreme Court held in *Hume*, the restraint on such alienation derives from the:

... generally recognized principle that migratory fish in the navigable waters of a state, like game within its borders, are classed as animals *ferae naturae*, the title to which, so far as that claim is capable of being asserted before possession is obtained, is held by the state, in its sovereign capacity in trust for all its citizens.

State v. Hume, 52 Or at 5. The Supreme Court thus upheld the State's exercise of authority over the taking of wild animals as a function of its duties attendant in a sovereign capacity holding title to this common resource. *See, e.g., State v. Pulos*, 64 Or 92, 95, 129 P 128, 130 (1913). The Court of Appeals likewise adhered to *Hume* and similar precedent from *Monroe v. Withycomb*, 84 Or 328, 334-35, 165 P 227, 229 (1917), holding that the State's ownership of wildlife is “not as a proprietor, but in its sovereign capacity for the benefit of and in trust

for its people in common.” *Simpson v. Dep’t of Wildlife*, 242 Or App 287, 300, 255 P3d 565, 571 (2011). (Emphasis added). The Supreme Court has similarly held that the State holds title to fish in its sovereign – and not in its proprietary – capacity. *Anthony v. Veatch*, 189 Or 462, 487, 220 P2d 493, 503-04 (1950), *cert dismissed*, 340 US 923, 71 S Ct 499 (1951).

The Oregon Supreme Court issued its most recent pronouncement on the scope and origin of the State’s responsibilities over wildlife in *State v. Dickerson*, 356 Or 822, 345 P 3d 447 (2015). In *Dickerson*, the issue revolved around the State’s proprietary interest in wild deer when prosecuting a criminal action against defendants who had shot at deer decoys set up by the State to catch poachers. Notably, the Court pointed to the State’s response to Defendants’ argument that the State may have regulatory oversight over wildlife but its authority does not constitute a legal or equitable interest:

The state counters that its interest in wildlife is broader than its authority to regulate the conduct of its citizenry with respect to wild animals. Rather, ***the state contends that it also holds title to wildlife as a trustee and*** therefore has a legal interest in wildlife. *See Anthony et al.*, 189 Or at 474, 220 P2d 493 (recognizing that the state may regulate the capture of wildlife “either in the exercise of its police power, or in its sovereign capacity in trust for its people”).

Holding in favor of the State, and rejecting Defendants’ position (which is effectively the same as the trial court’s in the present case), the Court found:

... Oregon courts have long used the metaphor of a trust to describe the state’s sovereign interest in wildlife. *Hume*, 52 Or at 5-6, 95 P 808; *see*

Portland Fish Co. v. Benson, 56 Or 147, 154, 108 P122 (1910) (noting that title to wild animals, ‘before they are captured, is in the state in its sovereign capacity, in trust for all its citizens’). According to the trust metaphor — sometimes referred to as the “wildlife trust doctrine” — wildlife is the corpus of the trust, the state is the trustee, and the public is the beneficiary. See, e.g., *Toomer v. Witsell*, 334 U.S. 385, 399-400, 68 S.Ct. 1156, 92 L.Ed. 1460 (1948) (noting that, under the trust theory, the state acts as a trustee, the citizens are the beneficiaries, and the wildlife is the corpus); *Geer v. Connecticut*, 161 U.S. 519, 534, 16 S.Ct. 600, 40 L.Ed. 793 (1896) (“[T]he ownership of the sovereign authority is in trust for all the people of the State, and hence by implication ***it is the duty of the legislature to enact such laws as will best preserve the subject of the trust*** and secure its beneficial use in the future to the people of the State.”), *overruled on other grounds by Hughes v. Oklahoma*, 441 U.S. 322, 99 S.Ct. 1727, 60 L.Ed.2d 250 (1979). Although the trust metaphor is an imperfect one (for example, there is no trust instrument that delineates the terms of the trust), the state’s powers and duties with respect to wildlife have many of the traditional attributes of a trustee's duties. ***Acting as a trustee, the state has the authority to manage and preserve wildlife resources*** and may seek compensation for damages to the trust corpus.

Id. (Emphasis added).

Although *Dickerson* was issued a mere two months before the opinion and order dismissing Plaintiffs’ case, the trial court ignored this precedent in its entirety and held “considering the narrow scope of the public trust doctrine, this Court declares that the public trust doctrine does not apply to fish and wildlife.”

ER 13.

3. Argument on Third Sub-Assignment of Error – The Atmosphere is a Public Trust Resource.

Whether the atmosphere falls within the scope of the public trust doctrine is a question of first impression for Oregon courts. In Oregon and other

jurisdictions, however, the public trust doctrine has evolved over time through the common law. *See, e.g., Morse*, 34 Or App at 860 (noting that the trustee’s obligation has been extended to include protection of “in more recent cases, recreation”). Thus, for decades, courts from around the country have built upon the essential foundations of the public trust doctrine to adjust to changing conditions and circumstances. *See, e.g., Borough of Neptune City v. Borough of Avon-by-the-Sea*, 61 NJ 296, 309, 294 A2d 47, 54 (1972) (“public trust doctrine, like all common law principles, should not be considered fixed or static, but should be molded and extended to meet changing conditions and needs of the public it was created to benefit”); *In re Water Use Permit Applications*, 94 Haw 97, 135, 9 P3d 409 (2000) (“The public trust by its very nature, does not remain fixed for all time but must conform to changing needs and circumstances.”).

Indeed, the public trust doctrine traces its roots back to ancient Roman law, which treated the air as one and the same with the other common trust resources. *See Justinian, Institutes*, 1.2.1, 2.1.1 (533) (T. Sandars trans. 1st Am. ed. 1876) (“By the law of nature these things are common to mankind—the air, running water, the sea, and consequently the shores of the sea.”); *see also* 2 William Blackstone, *Commentaries of Laws of England* 4 (1756) (“There are some few things which, notwithstanding the general introduction of continuance of property, must still unavoidably remain in common Such

among (among others) are the elements of light, air, and water”). Because air is an essential natural resource, there is ample existing authority in federal and states law that the atmosphere is among those resources protected by the public trust doctrine. See *Her Majesty the Queen in Right of the Province of Ontario v. City of Detroit*, 874 F.2d 332, 337 (1989) (public trust includes air, water and other natural resources); *Robinson Twp. v. Commonwealth*, 84 A3d 901, 913, 6243 Pa 564 (2014); *Foster v. Wash. Dep’t of Ecology*, No. 14-2-25295-1, slip op at 8 (Wash. King Cnty. Super. Ct. Nov. 11, 2015) (“[N]avigable waters and the atmosphere are intertwined and to argue a separation of the two, or to argue that GHG emissions do not affect navigable waters is nonsensical.”); *Bosner-Lain v. Texas Comm’n on Env’tl. Quality*, 2012 WL 3164561 (Tex. Dist., Aug. 2, 2012), *rev’d on jurisdictional grounds*, 438 SW 887 (Tex App 2014) (Texas court ruling that atmosphere is part of the public trust); *Nat’l Audubon Soc’y v. Superior Court of Alpine Cty.*, 33 Cal 3d 419, 437, 658 P2d 709, 718 (1983) (California court recognizing that air is part of the public trust); Haw Const, Art. XI § 1 (stating, “[T]he State and all its political subdivisions shall conserve and protect Hawaii’s natural beauty and all natural resources including land, water, air minerals and energy sources, All public natural resources are held in trust by the State for the benefit of the people); Pa. Const., Art I, § 27 (declaring the public trust duty to conserve natural resources, and expressing citizen’s right to clean air).

Presented with a specific case that raises the question, it is appropriate for this Court to declare that the doctrine encompasses the atmosphere and that the citizens hold, and have always held, inalienable rights as beneficiaries of this trust that cannot be abrogated by the legislature or the executive. Courts from around the country have repeatedly declared that the doctrine applies to specific natural resources in similar case-specific contexts. *See, e.g., Baxley v. Alaska*, 958 P2d 422, 434 (Alaska 1998) (minerals); *Nat'l Audubon Soc'y v. Superior Court of Alpine Cty.*, 33 Cal 3d 419, 437, 658 P2d 709 (1983) (navigable waters); *Marks v. Whitney*, 6 Cal 3d 251, 491 P2d 374 (1971) (tidelands); *Ctr. for Biological Diversity v. FPL Group*, 166 Cal App 4th 1349, 1359-64, 83 Cal Rptr 3d 588 (Cal App 1 Dist 2008) (wildlife); *In re Water Use Application*, 94 Haw at 133-35 (groundwater); *Friends of Van Cortland Park v. City of New York*, 95 NY2d 623, 750 NE2d 1050 (2001) (parklands); *Just v. Marinette County*, 56 Wis 2d 7, 201 NW2d 761 (1972) (shoreland above waterline).

Among the criteria these courts have used to determine the scope of the public trust doctrine are whether particular natural resources are “of inestimable value to the community as a whole” or are “transient” in nature, *Ctr. for Biological Diversity*, 166 Cal App 4th at 1359-64, 83 Cal Rptr 3d at 595-99, or whether they are of “vital importance . . . to the public welfare.” *In re Water Use Permit Application*, 94 Haw at 135, 9 P 3d at 447.

The right of the people to sustain the public trust *res* for themselves and future generations is a natural right retained by the People. *See, e.g.*, Or Const, Art I, §§ 1 (all power inhering in the people and government are founded to insure their peace, safety, and happiness); 33 (the enumeration of certain rights does not deny other retained by the People); *see also Robinson Twp.*, 83 A3d at 947 (explaining that such natural rights are inherent and inalienable).

The Oregon legislature has found that climate change “poses a serious threat to the economic well-being, public health, natural resources and environment of Oregon.” ORS 468A.200(3); *see also* 468A.200(4) (“Oregon relies on snowpack for summer stream flows to provide energy, municipal water, watershed health and irrigation.”); ORS 468A.010(1)(a) (“[I]t is declared to be the public policy of the State of Oregon [to] restore and maintain the quality of the resources of the State in a condition as free from air pollution as is practicable.”). And the legislature has recognized its obligation to tackle climate change to uphold its responsibility to the public.

Oregon’s natural resources, and the ways these natural resources are used, are important to Oregonians. These natural resources include native flora and fauna. These natural resources provide food and shelter, flood control, water filtration, clean air, fish and wildlife habitat, recreational opportunities, aesthetic benefits, jobs and high quality of life for all Oregonians. Science has demonstrated the importance of these natural resources to our daily lives. ***The adverse impacts of climate change may stress some natural resources to the point that they no longer provide ecosystem services. It is necessary to improve the overall health***

of our natural resources in order to maintain these resources for present and future generations.

ORS 468.585(4). (Emphasis added).

Given the existential threats posed by climate change, the atmosphere is the most essential public trust resource because the health and vitality of all other public trust resources are inextricably linked to and dependent upon the integrity of the atmosphere. Indeed, the State of Oregon, in the context of this very lawsuit, frankly admitted that climate change could lead to “the collapse of the earth’s natural systems leaving a planet that is largely unfit for human life.” ER 31. To maintain the natural conditions that support human life on earth, our sovereign government must manage the atmosphere as an essential, common good for the benefit of current and future generations.

Despite the overarching importance of the atmosphere to the survival of mankind and maintenance of all other trust resources, the trial court refused to declare that the air we breathe is subject to the protections of the public trust doctrine. ER 13-15. The trial court erred in holding that the atmosphere is not a “resource” and therefore does not fall within the public trust doctrine. The trial court started with the dictionary definition of “resource,” noting that the atmosphere “perhaps may be said to fall within this broad definition * * *.” *Id.* at 11. Finding no support with that initial line of reasoning, the trial court then

pivoted and focused in on whether the State held title to the atmosphere in assessing whether it should be considered as a “resource.” *Id.*

The trial court wrongly concluded that the public trust doctrine “originated” at the time that “title to the lands beneath navigable waters transferred to the State.” ER 14. *see also* Law Prof *amicus* at 32-33. But there was never a transfer of title “to the State.” When “Oregon was admitted into the Union it acquired title to the submerged lands ***not by grant from the United States, but by virtue of its sovereignty.***” *Corvallis Sand & Gravel*, 250 Or at 333 (emphasis added). As the Law Professors rightly explain, the “transfer of submersible lands to the state was not the origin of the public trust but an application of the trust principle.” Law Prof *amicus* at 21.

So it is with respect to title to wild animals and fish – the title is “held by the state, ***in its sovereign capacity in trust for all its citizens * * ****.” *Hume*, 52 Or at 7; *see also Dickerson*, 356 Or at 832-33 (stating that the title is held ““not as a proprietor, but in its sovereign capacity for the benefit of and in trust for its people in common.””) (quoting *Monroe*, 84 Or App at 334-35). The public trust doctrine has never been predicated upon a possessory interest or formal title as held by the trial court. Rather, the public trust doctrine is an inherent aspect of the State’s sovereignty, and title is held by the State in trust as a sovereign for the benefit of its people. *Id.* These same principles apply to the atmosphere just as they do to submerged and submersible lands, waters of the State, and

wildlife. *See, e.g., Georgia v. Tennessee Copper Co.*, 206 U.S. 230, 237, 27 S Ct 618 (1907) (“the state has an interest independent of and behind the title of its citizens, in all the earth and air within its domain.”).

The trial court’s statement that the “atmosphere is not acquired and sold or traded for economic value and hence is not a commodity” is both wrong as a matter of fact and legally irrelevant. ER 14. The right to develop within airspace is tightly regulated by local, state, and national governments, as evidenced by zoning of high-rise buildings, telecommunications frequencies, and commercial and military flights.

IV. THIRD ASSIGNMENT OF ERROR

The trial court erred in holding that the substance of the public trust doctrine serves only as a restraint on the alienation of the real property. The public trust doctrine imposes an affirmative obligation on the trustee to prevent substantial impairment of the trust *res*.

A. Preservation of Error

The trial court addressed the question raised by Plaintiffs in their motion for partial summary judgment and as directed by this Court as to whether the public trust doctrine imposes an affirmative obligation on the State to prevent substantial impairment of the trust natural resources. ER 16-17. Plaintiffs preserved the trial court’s error by timely filing of a Notice of Appeal with the Court of Appeals.

B. Standard of Review

Declaratory judgment actions that are equitable in nature are subject to *de novo* review by the Court of Appeals pursuant to ORS 19.415. See *C-Lazy-K Ranch, Inc.*, 243 Or App at 172-73; *Ken Leahy Const., Inc.*, 329 Or at 571.

C. Argument on Third Assignment of Error

The trial court stated in its Opinion “. . . that, historically, courts applying the public trust doctrine have merely prevented the State from entirely alienating submerged and submersible lands under navigable waters.” ER 16. The court, however, failed to quote any historic precedent in support of this wholesale adoption of Defendants’ equally unsupported position that it has no affirmative fiduciary duty to prevent impairment of public trust resources. *Id.* at 14.

The trial court’s reliance on *Morse* and *Kalmiopsis Audubon Society v. Division of State Lands*, 66 Or App 810 (1984), to fabricate a rule of law that the State merely has a passive duty under the public trust doctrine to prevent alienation of submerged or submersible lands runs counter to those cases and other appellate court precedent. The fact that these two cases addressed fact patterns that only dealt with the alteration of submerged lands does not mean the public trust doctrine only applies to or restricts alienation of submerged lands.

The trial court’s insular conclusion conflicts with the Oregon Supreme Court’s affirmation of the U.S. Supreme Court’s ruling in *Geer v. Connecticut*, 161 US 519, 534 (1896): “[i]t is the duty of the legislature to enact such laws as will best preserve the subject of the trust and secure its beneficial use in the future to the people of the State;” *Dickerson*, 356 at 835 (2015) (holding the state has “powers and duties” over the trust *res*), *citing Geer v. Connecticut*. Nor does the trial court’s holding square with the statutory mandate under ORS 537.332:

- (3) In-stream water right means a water right ***held in trust by the Water Resources Department for the benefit of the people of the State of Oregon to maintain water in-stream for public use...***

* * * *

- (5) ***Public use includes but is not limited to:***
 (a) *Recreation;*
 (b) ***Conservation, maintenance and enhancement of aquatic and fish life, wildlife, fish and wildlife habitat and any other ecological values;***

The trial court’s ruling also conflicts with Oregon’s regulations governing management of state-owned lands, a program administered by the Oregon Department of State Lands (DSL) under its Constitutional authorities in Or Const, Art VIII, § 5(2). *See, e.g., Brusco Towboat v. Oregon*, 30 Or App 509, 520, 567 P2d 1044 (1977) (holding that statute regulating fill of tidelands is “a codification of the public trust doctrine”).

The State of Oregon understands that its obligations under the public trust doctrine extend far beyond a simple prohibition on the alienation of real property – the State must *manage* uses of that property to ensure protection of public uses, including commerce, navigation, fishing and recreation. DSL has issued a set of regulations that apply to “remediation and habitat restoration activities” on state-owned lands. OAR Chapter 141, Division 145. The rules clarify that these lands “*are managed* to ensure the collective rights of the public, including riparian owners, to fully use and enjoy this resource for commerce, navigation, fishing, recreation and *other public trust values.*” OAR 141-145-0010(3). The rules prohibit any person from “mak[ing] use of state-owned submerged and submersible land” without authorization from DSL. OAR 141-145-0010(4); *see also* OAR 141-125-0010 (the State has “a constitutional responsibility *to manage*” public trust lands under Art VIII, § 5(2) “with the object of obtaining the greatest benefit for the people of this state, consistent with the conservation of this resources under sound techniques of land management”).

Similarly, in regulating removal-fill activities with Oregon’s estuaries, Statewide Planning Goal 16, Implementation Requirement 2 provides that “dredging and filling shall be allowed only . . . If a need (i.e., a substantial public benefit) is demonstrated and the use or alteration does not unreasonably

interfere with public trust rights,” making protection of the public trust an active requirement and part of local government review. Goal 16, IR 2(b).

In another example, the Oregon Territorial Sea Plan states:

The State of Oregon holds the lands, waters, and living resources within its boundaries in trust for the public and, acting through local, state, and federal laws, seeks to ensure that these ocean resources, values, and benefits are conserved for the current and future generations.

Oregon Territorial Sea Plan, Preamble to Ocean Management Goals and Policies (May 4, 2001).

The trial court’s ruling would nullify the purpose behind the public trust doctrine, which is to preserve the corpus of the trust for future generations, and would call into question the very foundation of Oregon’s state lands and ocean programs. The State must ensure that public access to, enjoyment of, and reliance on, essential resources including fisheries, navigable waters, air, and wildlife, remain substantially intact. The trial court’s decision shreds this responsibility by reducing the State’s obligation to nothing more than a restriction on selling off state lands to the highest bidder, leaving Plaintiffs and the public without recourse as those natural resource assets erode, perhaps irreversibly, or as public uses are diminished.

The adverse and illogical consequence of the trial court’s holding is further illuminated by assuming slightly different facts in the seminal decision *Illinois. Cent. R.R. Co.*, 146 US 387 (1892). In that case, the state, the federal

government, and the city of Chicago conspired to sell off rights to the submerged lands beneath the harbor of Lake Michigan to a private railroad corporation. *Id.* at 439-43. The Supreme Court stepped in and held that such a grant to a private corporation violated the public trust doctrine and should be rescinded. Assume, however, the Illinois legislature had instead entered into a 50-year lease with a corporation allowing it exclusive use of the same Chicago harbor to store logs awaiting milling. Under such facts, the public would be equally exiled from use of the harbor for fishing, navigation, recreation, or commerce, and the resource and associated beneficial uses would have been effectively lost for at least half a century.

It is inconceivable that the Supreme Court would have acceded to that violation of the public's rights and held that the State had no duty to act in the face of that impairment. *Id.* at 455-56 (“It would not be listened to that the control and management of the harbor of that great city — a subject of concern to the whole people of the State — should thus be placed elsewhere than in the State itself. . . . ‘It would be a grievance which never could be long borne by a free people.’”). Further, in explaining that legislative measures needed to protect public trust resources may evolve from one legislature to the next, as new threats arise, the *Illinois Central* court said, “[e]very legislature **must**, at the time of its existence, **exercise the power of the State in the execution of the trust devolved upon it.**” *Id.* at 460 (emphasis added). The Supreme Court

did not say that States should refrain only from legislating in injurious ways. Rather, the Court held that legislatures, as trustees, *must* utilize their power and act to protect the trust *res*. *Id.*

Thus, the lesson inherent in *Illinois Central* and *Geer v. Connecticut* is not whether the State acted affirmatively or failed to act, it is whether the State is adequately protecting the trust asset for the benefit of its citizen beneficiaries. The trustee of the public trust resource cannot disclaim any obligation to prevent an infringement of inalienable public rights to access waters of the state and the beneficial uses they provide.

Other public trust case law from around the country further negates the trial court's erroneous conclusion and confirms the affirmative obligation of the trustee to protect the public trust *res* equally for future generations as well as the present. *See Rettkowski v. Dept. of Ecology*, 858 P2d 232, 239-40 (Wash 1993) (holding that the Public Trust Doctrine places an "affirmative duty" on the state to protect its waters); *Robinson Twp.*, 83 A3d at 959 (finding that "the beneficiaries of the trust are 'all the people' of Pennsylvania, including generations yet to come. The trust's beneficiary designation has two obvious implications: first the trustee has an obligation to deal impartially with all beneficiaries and, second, the trustee has an obligation to balance the interests of present and future beneficiaries."); *see also id.* at 958 (plurality opinion) ("The second obligation peculiar to the trustee is . . . to act affirmatively to

protect the environment, via legislative action.”); *State v. City of Bowling Green*, 313 NE 2d 409, 411 (Ohio 1974) (“[W]here the state is deemed to be the trustee of property for the benefit of the public it has the obligation to bring suit . . . to protect the corpus of the trust property.”); *Nat’l Audubon Soc’y v. Superior Court of Alpine Cnty.*, 658 P2d 709, 724 (Cal 1983) (describing the public trust as “an affirmation of the duty of the state to protect the people’s common heritage of streams, lakes, marshlands and tidelands”); *City of Milwaukee v. State*, 214 NW 820, 830 (Wis 1927) (“The trust reposed in the state is not a passive trust; it is governmental, active, and administrative [and] . . . requires the lawmaking body to act in all cases where action is necessary, not only to preserve the trust, but to promote it.”); *Just v. Marinette Cnty.*, 201 NW 2d 761, 768 (Wis 1972) (emphasizing an “active public trust duty” on the part of the state, including the duties “to eradicate the present pollution and prevent further pollution” and “to protect and preserve” the natural resource held in trust).

The trial court’s finding that the public trust doctrine only protects submerged or submersible lands and only against alienation to third parties is an anachronism that ignores the industrial revolution. *See State v. Campbell*, 759 P2d 1040, 1048-49 (Or 1988) (holding that constitutional rights must be interpreted in light of technological advancements that substantially impair those rights). Although the trial court inexplicably announced it would only

pay heed to “legislative facts” and “makes no comment at this juncture about the actual facts, or lack thereof, related to global warming,” ER 7., it cannot be rationally disputed that pollution of water and air poses enormous threats to public use and access of the State’s natural resources. Excessive carbon pollution threatens the very life support system of Earth, and yet the trial court made no tenable argument as to why the public trust doctrine would protect against lesser impairments of trust resources, like a construction project on a public waterway, but would not apply at all to the largest threats that irreversibly impair resources for future generations. There has never been a threat to Oregon’s public trust resources as significant and irreversible as the one presented in this case and, thus, the lower court’s Opinion defies logic and legal precedent.

Finally, the trial court found that because the Oregon courts have not previously ruled on a similar case and addressed the need for the State to act affirmatively to protect the public trust, “this Court does not believe that it is empowered . . . to rewrite the public trust doctrine to impose fiduciary duties.” ER 17. As discussed above, the inalienable public trust right is constitutional in nature and does not require an expansion of the common law; it merely requires its declaration and enforcement. Even if the State’s public trust obligation only prevented it from divesting itself of the authority to protect the public’s interest in the trust *res*, where the divestment would substantially

impair the public's right to use the trust *res*, the result would be a breach of Defendant's public trust standard. Here, further delay in acting to reduce carbon emissions and the failure to legislate and regulate to protect Oregon's public trust *res*, as informed by the best available science, amounts to a divestiture of the State's ability to preserve a habitable climate, terrestrial, and marine system for all generations to come. Inadequate action by the trustee to preserve the trust corpus is a *de facto* divestment of authority for all future legislatures because of the irreversible impacts of climate change and ocean acidification, as unequivocally set forth in Declarations of Hansen, Mote, Hales, and Niemi. [ER 42-69](#).

In sum, the public trust doctrine intends to conserve and protect the use of the trust *res*, whether it be submerged lands, waters of the State, wildlife, or the atmosphere, for current and future public benefit. If the beneficial uses protected under the doctrine are threatened as a result of alienation or substantial impairment of the trust corpus, then the trial court must order the State to remediate the breach of trust based on the undisputed climate science in this case and the expertise of the very commission and institute created by the legislature to monitor and research climate changes impacts in this State. This is required under the Oregon public trust doctrine. The trial court erred by ignoring the science and refusing to require the State to take affirmative action to prevent further substantial impairment of the trust assets.

V. FOURTH ASSIGNMENT OF ERROR

The trial court erred by failing to reach the question of whether the State has upheld its duty to protect public trust resources from substantial impairment resulting from climate change. This Court should reach that question on appeal and should declare that the State has failed to uphold its fiduciary duties under the public trust doctrine and that atmospheric concentrations exceeding 350 ppm constitute substantial impairment.

A. *Preservation of Error*

Plaintiffs briefed this issue below at pages 14-29 of its motion for partial summary judgment. [ER 70-85](#). Plaintiffs preserved the trial court's error by timely filing of a Notice of Appeal with the Court of Appeals.

B. *Standard of Review*

Declaratory judgment actions that are equitable in nature are subject to *de novo* review by the Court of Appeals pursuant to ORS 19.415. *See C-Lazy-K Ranch, Inc.*, 243 Or App at 172-73; *Ken Leahy Const., Inc.*, 329 Or at 571.

C. *Argument on Fourth Assignment of Error*

The record in this case is unequivocal that the State of Oregon has fallen far behind its own inadequate and non-binding targets for reduction of greenhouse gases within Oregon. Given the undisputed facts in the record, Plaintiffs are entitled to a declaration that the State has failed and is failing to uphold its fiduciary obligations and has failed and is failing to prevent substantial impairment of public trust resources.

As discussed above, the State admits – and the parties are in agreement – that anthropogenic emissions of carbon dioxide and other greenhouse gases are causing global climate change. *See supra* at [ER 30](#). The State further admits that climate change will cause extreme degradation of natural resources within the State of Oregon, which will cause harm to the interests of the beneficiaries of the public trust. *See supra* at [ER 25-26](#).

In addition to these admissions from the State, Plaintiffs also presented to the trial court extensive evidence in the form of declarations from four renowned experts, who all attest to the causes of climate change and the severe impacts that will otherwise accrue to Oregon’s natural resources. Those individuals include:

- Dr. James Hansen, former Director of the NASA Goddard Institute for Space Studies;
- Dr. Phil Mote, Director of the Oregon Climate Change Research Institute at Oregon State University;
- Dr. Burke Hales, Professor of Ocean Ecology and Biogeochemistry at the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University; and
- Mr. Ernie Niemi, trained economist and founder of Natural Resource Economics, Inc.

Their expert opinions are summarized in Plaintiffs’ motion for partial summary judgment at pages 22-26. [ER 86-90](#). The State did not contest the

admissibility of this expert evidence, nor did the State submit any evidence of its own that would call into question the conclusions of Plaintiffs' experts.

Even viewed in the light most favorable to the State, the undisputed record establishes that human-caused emissions of carbon dioxide are causing climate change and ocean acidification, which are resulting in substantial impairment of public trust resources in Oregon. These impacts will continue to accrue to fish and wildlife from ocean acidification, rising sea levels, and coastal erosion. Waters of the state will suffer from reduced snow pack and lower summer flows. Fish and wildlife will suffer from unnatural wildfires, lower stream flows, high water temperature, and shifting climatic zones. And Mr. Niemi predicts that the economic costs of these impacts and others associated with climate change will total at least **\$9.8 billion per year** within the State of Oregon by the year 2080. [ER 69](#).

The only remaining question for the Court is to assess the State of Oregon's performance in reducing emissions of greenhouse gases as necessary to uphold its fiduciary obligation to the Plaintiffs and other beneficiaries of the public trust. Here too, the record is unequivocal.

Plaintiffs simply rely on the data and reports from Oregon's Global Warming Commission, which document in plain terms the inescapable fact that Oregon is failing to take the actions necessary to protect the public trust and to abate the catastrophe that will otherwise befall our state. The Global Warming

Commission is charged with providing a biennial report to the legislature detailing Oregon's progress towards meeting its non-binding greenhouse reduction targets. ORS 468A.260.

In the 2009 report, the Global Warming Commission collected and reported data on greenhouse gas emissions in Oregon. At that time, the Commission found that "the state will likely fall well short of meeting its 2020 emission reduction goal and by extrapolation, clearly is not on track to meet its 2050 goal." [ER 91](#).

In the 2011 report, the Global Warming Commission again found that the State is falling far behind its efforts to meet the 2020 and 2050 goals. [ER 92-93](#).

In the 2013 report, the Global Warming Commission again demonstrated that Oregon is falling far behind its own outdated targets. [ER 94](#). The Commission concluded that Oregon is "far off the emissions trajectory necessary to meet both its 2020 and 2050 greenhouse gas emissions reduction goals." [ER 94](#) *Id.* at 95.⁴

Thus, the State was forced to admit in its Answer that the situation is dire.

Defendants admit that Oregon likely to fall well short of the targets set by its greenhouse gas reduction and mitigation plan.

[ER 34](#).

⁴ The 2015 Biennial Report from the Global Warming Commission reaches a similar conclusion. *See infra* at 13 n.3.

For all of these reasons, Plaintiffs respectfully request that in remanding this case the Court order the lower court to enter summary judgment in their favor declaring that the State of Oregon has failed to uphold its fiduciary obligations under the public trust doctrine by failing to achieve adequate reductions in greenhouse gas emissions within the State of Oregon. Plaintiffs also request that the Court consider the undisputed evidence before it that 350 ppm is the maximum safe concentration of carbon dioxide in the atmosphere and declare that atmospheric carbon dioxide concentrations exceeding 350 ppm constitute substantial impairment.

VI. FIFTH ASSIGNMENT OF ERROR

The trial court erred as a matter of law by issuing an advisory opinion on injunctive relief before Plaintiffs had presented to the court a petition for supplemental relief under ORS 28.080.

A. Preservation of Error

Plaintiffs notified the trial court in their motion or partial summary judgment that they would petition for supplemental relief following the entry of the requested declaratory relief pursuant to ORS 28.080. [ER 23](#). The trial court reached out to issue an advisory opinion that Plaintiffs' yet-to-be-filed petition for supplemental relief would violate separation of power principles. [ER 18-21](#). Plaintiffs preserved the trial court's error by timely filing of a Notice of Appeal with the Court of Appeals.

B. Standard of Review

Declaratory judgment actions that are equitable in nature are subject to *de novo* review by the Court of Appeals pursuant to ORS 19.415. See *C-Lazy-K Ranch, Inc.*, 243 Or App at 172-73; *Ken Leahy Const., Inc.*, 329 Or at 571

C. Argument on Fifth Assignment of Error

In *Chernaik I*, this Court declined to rule on Plaintiffs' request for specific declaratory relief "until a court declares the scope of the public trust doctrine and defendants' obligations, if any, under it." 263 Or App at 480.

Thus, consistent with the instructions of this Court, Plaintiffs on remand moved for partial summary judgment as to the existence of the public trust duties and the breach of those fiduciary obligations. ER 23-24. Plaintiffs notified the trial court that they intended to seek injunctive relief but would do so at a later time after declaratory judgment had been issued pursuant to the procedures set forth in ORS 28.080. *Id.* at 1 n.1; see also *Ken Leahy Const., Inc.*, 329 Or at 575 (noting that a petition for coercive or injunctive relief is to be made under ORS 28.080 "based on a declaratory judgment").

Ignoring this Court's holding in *Chernaik I*, and ignoring the requirements of ORS 28.080, the trial court nevertheless issued an advisory opinion on two hypothetical requests for injunctive relief:

Plaintiffs ask the Court to: (1) order Defendants to 'develop and implement a carbon reduction plan that will protect trust assets by abiding by the best available science, and (2) issue a "declaration

that the best available science requires carbon dioxide emissions to peak in 2012 and to be reduced by at least six percent each year until at least 2050.

ER 18-19.⁵

In its opinion and order, the trial court then proceeds, based on its flawed understanding of the public trust doctrine, to opine on these requests for relief. In doing so, the trial court simply reprised arguments on separation-of-powers similar to those in its earlier order dismissing the case for lack of subject matter jurisdiction, which was reversed by this court in *Chernaik I*.

Plaintiffs ask this Court to step far outside of its well-established role – of adjudicating facts and analyzing extant case law in the context of a concrete dispute – and affirmatively rule in contradiction to laws democratically established by the Legislature. That is true because, if this Court were to grant Plaintiffs’ requested relief, it would effectively ‘strike down’ HB 3543 and ORS 468A.200 to ORS 468A.260. Plaintiffs’ requested relief would create a more stringent standard for GHG emission reductions and would thereby displace those goals established by the Legislature in HB 3543 and ORS 468A.200 to ORS 468A.260. It is hard to imagine a more coercive act upon the legislative department than to strike out a statutory provision and supplant it with the Court’s own formulation. ER 19.

⁵ The trial court misstated the information provided by Plaintiffs in their motion for partial summary judgment. Plaintiffs stated their intent to request an order requiring the State to:

- (1) prepare an accounting of Oregon’s greenhouse gas emissions on an annual basis;
and
- (2) develop and implement a greenhouse gas reduction plan, based on the best available science, to achieve reductions in emissions or carbon dioxide and other greenhouse gases in, or within the control of, the State of Oregon necessary to return concentrations of carbon dioxide to 350 ppm by the year 2100.

ER 23.

The trial court erred as a matter of law because its holding on separation-of-powers is premised upon an incorrect interpretation of the public trust doctrine. As this Court stated in *Chernaik I*, “if the doctrine itself imposes specific affirmative obligations” (which it does), an injunction “ordering defendants to take the requested actions might not unduly burden the other branches of government.” 263 Or App at 480. Once the trial court held (incorrectly) that the public trust doctrine does not impose any affirmative fiduciary obligations on the State, it should have refrained from wading into the question of injunctive relief. Instead, the trial court jumped the gun and revisited its earlier holding on separation-of-powers without acknowledging the guidance from this Court in *Chernaik I* that the separation-of-powers analysis necessarily depends upon a proper interpretation of the public trust doctrine.

Indeed, the trial court’s entire analysis of the separation-of-powers issue is infected by its incorrect view of the public trust doctrine. When Plaintiffs do petition for supplemental relief, their requests will be proper. As the Supreme Court held in the seminal public trust *Illinois Central R.R. Co. v. Illinois*, “[e]very legislature must, at the time of its existence, exercise the power of the State in the execution of the trust devolved upon it.” 146 U.S. 387, 460 (1892). As recently as 2015, the Oregon Supreme Court stated that “it is the duty of the legislature to enact such laws as will best preserve the subject of the trust and secure its beneficial use in the future to the people of the State.” *Dickerson*,

356 Or at 835 (quoting *Geer*, 161 U.S. at 534). In a Constitutional system of checks and balances, the youth beneficiaries of the public trust must be able to turn to the courts when the other branches of government fail to uphold their fiduciary obligations to the people. These youth are asking only that the judicial branch uphold their rights to inherit a planet that is fit for human habitation. If their plea for relief runs afoul of the separation-of-powers, than our system of checks and balances has failed the people.

For all these reasons, Plaintiffs respectfully request that this Court vacate the trial court's opinion and order as it relates to the question of relief and remand this action for further proceedings.

VII. CONCLUSION

For the reasons set forth herein, Plaintiffs respectfully request that the Court reverse and remand this case with instructions that the trial court grant Plaintiffs' motion for partial summary judgment, deny Defendants' motion for summary judgment, and conduct further proceedings consistent with this Court's opinion.

**CERTIFICATE OF COMPLIANCE
WITH ORAP 5.05(2)(d)**

Brief Length

I certify that (1) this brief complies with the word-count limitation in ORAP 5.05(2)(b) and (2) the word-count of this brief (as described in ORAP 5.05(2)(a)) is 12,323 words.

Type Size

I certify that the size of the type in this brief is not smaller than 14 point for both the text of the brief and footnotes as required by ORAP 5.05(4)(f).

By: 

William H. Sherlock, OSB #903816
Of Attorneys for Plaintiffs-Appellants

CERTIFICATE OF COMPLIANCE

CERTIFICATE OF FILING

I hereby certify that on FEBRUARY 25, 2016, I filed this **PLAINTIFFS-APPELLANTS' OPENING BRIEF AND EXCERPTS OF RECORD**, with the Appellate Court Administrator via the ECF filing system.

By: 

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CERTIFICATE OF SERVICE

I hereby certify that on February 25, 2016, I served a certified true copy of **PLAINTIFFS-APPELLANTS' OPENING BRIEF AND EXCERPTS OF RECORD** on:

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By mailing full, true and correct copies in sealed, first-class postage-prepaid envelopes, with the United States Postal Service to the addresses shown, and deposited with the United States Postal Service in Portland, Oregon, on the date set forth above, and by ECF filing system.

By: 

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CIRCUIT COURT OF OREGON
FOR LANE COUNTY

BY _____

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR LANE COUNTY

OLIVIA CHERNAIK, a minor and
resident of Lane County, Oregon; **LISA
CHERNAIK**, guardian of Olivia
Chernaik; **KELSEY CASCADIA
ROSE JULIANA**, a minor and resident
of Lane county, Oregon and **CATHY
JULIANA**, guardian of Kelsey Juliana,

Plaintiffs,

v.

JOHN KITZHABER, in his official
capacity as Governor of the State of
Oregon; and the **STATE OF OREGON**,

Defendants.

Case No. 16-11-09273

**AMENDED COMPLAINT FOR
DECLARATORY JUDGMENT
AND EQUITABLE RELIEF**

(Claim not Subject to Mandatory
Arbitration)

Plaintiffs allege:

1.

This is a proceeding for declaratory and equitable relief under Oregon Revised Statutes (ORS) Chapter 28. Plaintiffs are children and their families who live in Oregon, and their personal and economic well-being is directly dependent upon the health of the State's natural resources held in trust for the benefit of its citizens, including water resources, submerged and submersible lands, coastal lands, forests, and wildlife. All of these resources or assets, and

1 these events has catastrophic consequences on its own, such as the consequent rise in sea level
2 after ice sheets melt. Each of these events also spurs further events with negative climatic
3 effects. When sea ice melts the refractive capacity of the ice is lost and the heat energy is
4 absorbed by the ocean. The thawing of permafrost will result in the release of large quantities
5 of the greenhouse gas methane, which eventually converts into carbon dioxide in the
6 atmosphere. Current estimates place the amount of carbon sequestered in permafrost at around
7 900 gigatons worldwide. Release of such a large store would more than double the current
8 amount of carbon in the atmosphere, resulting in further rapid warming and consequent effects.
9

10 25.

11 A failure to take appropriate action will result in the severe alteration and potentially
12 the collapse of the earth's natural systems leaving a planet that is largely unfit for human life.

13 26.

14 There is still time to curb and reduce carbon dioxide emissions to avoid irrevocable
15 changes to the atmosphere. To limit average surface heating to no more than 1° C (1.8° F)
16 above pre-industrial temperatures, and to protect Oregon's public trust assets, the best available
17 science concludes that concentrations of atmospheric carbon dioxide cannot exceed 350 parts
18 per million or "ppm." As of 2011, atmospheric carbon dioxide concentrations are at least 390
19 ppm and are projected to exceed 400 ppm by 2020. Current atmospheric greenhouse gas
20 concentrations are the highest in at least 650,000 years.
21

22 27.

23 To reduce carbon dioxide in the atmosphere to 350 ppm by the end of the century, best
24 available science concludes that carbon dioxide emissions must not increase and must begin to
25 decline at a global average of at least 6 percent each year, beginning in 2013, through 2050.
26

PRAYER FOR RELIEF

1
2 WHEREFORE, Plaintiffs pray for judgment as follows:

3 47.

4 A declaration that the atmosphere is a trust resource, and that the State of Oregon, as a
5 trustee, has a fiduciary obligation to protect the atmosphere as a commonly shared public trust
6 resource from the impacts of climate change for Plaintiffs and for present and future
7 generations of Oregonians.

8 48.

9 A declaration that water resources, navigable waters, submerged and submersible lands,
10 islands, shorelands, coastal areas, wildlife, and fish are trust resources, and that the State of
11 Oregon, as a trustee, has a fiduciary obligation to protect these assets as commonly shared
12 public trust resources from the impacts of climate change for Plaintiffs and for present and
13 future generations of Oregonians.

14 49.

15 A declaration that Defendants have failed to uphold their fiduciary obligations to
16 protect these trust assets for the benefits of Plaintiffs as well as current and future generations
17 of Oregonians by failing adequately to regulate and reduce carbon dioxide emissions in the
18 State of Oregon.

19 50.

20 An order requiring Defendants to prepare, or cause to be prepared, a full and accurate
21 accounting of Oregon's current carbon dioxide emissions and to do so annually thereafter.

22 51.

23 An order requiring Defendants to develop and implement a carbon reduction plan that
24 will protect trust assets by abiding by the best available science.
25
26

Background

This case's history dates back to 2011.² On May 19, 2011, Plaintiffs filed an Amended Complaint for Declaratory Judgment and Equitable Relief. In summary, Plaintiffs are children and their families who live in Oregon and allege that their personal and economic well being is directly dependent upon the health of the state's natural resources held in trust for the benefit of its citizens, including water resources, submerged and submersible lands, coastal lands, forests, and wildlife. Plaintiffs allege that all of these assets are currently threatened by the impacts of climate change. Specifically, Plaintiffs allege that the interests of Plaintiffs will be adversely and irreparably injured by Defendants' failure to establish and enforce adequate limitations on the levels of greenhouse gas ("GHG") emissions that will reduce the level of carbon dioxide concentrations in the atmosphere. (Am. Compl. ¶ 11.) In the prayer for relief, Plaintiffs seek:

- (1) A declaration that the atmosphere is a trust resource, and that the State of Oregon, as a trustee, has a fiduciary obligation to protect the atmosphere.
- (2) A declaration that water resources, navigable waters, submerged and submersible lands, islands, shore lands, coastal areas, wildlife and fish are trust resources, and that the State of Oregon, as a trustee, has a fiduciary obligation to protect these assets.
- (3) A declaration that Defendants have failed to uphold their fiduciary obligations to protect these trust assets for the benefit of Plaintiffs as well as current and future generations of Oregonians by failing to adequately regulate and reduce carbon dioxide emissions in the State of Oregon.
- (4) An order requiring Defendants to prepare, or cause to be prepared, a full and accurate accounting of Oregon's current carbon dioxide emissions and to do so annually thereafter.
- (5) An order requiring Defendants to develop and implement a carbon reduction plan that will protect trust assets by abiding by the best available science.

² This opinion borrows heavily from this Court's original opinion filed April 5, 2012, particularly in the "Background" and "Separation of Powers Doctrine" sections.

- (6) A declaration that the best available science requires carbon dioxide emissions to peak in 2012 and to be reduced by six percent each year until at least 2050.³

Climate change has been an issue of concern in Oregon for over three decades.⁴ More recently, and more relevant to the case at bar, in 2004, then-Governor Ted Kulongoski appointed the Governor's Advisory Group on Global Warming ("Governor's Advisory Group"). In December 2004, the Governor's Advisory Group issued its report entitled *Oregon Strategy for Greenhouse Gas Reductions*, which recommended the following GHG reduction goals for Oregon:

- (1) By 2010, arrest the growth of, and begin to reduce, statewide GHG emissions.
- (2) By 2020, the state's total GHG emissions should not exceed a level 10 percent below the levels emitted in 1990.
- (3) By 2050, the state's total GHG emissions should be reduced to a level of at least 75 percent below 1990 levels.

GOVERNOR'S ADVISORY GROUP ON GLOBAL WARMING, OREGON STRATEGY FOR GREENHOUSE GAS REDUCTIONS (2004), <http://oregon.gov/ENERGY/GBLWRM/docs/GWReport-Final.pdf>.

In 2007, the Legislative Assembly enacted House Bill 3543 (HB 3543), which was largely codified in ORS 468A.200 to ORS 468A.260. In relevant part, ORS 468A.200 to ORS 468A.260 did three things. First, it legislatively found that global warming "poses a serious threat to the economic well-being, public health, natural resources and the environment of

³ Plaintiffs, in the Amended Complaint, include a section entitled "Science Documenting the Climate Crisis." This section sets forth the Plaintiffs' claims regarding the impact of fossil fuels and carbon dioxide on the environment and global temperatures. Plaintiffs allege that "to limit average surface heating to no more than 1°C (1.8°F) above pre-industrial temperatures, and to protect Oregon's public trust assets, the best available science concludes that concentrations of atmospheric carbon dioxide cannot exceed 350 parts per million."

⁴ In 1988, then-Governor Neil Goldschmidt created the Oregon Task Force on Global Warming. Based on the task force's recommendations, the Legislature passed Senate Bill 576, which established Oregon's first carbon emissions reduction goals. <http://www.oregon.gov/ENERGY/GBLWRM/Portal.shtml> (Last accessed March 30, 2012).

Oregon.” ORS 468A.200(3).⁵ Second, it adopted the GHG reduction goals recommended by the Governor’s Advisory Group in its 2004 report. ORS 468A.205(1). Third, it created the Oregon Global Warming Commission (the “Commission”). ORS 468A.215(1). The Commission is comprised of 25 members⁶ whose pertinent duties include:

- (1) Recommending ways to coordinate with state and local efforts to reduce GHG emissions consistent with ORS 468A.205;
- (2) Recommending statutory and administrative changes, policy measures and other recommendations to be carried out by state and local governments, businesses, nonprofit organizations and residents to further the goals established in ORS 468A.205;
- (3) Examining GHG cap-and trade systems as a means of achieving the goals established in ORS 468A.205;
- (4) Examining funding mechanisms to obtain low-cost GHG emissions reduction; and
- (5) Collaborating with state and local governments, the State Department of Energy, Department of Education, and State Board of Higher Education to develop and implement an outreach strategy to educate Oregonians about the impacts of global warming and to inform Oregonians of ways to reduce GHG emissions.

ORS 468A.235 to ORS 468A.245.

⁵ That global warming poses a “serious threat” is a “legislative finding” in the sense that the Legislature believes it is true and has, accordingly, decided to act upon that finding. Legislative facts or findings “are those which have relevance to legal reasoning and the lawmaking process, whether in the formulation of a legal principle or ruling by a judge or court or in the enactment of a legislative body.” *Chartrand v. Coos Bay Tavern*, 298 Or 689, 693 (1985) (internal quotation marks omitted). “Judicial notice of legislative facts is not subject to the Oregon Evidence Code, and parties are not entitled as a matter of right to present evidence to demonstrate such facts.” *Ecumenical Ministries of Oregon v. Oregon State Lottery Comm’n*, 318 Or 551, 558 (1994). As a former legislator, this Court understands the importance of legislative findings, which are not findings of fact in the same sense that judicial findings are. In the context of the case at bar, this Court wishes to make clear that it makes no comment at this juncture about the actual facts, or lack thereof, related to global warming.

⁶ The Commission is comprised of twenty-five members, eleven of whom are “voting members.” The voting members must have “significant experience” in the following fields: manufacturing, energy, transportation, forestry, agriculture, environmental policy. Additionally, two members of the Senate, not from the same political party, and two members of the House of Representatives, not from the same political party, shall serve as nonvoting members. ORS 468A.215.

Additionally, the statutes require that the Office of the Governor and other state agencies that are assigned the task of working to reduce GHG emissions must inform the Commission of their efforts and consider input from the Commission for such efforts. ORS 468A.235.

Plaintiffs, in the Amended Complaint, allege that in order to protect Oregon's public trust assets, the best available science concludes that concentrations of atmospheric carbon dioxide cannot exceed 350 parts per million. (Am. Compl. ¶ 26.) To reduce carbon dioxide to 350 parts per million by the end of the century, Plaintiffs allege that the best available science concludes that carbon dioxide emissions must not increase and must begin to decline at a global average of at least six percent each year, beginning in 2013, through 2050, then decline at a global average of five percent a year. (Am. Compl. ¶ 27.) Plaintiffs allege that the GHG emission goals established in ORS 468A.205 fail to achieve the necessary GHG reductions according to the best available science. (Am. Compl. ¶ 36.) Furthermore, Plaintiffs allege that even if the goals established by the Legislature were adequate, Oregon has fallen far short of those goals. *Id.*

In October 2011, Defendants filed a motion to dismiss for lack of subject matter jurisdiction. This Court heard oral argument in January 2012 and issued an Opinion and Order on April 5, 2012, granting Defendants' motion to dismiss.

Plaintiffs appealed on July 9, 2012. The Court of Appeals issued an Opinion on June 11, 2014, reversing and remanding the case. On remand, the Court of Appeals has instructed this Court that the Plaintiffs "are entitled to a judicial declaration of whether, as they allege, the atmosphere 'is a trust resource' that 'the State of Oregon, as a trustee, has a fiduciary obligation to protect * * * from the impacts of climate change,' and whether the other natural resources identified in plaintiffs' complaint also 'are trust resources' that the state has a fiduciary obligation to protect." *Chernaik v. Kitzhaber*, 263 Or App 463, 481 (2014).

After remand, the parties filed cross motions for summary judgment on January 9, 2015.

Plaintiffs, in their motion for partial summary judgment, request the following relief:

- (1) A declaration of law that the State of Oregon, as a trustee and sovereign entity, has a fiduciary obligation to manage the atmosphere, water resources, navigable waters, submerged and submersible lands, shorelands and coastal areas, wildlife and fish as public assets and to protect them from substantial impairment caused by the emissions of greenhouse gases in, or within the control of, the State of Oregon and the resulting adverse effects of climate change and ocean acidification;
- (2) A declaration that atmospheric concentrations of carbon dioxide exceeding 350 parts per million constitutes substantial impairment to the atmosphere and thereby the other public trust assets;
- (3) A declaration that to protect these public trust assets from substantial impairment, Oregon must contribute to global reduction in emissions of carbon dioxide necessary to return atmospheric concentrations of carbon dioxide to 350 parts per million by the year 2100; and
- (4) A declaration that Defendants have failed, and are failing, to uphold their fiduciary obligations to protect these trust assets from substantial impairment by not adequately reducing and limiting emissions of carbon dioxide and other greenhouse gases in, or within the control of, the State of Oregon.

(Pls.' Mot. Partial Summ. J. 1.) Plaintiffs intend, following entry of the requested declaratory judgment, to petition for supplemental relief in the form of an injunction that:

- (A) Requires Defendants to prepare, or cause to be prepared, a full and accurate accounting of Oregon's greenhouse gas emissions and to do so annually thereafter while this Court retains jurisdiction; and
- (B) Requires Defendants to develop and implement a greenhouse gas reduction plan, based on the best available science, to achieve reductions in emissions of carbon dioxide and other greenhouse gases in, or within the control of, the State of Oregon necessary to protect public trust assets and return atmospheric concentrations of carbon dioxide to 350 parts per million by the year 2100.

(Pls.' Mot. Partial Summ. J. 1, n.1.)

Defendants request that the Court make the following six rulings:

- (1) The common law public trust doctrine does not extend to the atmosphere.
- (2) The common law public trust doctrine does not impose the particular affirmative actions associated with traditional legal trusts (i.e., fiduciary obligations or duties). Instead, Oregon courts have applied it only as a restraint on alienation.
- (3) Because there are no fiduciary duties associated with the common law public trust doctrine, any declaratory or injunctive relief based on an alleged violation of such duties must be denied.
- (4) Even if this Court recognizes new fiduciary duties under the public trust doctrine, injunctive relief is not warranted, because the Court must presume that the State will comply with the new law as announced, and therefore, that no future violation of law is likely.
- (5) This Court is without authority to grant injunctive or further relief, because doing so would violate the principle of separation of powers.
- (6) Finally, this Court lacks authority to grant injunctive relief, because such relief would cause the Court to decide a political question that our constitutional system entrusts to the other branches of government.

(State's Mot. Summ. J. 1-2.) This Court heard oral argument on the cross motions referenced above on April 7, 2015 and now issues its opinion.

Standard of Review

Pursuant to ORCP 47, the "court shall grant the motion if the pleadings, depositions, affidavits, declarations and admissions on file show that there is no genuine issue as to any material fact and that the moving party is entitled to prevail as a matter of law."

Discussion

I. Public Trust Doctrine

The public trust doctrine originates, in part, from Roman civil law. *PPL Montana, LLC v. Montana*, 132 S Ct 1215, 1234 (2012). Traditionally, the doctrine stands for the legal principle that the ownership of and sovereignty over lands underlying navigable waters belong to

the respective States within which they are found. *Illinois Cent. R. Co. v. State of Illinois*, 13 S Ct 110, 111 (1892); *Id.* at 1235. The States' interest in lands underlying navigable waters, however, included a public trust in which the lands underlying navigable waters are to be preserved for the public's use in navigation and fishing. *Shively v. Bowlby*, 14 S Ct 548, 551-52 (1894); *Cook v. Dabney*, 70 Or 529, 532 (1914). Despite the aforementioned limitation, and pursuant to accepted principles of federalism, the States retain residual power to determine the scope of the public trust over navigable waters. *PPL Montana, supra*, 132 S Ct at 1235. Therefore, the public trust doctrine is a matter of state law, subject to the federal power to regulate navigation under the Commerce Clause and admiralty power. *Id.* This Court therefore turns to the question of what resources are encompassed by Oregon's public trust doctrine.

II. Natural Resources Encompassed by the Public Trust Doctrine

Plaintiffs argue that the public trust doctrine, in Oregon, applies to submerged and submersible lands, waters of the State, beaches and shorelands, fish and wildlife, and the atmosphere. Defendants argue that Oregon's public trust doctrine only encompasses submerged and submersible lands.

A. Submerged and Submersible Lands are Encompassed by the Public Trust Doctrine

"It is true that upon admission of the state into the Union, it was vested with the title to the lands under navigable waters, subject, however, at all times to the rights of navigation and fishery. To all intents and purposes the title of the state was burdened with a trust, so to speak, in favor of those two occupations. It would have no right or authority so to dispose of the subjacent lands in a manner calculated to prejudice or impede the exercise of those rights."

Cook, supra, 70 Or at 532.

The parties agree, and this Court declares, that the public trust doctrine encompasses submerged and submersible lands.

B. Waters of the State are not Encompassed by the Public Trust Doctrine

Oregon case law addressing the public trust doctrine has differentiated between the State's title to the lands under navigable waters and navigable waters themselves. Similarly to the aforementioned wording in *Cook*, the Oregon Supreme Court stated in regard to the lands underlying navigable waters that

“although the title passed to the state by virtue of its sovereignty, its rights were merely those of a trustee for the public. In its ownership thereof, the state represents the people, and the ownership is that of the people in their united sovereignty, while the waters themselves remain public so that all persons may use the same for navigation and fishing. These lands are held in trust for the public uses of navigation and fishery . . . Being subject to this trust, they are *publici juris*; in other words, they are held for the use of the people at large. It was therefore concluded that the state can make no sale or disposal of the soil underlying its navigable waters so as to prevent the use by the public of such waters for the purposes of navigation and fishing.”

Corvallis Sand & Gravel Co. v. State Land Bd., 250 Or 319, 334 (1968) (quotations and citations omitted).

The public trust doctrine, described in detail by the Court of Appeals, was predicated on title transferring to the State and the fee simple interest that was included therein. *Morse v. Oregon Division of State Lands*, 34 Or App 853, 859-62 (1978), *aff'd* 285 Or 197 (1979). As discussed above in *Corvallis Sand*, title to submerged and submersible lands transferred to the State of Oregon upon its admission to the Union. *Corvallis Sand, supra*, 250 Or at 334. Unlike submerged and submersible lands, title to navigable waters themselves did not pass to the State. Therefore, this Court declares that the public trust doctrine does not encompass waters of the State.

C. Beaches and Shorelands are not Encompassed by the Public Trust Doctrine

Plaintiffs acknowledge that “no Oregon case has held explicitly that the Public Trust Doctrine applies to Oregon's iconic beaches.” (Pls.' Mot. for Partial Summ. J. 10.) After

reviewing the limited case law addressing the public trust doctrine, it appears that Oregon's public trust doctrine has not traditionally incorporated lands adjacent to but not underlying navigable waters. Therefore, this Court declares that the public trust doctrine does not apply to beaches, shorelands, or islands.

D. Fish and Wildlife are not Encompassed by the Public Trust Doctrine

Although the title of migratory fish and game "is held by the state, in its sovereign capacity in trust for all its citizens," these natural resources are regulated pursuant to laws that have been "upheld as legitimate exercises of the police power employed by a state to protect the welfare of all its citizens." See *State v. Hume*, 52 Or 1, 6 (1908) (demonstrating principle); *Monroe v. Withycombe*, 84 Or 328, 334-35 (1917). Plaintiffs acknowledge that courts "have always treated the Public Trust Doctrine as distinct from the State's police power authority." (Pls.' Resp. in Opp'n to State's Mot. for Summ. J. 18.) Based on that acknowledged distinction (which the Court finds to be appropriate) between the State's police power and the public trust doctrine, and considering the narrow scope of the public trust doctrine, this Court declares that the public trust doctrine does not apply to fish and wildlife.

E. The Atmosphere is not Encompassed by the Public Trust Doctrine

In their arguments addressing whether or not the public trust doctrine encompasses the atmosphere, the parties rely on cases from other states because no Oregon court has ever addressed the issue. Although case law from other states is perhaps informative, the public trust doctrine, as it is applied in each state, is a matter of that state's law. Oregon's public trust doctrine is a construct developed through Oregon's common law and its general principles have long been settled.

This particular natural resource, the atmosphere, is unique among all other natural resources that Plaintiffs allege are encompassed by the public trust doctrine. This Court first

questions whether the atmosphere is a “natural resource” at all, much less one to which the public trust doctrine applies. *Merriam-Webster* defines “resource” as “a natural feature or phenomenon that enhances the quality of human life.” MERRIAM-WEBSTER (2015). Although the atmosphere perhaps may be said to fall within this broad definition of “resource,” the atmosphere does not fit into the structure and legal reasoning which underpins Oregon’s public trust doctrine for the following reasons:

First, the State does not hold title to the atmosphere. Title to

“land underlying navigable waters devolved on the state upon its admission to the union. Such title included a full fee simple interest, historically called *jus privatum*, which was qualified by a public trust or *jus publicum*. By the terms of the public trust, submerged and submersible lands were to be preserved for public use in navigation, fishing and recreation . . . The severe restriction upon the power of the state as trustee to modify water resources is predicated not only upon the importance of the public use of such waters and lands, but upon the exhaustible and irreplaceable nature of the resources and its fundamental importance to our society and to our environment. These resources, after all, can only be spent once. Therefore, the law has historically and consistently recognized that rivers and estuaries once destroyed or diminished may never be restored to the public and, accordingly, has required the highest degree of protection from the public trustee.”

Morse, supra, 34 Or App at 859-60. As described in the Court’s discussion regarding waters of the State, the public trust doctrine originated when title to the lands beneath navigable waters transferred to the State. Unlike submerged and submersible lands (and similar to the waters of the State) the State has not been granted title to the atmosphere.⁷

⁷ The atmosphere is not acquired and sold or traded for economic value and hence is not a commodity. Concepts of title generally are based expressly or impliedly on property concepts which, by their nature, reflect commodity concepts; namely, that a thing can be measured or divided and used.

The Court notes that the harnessing of wind energy does produce mechanical energy and ultimately electricity. However, wind is not traded and sold amongst individuals as water, land, and fish and wildlife are. Rather, turbines sit, for example in Eastern Oregon, and absorb wind,

Second, the atmosphere does not present the same concern of being “exhaustible and irreplaceable” in nature, as the Court of Appeals referenced above in *Morse*.⁸ The atmosphere is not the type of resource that “can only be spent once,” although it certainly can be polluted or otherwise changed.

This Court, based on its understanding of the history of the public trust doctrine in Oregon, cannot conclude that the atmosphere is a “resource” to which the public trust doctrine is applicable. The Court is constrained by, among other things, the aspirational, rather than imperative, nature of the legislative response to the problem of global warming, as discussed earlier. Therefore, this Court declares that the public trust doctrine does not apply to the atmosphere.⁹

III. Duties Imposed by the Public Trust Doctrine

Plaintiffs argue that the State has a fiduciary obligation to protect the atmosphere and other public trust resources from impairment. Plaintiffs argue that in order to uphold its obligation under the public trust doctrine to manage and preserve essential natural resources in trust for the benefit of the citizenry, the State of Oregon must take action as soon as possible to achieve the reductions necessary to meet its obligation to return atmospheric concentrations of carbon dioxide to 350 parts per million by the year 2100. Defendants argue that even if the atmosphere or other resources are deemed assets encompassed by the public trust doctrine, the

converting the energy from the wind into electricity. Similarly, solar panels sit and absorb sunlight, converting the energy from the sun into electricity.

⁸ The Court is not suggesting that the atmosphere cannot be harmed. The remedy for the harm, if there is to be one, cannot be based on the public trust doctrine.

⁹ Defendants argue, and this Court agrees, that the State has the authority, under its police power, to enact laws and take other actions to protect the atmosphere regardless of whether this Court declares that the public trust doctrine encompasses the atmosphere. (State’s Mem. In Supp. of Mot. Summ. J. 6.)

obligations associated with the trust are not fiduciary. Defendants argue that the public trust doctrine imposes a restraint on alienation rather than affirmative duties.¹⁰

“[I]t was recognized as the settled law of this country that the ownership of, and dominion and sovereignty over, lands covered by tide waters, or navigable lakes, within the limits of the several states, belong to the respective states within which they are found, with consequent right to use or dispose of any portion thereof, **when that can be done without substantial impairment of the interest of the public in such waters**, and subject to the paramount right of Congress to control their navigation so far as may be necessary for the regulation of commerce.”

Morse, supra, 285 Or at 201-02 (emphasis added). In *Morse*, the Court concluded that there was no grant to a private party that resulted in such substantial impairment of the public’s interest as would be beyond the power of the legislature to authorize and held that the public trust doctrine does not prevent all fills for other than water-related uses. The Court of Appeals similarly noted that although petitioners argued that the public trust doctrine prohibited the issuance of a gravel removal permit, the grant to a private party in that case did not involve a substantial impairment of the public interest as would be beyond the power of the legislature to authorize. *Kalmiopsis Audubon Society v. Division of State Lands*, 66 Or App 810, 820 n.11 (1984).

Reviewing the relevant case law, it appears to this Court that, historically, courts applying the public trust doctrine have merely prevented the State from entirely alienating submerged and submersible lands under navigable waters. Here, similar to the Oregon cases cited herein, there has been no grant to a private party alienating the atmosphere.¹¹ Again, this Court does not

¹⁰ Defendants further argue that if the Court were to determine that the State owes fiduciary duties to the atmosphere, the Court should decline to issue a declaration concluding that the State has failed to uphold those duties because those duties would constitute newly-recognized obligations and the State is entitled to the presumption that it will comply with the law, as declared. This Court concurs. As the Court of Appeals stated in its opinion, “it must be assumed that the state will act in accordance with a judicially issued declaration regarding the scope of any duties that the state may have under the public trust doctrine.” *Chernaik, supra*, 263 Or App at 479.

¹¹ It is, in fact, difficult for the Court to imagine how the atmosphere can be entirely alienated.

believe that it is empowered, on the showing made by Plaintiffs, to rewrite the public trust doctrine to impose fiduciary duties. As a result, this Court declares that the State does not have a fiduciary obligation to protect submerged and submersible lands from the impacts of climate change.¹²

IV. Relief

Although the Court, in this Opinion, has made the declarations required by the Court of Appeals, the Court will further discuss relevant issues below in an attempt to make a complete record fully reviewable by the Court of Appeals.

A. Separation of Powers Doctrine

The Separation of Powers Doctrine stems from Article III, section 1, of the Oregon Constitution. It provides,

The powers of the Government shall be divided into three separate [sic] departments, the Legislative, the Executive, including the administrative, and the Judicial; and no person charged with official duties under one of these departments, shall exercise any of the functions of another, except as in this Constitution expressly provided.

Or Const, Art III, § 1. Although the Separation of Powers Doctrine mandates three separate and distinct branches of government, that separation is not always complete as some interaction between the branches remains desirable. *Rooney v. Kulongoski*, 322 Or 15, 28 (1995), citing The Federalist No 51 (A. Hamilton or J. Madison) (stating that separation of powers is deemed “essential to the preservation of liberty”); *Monaghan v. School District No. 1*, 211 Or 360, 364 (1957). Thus, a violation of separation of powers will be found only if the violation is clear. *Rooney, supra*, 322 Or at 28. To determine whether there has been a clear violation of the

¹² See Footnote 5, above, regarding the Court’s comment on “the impact of global warming.”

Separation of Powers Doctrine, the court makes two inquiries: (1) the “undue burden” inquiry; and (2) the “functions” inquiry. *Id.*

First, using the “undue burden” inquiry, the court must determine whether one department has “unduly burdened” the actions of another department in an area of responsibility or authority committed to the other department. *Id.* The “undue burden” inquiry “corresponds primarily to the underlying principle that separation of powers seeks to avoid the potential for coercive influence between governmental departments.” *Id.* In *Rooney*, the Oregon Supreme Court held that their ballot title review function did not offend the Separation of Powers Doctrine. *Id.* at 29-30. The Court noted that “judicial review of the Attorney General’s acts done pursuant to statute is a *well-established* role for the court and does not present the potential for the court to influence coercively the Attorney General.” *Id.* at 29 (emphasis added).

Here, Plaintiffs’ requested relief seeks to, among other things: (1) impose a fiduciary obligation on Defendants to protect the atmosphere from climate change;¹³ (2) declare that Defendants have failed to meet this standard; and (3) compel Defendants to address the impact of climate change by reducing GHG emissions in a specific amount over an established timeframe. (Am. Compl. ¶¶ 47-52.)

Contrary to their own stated position, Plaintiffs are clearly asking this Court to substitute its judgment for that of the Legislature. Plaintiffs ask the Court to: (1) order Defendants to “develop and implement a carbon reduction plan that will protect trust assets by abiding by the best available science,” and (2) issue a “declaration that the best available science requires carbon dioxide emissions to peak in 2012 and to be reduced by at least six percent each year until

¹³ While the declaration that the atmosphere is a public trust resource is only one aspect of Plaintiffs’ requested relief, the atmosphere is central to the entire Amended Complaint. Plaintiffs want the atmosphere to be protected, through GHG emission reduction, in order to protect other named public trust assets.

at least 2050.” (Am. Compl. ¶¶ 51, 52.) Unlike in *Rooney*, Plaintiffs ask this Court to step far outside of its well-established role – of adjudicating facts and analyzing extant law in the context of a concrete dispute – and affirmatively rule in contradiction to laws democratically established by the Legislature. That is true because, if this Court were to grant Plaintiffs’ requested relief, it would effectively “strike down” HB 3543 and ORS 468A.200 to ORS 468A.260. Plaintiffs’ requested relief would create a more stringent standard for GHG emission reductions and would thereby displace those goals established by the Legislature in HB 3543 and ORS 468A.200 to ORS 468A.260. It is hard to imagine a more coercive act upon the legislative department than to strike out a statutory provision and supplant it with the Court’s own formulation.¹⁴ Thus, the Court concludes that Plaintiffs’ requested relief would impose an “undue burden” on the legislative branch and therefore would violate the Separation of Powers Doctrine. Indeed, it is difficult to see this case as anything other than an “undue burden” on the legislative branch when the Plaintiffs are really asking a solitary judge in one of thirty-six counties to completely subvert the legislative process and thereby subvert the elective representatives of the sovereign acting in concert with one another. The Plaintiffs effectively ask the Court to do away with the Legislature entirely on the issue of GHG emissions on the theory that the Legislature is not doing enough. If “not doing enough” were the standard for judicial action, individual judges would regularly be asked to substitute their individual judgment for the collective judgment of the Legislature, which strikes this Court as a singularly bad and undemocratic idea.

Second, using the “functions” inquiry, the court must determine whether one department is, or will be, performing functions committed to another department. *Rooney, supra*, 322 Or at

¹⁴ It is well within the court’s established role to strike down statutes when they are unconstitutional. Here, there is no allegation of unconstitutionality – Plaintiffs simply are dissatisfied with the Legislature’s choice not to go as far as Plaintiffs wish to have it go.

28. In Oregon, the constitutionally-mandated framework for addressing issues of statewide significance is as follows. The Governor is the chief executive of the state. Or Const, Art V, §1. In that capacity, it is her constitutional duty to see “that the Laws be faithfully executed.” *Id.* at §10. The principal responsibility for making “the Laws,” which the Governor is to “execute,” lies with the Legislature. Or Const, Art IV, §1 (vesting state’s legislative power in the Legislative Assembly). However, in the course of discharging her executive duties, the Governor is required to keep the Legislature informed as to the condition of the state and she must recommend new laws to the Legislature as she deems appropriate. Or Const, Art V, §11. This is exactly the approach that former Governor Kitzhaber and the Legislature have taken with respect to climate change.¹⁵ The 2007 Legislative Assembly, following the recommendations from the Governor’s Advisory Group, enacted ORS 468A.200 to ORS 468A.260, which adopted specific GHG emissions goals for the state to achieve by 2010, 2020, and 2050. Plaintiffs, without arguing that ORS 468A.200 to ORS 468A.260 is unconstitutional or violates any statute, essentially ask the Court to impose a similar but more stringent policy. This is classic lawmaking and is the core function constitutionally reserved to the Legislature. That function is to decide politically – based upon whatever facts it deems relevant to the determination – whether or not global warming is a problem and what, if anything, ought to be done about it. Whether the Court thinks global warming is or is not a problem and whether the Court believes the Legislature’s GHG emission goals are too weak, too stringent, or are altogether unnecessary is beside the point. These determinations are not judicial functions. They are legislative functions.

¹⁵ See “Background” section, above.

Therefore, the Court concludes that if it were to grant Plaintiffs' proposed relief, the Court would violate the Separation of Powers Doctrine.

B. Political Question Doctrine

The Political Question Doctrine is a variation on the Separation of Powers Doctrine. While the Oregon Supreme Court has recognized the Political Question Doctrine,¹⁶ it is not clear whether this doctrine extends more, less, or the same freedom from judicial scrutiny as the Separation of Powers Doctrine standing alone. The Court finds it unnecessary to discuss the political question doctrine at length because the Court's discussion regarding the separation of powers doctrine thoroughly addresses Plaintiffs' proposed relief.¹⁷

C. Adversity

Lastly, the Court notes its lingering concern about questions of justiciability and adversity relating to Plaintiffs' proposed relief. Defendants do not dispute that climate change is an issue. Neither Plaintiffs nor Defendants argue that the State should refrain from regulating the impacts of climate change entirely or that the State should do less than what the State is currently doing to regulate the impacts of climate change. Rather, the dispute is confined to the extent the State should regulate the impacts of climate change. Should this case be remanded, this Court's inquiry would ultimately concern the desirable level of atmospheric concentrations of carbon

¹⁶ In *Putnam v. Norblad*, 134 Or 433 (1930), the Oregon Supreme Court recognized the Political Question Doctrine. The Court stated that "[i]t is a well-settled doctrine that political questions are not within the province of the judiciary, except to the extent that power to deal with such questions has been conferred by express constitutional or statutory provision." *Id.* at 440. The Court acknowledged that it was "not always easy to define the phrase 'political' question, nor to determine which matters fall within its scope." *Id.*

¹⁷ The decision to cap GHG emissions and the level at which GHG emissions should be capped are policy decisions that should remain with the Legislature.

dioxide and the Court may not be limited to narrow parameters of the issue presented by the parties.¹⁸

V. Summary Judgment Record

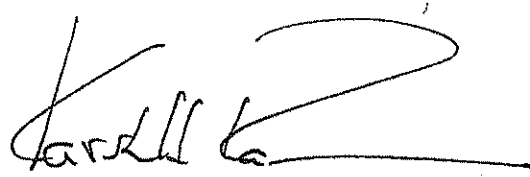
Summary judgment is appropriate only where there are no genuine issues of material fact and the moving party is entitled to judgement as a matter of law. ORCP 47. Even if, *arguendo*, the Court of Appeals were to reverse and remand the case to this Court once again, this Court explicitly notes, based on the record, that there are genuine issues of material fact preventing summary judgment under ORCP 47 regarding whether there is an appropriate level of atmospheric concentrations of carbon dioxide and if so, what the appropriate level should be. As a result, this Court would be obligated to hold trial, with the necessary experts and evidence, before determining appropriate relief.

Conclusion

Based on the foregoing reasons, Plaintiffs' motion for partial summary judgment is DENIED. Defendants' motion for summary judgment is GRANTED.

Renee Stineman shall prepare a judgment which shall expressly incorporate this Opinion and Order therein.

Dated this 11th day of May, 2015.



Karsten H. Rasmussen, Presiding Judge

¹⁸ As this Court noted above, in this Court's view, this issue belongs with the Legislature.

MOTION

In accordance with the November 17, 2014 Scheduling Order and pursuant to ORCP 47, Plaintiffs respectfully move for an order granting partial summary judgment on Plaintiffs' first claim for declaratory relief under the Public Trust Doctrine. More specifically, Plaintiffs request the following relief:

1. A declaration of law that the State of Oregon, as a trustee and sovereign entity, has a fiduciary obligation to manage the atmosphere, water resources, navigable waters, submerged and submersible lands, shorelands and coastal areas, wildlife and fish as public trust assets, and to protect them from substantial impairment caused by the emissions of greenhouse gases in, or within the control of, the State of Oregon and the resulting adverse effects of climate change and ocean acidification;

2. A declaration that atmospheric concentrations of carbon dioxide (CO₂) exceeding 350 parts per million (ppm) constitutes substantial impairment to the atmosphere and thereby the other public trust assets;

3. A declaration that to protect these public trust assets from substantial impairment, Oregon must contribute to global reduction in emissions of CO₂ necessary to return atmospheric concentrations of carbon dioxide to 350 ppm by the year 2100; and

4. A declaration that Defendants have failed, and are failing, to uphold their fiduciary obligations to protect these trust assets from substantial impairment by not adequately reducing and limiting emissions of carbon dioxide and other greenhouse gases in, or within the control of, the State of Oregon.¹

¹ In accordance with ORS 28.080, Plaintiffs intend following entry of the requested declaratory judgment to petition for supplemental relief in the form of an injunction that:

- A. Requires Defendants to prepare, or cause to be prepared, a full and accurate accounting of Oregon's greenhouse gas emissions and to do so annually thereafter while this Court retains jurisdiction; and

1 This motion for partial summary judgment is supported by the accompanying
2 memorandum of points and authorities and declarations from the following individuals and
3 associated exhibits:

4 A. Plaintiff Kelsey Cascadia Rose Juliana;

5 B. Plaintiff Olivia Chernaik;

6 C. Dr. James Hansen, former Director of the NASA Goddard Institute for Space Studies
7 and Adjunct Professor at Columbia University's Earth Institute;

8 D. Dr. Phil Mote, Professor at Oregon State University and Director of the Oregon
9 Climate Change Research Institute ("OCCRI") and Oregon Climate Services;

10 E. Dr. Burke Hales, Professor of Ocean Ecology and Biogeochemistry in the College of
11 Earth, Ocean and Atmospheric Sciences at Oregon State University;

12 F. Mr. Ernie Niemi, President and Founder of Natural Resource Economics; and

13 G. The declaration of William H. Sherlock and attached exhibits consisting of reports from
14 public authorities.

15 Plaintiffs request 90 minutes for oral argument, which is scheduled for March 13, 2015;
16 at 10:00 am.

17 //

18 //

19 //

20 B. Requires Defendants to develop and implement a greenhouse gas reduction plan,
21 based on the best available science, to achieve reductions in emissions of carbon
22 dioxide and other greenhouse gases in, or within the control of, the State of Oregon
23 necessary to protect public trust assets and return atmospheric concentrations of
carbon dioxide to 350 ppm by the year 2100.

24 Plaintiffs also intend to request that this Court retain jurisdiction to review, approve and
25 oversee implementation of the annual accountings and greenhouse gas reduction plan as
26 necessary to ensure protection of and to prevent substantial impairment and waste of public
trust assets.

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IN THE CIRCUIT COURT OF THE STATE OF OREGON
FOR THE COUNTY OF LANE

OLIVIA CHERNAIK, a minor and resident of Lane County, Oregon; LISA CHERNAIK, guardian of Olivia Chernaik; KELSEY CASCADIA ROSE JULIANA, a minor and resident of Lane County, Oregon, and CATHY JULIANA, guardian of Kelsey Juliana,

Plaintiffs,

v.

JOHN KITZHABER, in his official capacity as Governor of the State of Oregon; and the STATE OF OREGON,

Defendants.

Case No. 161109273

DEFENDANTS' ANSWER TO PLAINTIFFS' FIRST AMENDED COMPLAINT FOR DECLARATORY JUDGMENT AND EQUITABLE RELIEF

ORS 20.140 - State fees deferred at filing

Defendants Governor John Kitzhaber and the State of Oregon ("Defendants"), by and through their attorney, Sarah Weston, Assistant Attorney General, answer and raise affirmative defenses to Plaintiffs' First Amended Complaint for Declaratory Judgment and Equitable Relief as follows:

GENERAL RESPONSE

Defendants deny each and every allegation of plaintiff's complaint not expressly admitted in this Answer. As specifically noted below, Defendants are without knowledge and information sufficient to form a specific belief either about the current impact of global climate change on Plaintiffs' ability to engage in the activities that form the basis of the complaint or the likely specific impacts of global climate change on Plaintiffs' during their lifetimes. Specific, localized harms of global warming are difficult to predict. Nevertheless, Defendants agree that global climate change is a very serious problem that is causing, and will continue to cause, harm

1 to our planet and the State of Oregon, if global greenhouse gas emissions are not
2 curtailed. Debating or resolving the specific scope and contours of the particular effects of
3 global climate change raised by Plaintiffs is not necessary to the resolution of the issues in this
4 case, as Defendants admit that global climate change is more likely than not to affect Plaintiffs in
5 their lifetimes.

6 1.

7 In response to paragraph 1, Defendants admit that Plaintiffs are children and their
8 families who live in Oregon, and that their personal and economic well-being is dependent upon
9 the health of natural resources in this State including water resources, submerged and
10 submersible lands, coastal lands, forests, and wildlife. The nature of the State's relationship to
11 these resources is a legal conclusion, to which no response is required or provided. Defendants
12 further admit that these natural resources are currently threatened by the impacts of global
13 climate change. The balance of paragraph 1 describes the nature of this complaint and action, to
14 which defendant responds that the complaint speaks for itself, and no further response is
15 required. To the extent there are factual allegations or assumptions in this paragraph not
16 expressly admitted, they are denied.

17 2.

18 Defendants admit the allegations in paragraph 2.

19 3.

20 Paragraph 3 states legal conclusions to which no response is required or provided;
21 however, to the extent there are factual allegations or assumptions in this paragraph not expressly
22 admitted, they are denied.

23 4.

24 In response to paragraph 4, Defendants admit sentences 1-5. They are without
25 knowledge and information sufficient to form a specific belief as to the current or future impact
26 of global climate change on these Plaintiffs' ability to engage in the specific activities described

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1 in this paragraph. Defendants admit that Lisa Chernaik wishes to continue to engage in the
2 activities described in this paragraph. Defendants admit that global climate change is likely to
3 lead to some loss of beaches and shorelines from erosion and rising sea levels, but are without
4 knowledge or information sufficient to form a belief as to how this might specifically impact
5 these Plaintiffs' ability to engage in the activities described in this paragraph. The balance of
6 paragraph 4 states legal conclusions to which no response is required or provided; however, to
7 the extent there are factual allegations or assumptions in this paragraph not expressly admitted,
8 they are denied.

9

5.

10 In response to paragraph 5, Defendants admit the first sentence. Defendants admit that
11 global climate change is likely to result in some heating of the oceans and have impacts on
12 fisheries and other sea life, but are without knowledge or information sufficient to form a belief
13 as to how this might specifically impact these Plaintiffs' ability to enjoy seafood. The balance of
14 paragraph 5 states legal conclusions to which no response is required or provided; however, to
15 the extent there are factual allegations or assumptions in this paragraph not expressly admitted,
16 they are denied.

17

6.

18 In response to paragraph 6, Defendants admit the first sentence. Defendants admit that
19 global climate change is likely to result in some changes in water availability, drought, pests,
20 rising temperatures, and weather changes, but are without knowledge or information sufficient to
21 form a belief as to how this might specifically impact these Plaintiffs' ability to pick berries and
22 grow fruit and vegetables in their backyard. The balance of paragraph 6 states legal conclusions
23 to which no response is required or provided; however, to the extent there are factual allegations
24 or assumptions in this paragraph not expressly admitted, they are denied.

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7.

2 In response to paragraph 7, Defendants admit the first sentence, and are without
 3 knowledge or information sufficient to form a belief as to the second sentence. Defendants
 4 admit that global climate change is likely to lead to some rising temperatures and weather
 5 changes that may lead to increased allergy and related health problems, but are without
 6 knowledge or information sufficient to form a belief as to how this might specifically impact
 7 these Plaintiffs' allergy and related health problems. The balance of paragraph 7 states legal
 8 conclusions to which no response is required; however, to the extent there are factual allegations
 9 or assumptions in this paragraph not expressly admitted, they are denied.

10

8.

11 Defendants admit the first four sentences of paragraph 8. Defendants further admit that
 12 global climate change is likely to result in some change to ecosystems from drought and rising
 13 temperatures, and to cause some changes to Oregon's weather patterns, but are without
 14 knowledge or information sufficient to form a belief as to how this might specifically affect these
 15 Plaintiffs' ability to enjoy hiking and backpacking at these locations or the other activities listed
 16 in this paragraph. The balance of paragraph 8 states legal conclusions to which no response is
 17 required; however, to the extent there are factual allegations or assumptions in this paragraph not
 18 expressly admitted, they are denied.

19

9.

20 Defendants admit the first three sentences of paragraph 9. Defendants admit that global
 21 climate change is likely to lead to some loss of beaches and shorelines from erosion, rising sea
 22 levels, and the heating of the ocean and consequent impacts on fisheries and other sea life, but
 23 are without knowledge or information sufficient to form a belief as to how this might specifically
 24 affect these Plaintiffs' ability to enjoy seafood or the other activities listed in this paragraph. The
 25 balance of paragraph 9 states legal conclusions to which no response is required.

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Defendants admit the first four sentences of paragraph 10. Defendants admit that global climate change is likely to result in some reduced water availability, drought, increases in pests, rising temperatures and weather changes, but are without knowledge or information sufficient to form a belief as to how this might specifically affect these Plaintiffs' ability to engage in the activities listed in this paragraph. The balance of paragraph 10 states legal conclusions to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

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Paragraph 11 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted herein, they are denied.

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12.

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Paragraph 12 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

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13.

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Paragraph 13 describes the nature of this lawsuit, to which Defendants respond that the complaint speaks for itself; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

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Paragraph 14 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

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Paragraph 15 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

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Paragraph 16 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

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Paragraph 17 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

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Paragraph 18 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

17

19.

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In response to paragraph 19, the Defendants admit that the air or atmosphere is necessary for health, welfare and commerce in Oregon. The balance of paragraph 19 states legal conclusions, to which no response is required or provided; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

22

20.

23

The terms "safe climate-zone" and "life as we know it" in paragraph 20 are undefined, and Defendants are thus unable to respond to those allegations; however, to the extent a response is required, they are denied. Defendants admit that anthropogenic greenhouse gas emissions have caused, and are causing, global climate change. Defendants further admit that the extent of

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1 greenhouse gases in the atmosphere has changed and fluctuated over geologic time, but has been
2 at a point of equilibrium sufficient to sustain life for at least thousands of years. Defendants
3 further admit that global climate change is causing, and is likely to continue to cause, significant
4 adverse effects such as disruption of natural ecosystems, displacement or disappearance of some
5 animal species, increases in the frequency and intensity of storms and other extreme weather
6 events, increases in the frequency and severity of droughts in some areas, warmer and more
7 frequent periods of intense heat, rising sea levels, decreased agricultural productivity in some
8 areas, sea level rise and coastal erosion. Except as specifically admitted, Defendants are without
9 knowledge or information sufficient to form a belief as to the balance of paragraph 20.

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21.

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Defendants admit the allegations in paragraph 21.

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22.

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Defendants admit the allegations in paragraph 22.

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23.

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Defendants admit the allegations in paragraph 23.

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Defendants admit the allegations in paragraph 24.

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25.

19 In response to paragraph 25, Defendants note that the term "appropriate action" is vague,
20 and impossible to respond to; however, to the extent a response is required and not expressly
21 admitted, they are denied. Defendants admit that taking no action globally to address global
22 climate change may result in the consequences and potential consequences laid out in
23 paragraph 25.

24

26.

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In response to paragraph 26, Defendants admit the first, third and fourth sentences. They

26

further respond that the nature, existence and extent of the State's public trust assets, and what is

1 needed to protect them, states a legal conclusion to which no response is required or provided,
2 and that they are without knowledge or information sufficient to form a belief as to the balance
3 of the second sentence.

4 27.

5 In response to paragraph 27, the Defendants are without knowledge or information
6 sufficient to form a belief as to the first two sentences. Defendants admit that the carbon
7 sequestration actions described in the third sentence are some of the ways that greenhouse gasses
8 might be reduced.

9 28.

10 The Defendants admit paragraph 28.

11 29.

12 Paragraph 29 references and purports to summarize conclusions expressed in the 2011
13 Oregon Climate Assessment Report, which was the most recent Climate Assessment Report
14 published by the OCCRI at the time the amended complaint was filed. Defendants deny that this
15 is the most recent report published by the OCCRI. In response to the balance of paragraph 29,
16 which purports to summarize portions of the 2011 report, Defendants respond that the report
17 speaks for itself and is best evidence of its contents. Defendants admit that the impacts in
18 Oregon of human-caused global climate change have been predicted to be severe if global carbon
19 dioxide emissions are not curtailed.

20 30.

21 In response to paragraph 30, which appears to quote or to summarize portions of the 2011
22 OCCRI Oregon Climate Assessment Report, Defendants respond that the report speaks for itself
23 and is best evidence of its contents. Defendants admit that global climate change poses risks to
24 the health of all Oregonians.

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31.

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In response to paragraph 31, which appears to quote or to summarize portions of the 2011 OCCRI Oregon Climate Assessment Report, Defendants respond that the report speaks for itself and is best evidence of its contents, and while Defendants generally admit that the report discusses and recognizes the risks set forth in paragraph 31, Defendants deny that the summaries set forth in paragraph 31 fully and completely represent that report. Defendants admit that global climate change is likely to impose substantial costs to Oregonians, including costs associated with fighting wild fires, and that these costs may be reduced if global greenhouse gas emissions and global climate change are lessened.

10

32.

11

Defendants admit that HB 3542 was passed in 2007. The text of HB 3542, now codified as ORS 468A.205, speaks for itself, and is the best evidence of its contents. While Defendants generally admit that HB 3542 addresses the topics mentioned in paragraph 32, Defendants deny that the summaries set forth in paragraph 32 fully and completely represent the text of the bill. Defendants admit that the state-specific goals set forth in HB 3542 will be inadequate on their own to reduce global carbon dioxide concentration to 350 ppm. Plaintiffs' allegation that a particular level of state-specific greenhouse gas emissions reductions will be inadequate to protect Oregon's trust assets states a legal conclusion, to which no response is required or given; however, to the extent there are factual allegations or assumptions in those allegations not expressly admitted, they are denied.

21

33.

22

In response to paragraph 33, Defendants are without knowledge or information sufficient to form a belief as to whether the Oregon Global Warming Commission has stated a position on the facts alleged in paragraph 33, but admit that the 2011 Climate Assessment Report is consistent with the facts alleged in paragraph 33.

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34.

Defendants admit paragraph 34.

35.

Defendants admit they have authority to curtail some greenhouse gas emissions in the State and to take some steps to increase carbon sequestration. Plaintiffs' allegation that particular steps are necessary for the State to take to protect the "public trust assets of the State", and that the State has the authority to take those steps, is both vague and a legal conclusion, to which no response is required or given; however, to the extent there are factual allegations or assumptions in this allegation not expressly admitted, they are denied. Defendants admit that in 2004, the Governor's Advisory Group on Global Warming developed a plan to reduce Oregon's greenhouse gas emissions. In response to the allegations purporting to summarize or characterize the plan, Defendants respond that the plan speaks for itself and is the best evidence of its contents. Paragraph 35 is vague in that it does not specify what reductions Plaintiffs allege are "mandated by the best available science" and Defendants are thus unable to admit or deny the allegation of whether Oregon's state specific targets are adequate or inadequate to achieve that alleged reduction, or whether Oregon's plan includes "a majority of" the "greenhouse gas reductions" that Plaintiffs allege are "necessary".

36.

Defendants admit that Oregon is likely to fall well short of the targets set by its greenhouse gas reduction and mitigation plan. Defendants admit that in the 2009 report to the legislature, the Oregon Global Warming Commission reported that "even if all the actions now 'in progress' are completed by 2020, the State will likely fall well short of meeting its 2020 emission reduction goal, and, by extrapolation, clearly is not on track to meet its 2050 goal." The allegation that "[the 2020 and 2050 goals set by the legislature] 'would fail to achieve the necessary reductions according to the best available science'" is vague, as the paragraph does not

1 specify what Plaintiffs believe the "necessary reductions according to the best available science"
2 might be, thus, Defendants are unable to admit or deny this allegation.

3 37.

4 Defendants admit that the allegations in paragraph 37 present some of the possible
5 methods by which global anthropogenic greenhouse gas emissions could be significantly reduced
6 and that the State has already implemented some of these strategies to reduce greenhouse gas
7 emissions in Oregon and has promoted some of these strategies to be adopted at the national
8 level to reduce national greenhouse gas emissions. Except as specifically admitted, Defendants
9 are without knowledge or information sufficient to form a belief as to the balance of the
10 allegations in paragraph 37.

11 **FIRST CLAIM FOR RELIEF**

12 **(Declaratory Judgment – Public Trust)**

13 38.

14 Defendants respond to paragraph 38 as it responded to paragraphs 1-37, above.

15 39.

16 Paragraph 39 states legal conclusions, to which no response is required or provided;
17 however, to the extent there are factual allegations or assumptions in this paragraph not expressly
18 admitted, they are denied.

19 40.

20 In response to paragraph 40, Defendants admit that the atmosphere does not lend itself to
21 private ownership and is necessary for humanity's survival. The balance of paragraph 40 states
22 legal conclusions, to which no response is required or provided; however, to the extent there are
23 factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

24 41.

25 In response to paragraph 41, Defendants admit that the atmosphere is linked to other
26 natural resources, and that harm to the atmosphere can negatively affect water resources,

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1 submerged and submersible lands, islands, shorelands, coastal areas, wildlife, and fish, and
2 which in turn can result in harm to the public's ability to use these enumerated resources for the
3 purposes set forth in paragraph 41. The balance of paragraph 41 states legal conclusions, to
4 which no response is required or provided; however, to the extent there are factual allegations or
5 assumptions in this paragraph not expressly admitted, they are denied.

6 . 42.

7 Paragraph 42 states legal conclusions, to which no response is required or provided;
8 however, to the extent there are factual allegations or assumptions in this paragraph not expressly
9 admitted, they are denied.

10 . 43.

11 Paragraph 43 states legal conclusions, to which no response is required or provided;
12 however, to the extent there are factual allegations or assumptions in this paragraph not expressly
13 admitted, they are denied.

14 . 44.

15 Paragraph 44 states legal conclusions, to which no response is required or provided;
16 however, to the extent there are factual allegations or assumptions in this paragraph not expressly
17 admitted, they are denied.

18 . 45.

19 Paragraph 45 states legal conclusions, to which no response is required or provided;
20 however, to the extent there are factual allegations or assumptions in this paragraph not expressly
21 admitted, they are denied.

22 . 46.

23 Paragraph 46 states legal conclusions, to which no response is required or provided;
24 however, to the extent there are factual allegations or assumptions in this paragraph not expressly
25 admitted, they are denied.

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PRAYER FOR RELIEF

47.

Paragraphs 47-55 outline the relief requested in the Amended Complaint, to which Defendants respond that the Amended Complaint speaks for itself, and that no further response is required; however, to the extent there are factual allegations or assumptions in this paragraph not expressly admitted, they are denied.

FIRST AFFIRMATIVE DEFENSE

(Failure to State a Claim)

48.

Plaintiffs have failed to establish that they are entitled to the declarations prayed for in paragraphs 47- 49 of the Amended Complaint.

49.

Plaintiffs have failed to establish that they are entitled to the specific affirmative, coercive relief prayed for in paragraphs 50 – 52 of the Amended Complaint. *See Chernaik v. Kitzhaber*, 263 Or App 463, 470 n. 2 (2014) (considering the request for relief in paragraph 52, although phrased as a request for declaratory relief, to not be a request for declaratory relief, but rather, a component of the requested injunctive relief).

50.

Plaintiffs have failed to establish that they are entitled to have the Court retain continuing jurisdiction in this matter, nor have they established that the Court should retain such jurisdiction.

51.

Plaintiffs have failed to establish that they are entitled to any other relief.

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SECOND AFFIRMATIVE DEFENSE

(Matter not Justiciable)

52.

Apart from the bare declaration specifically authorized by the Oregon Court of Appeals, the Court lacks jurisdiction to consider the claims set forth in this Amended Complaint, because the harms alleged by Plaintiffs will not be redressed by an order of this Court, that is, even if they prevail, Plaintiffs cannot receive meaningful relief from Defendants, as any affirmative injunctive relief is barred by the political question doctrine and separation of powers principles. See *Chernaik v. Kitzhaber*, 263 Or App 463, 480-481(2014) (expressly declining to address whether Plaintiffs' remaining request for declaratory and injunctive relief are barred by separation of powers or political-question principles).

53.

The Court lacks jurisdiction to issue an advisory opinion, and is without jurisdiction to the extent a ruling of the Court would not afford practical, meaningful relief to these Plaintiffs from these Defendants.

THIRD AFFIRMATIVE DEFENSE

(Political Question)

54.

Apart from the specific, bare declaration specifically authorized by the Oregon Court of Appeals, the relief requested in the Amended Complaint is barred by the political question doctrine.

FOURTH AFFIRMATIVE DEFENSE

(Separation of Powers)

55.

Apart from the bare declaration specifically authorized by the Oregon Court of Appeals, the relief requested in the Amended Complaint is barred by principles of separation of powers, in

1 that it would impose an undue burden on the legislative and executive branches, and would
2 require the judicial branch to exercise executive and legislative functions.

3 DATED September 29, 2014.

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Respectfully submitted,

ELLEN F. ROSENBLUM
Attorney General

Sarah Weston #D5339 *SW*

SARAH WESTON #085083
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Of Attorneys for Defendants

1 metaphor of a trust to describe the state's sovereign interest in wildlife" and noting that "the trust
2 metaphor is an imperfect one"). Plaintiffs lump together these "public trusts" that were created
3 for different purposes, as if, collectively, they create one overarching "public trust," to be
4 expanded and applied as plaintiffs see fit. These protections are distinct, however, and not
5 interchangeable. Each so-called "public trust" arises from a different legal framework, covers
6 distinct, specifically identified resources, and provides varied protections. When combined, they
7 are no larger than the sum of their parts, despite plaintiffs' efforts to establish otherwise. *See*
8 *State Mem.* at 2-3.

9 Plaintiffs argue that the public trust doctrine applies to certain "traditional trust
10 resources," including submerged and submersible lands, waters of the state, beaches and
11 shorelands, and fish and wildlife. *Pl. Mot.* at 9-11. The State and plaintiffs agree that the public
12 trust doctrine applies to submerged and submersible lands; however, the agreement on this topic
13 ends there.

14 With regard to "waters of the state," plaintiffs reference two statutes, ORS 537.334 and
15 ORS 537.341. *Pl. Mot.* at 10. These statutes relate to in-stream water rights. While some in-
16 stream water may be covered by the common law public trust doctrine, these statutes do not
17 expand the common law public trust doctrine to include all in-stream or "state" waters. *See State*
18 *v. Epps*, 36 Or App 519, 524 (1978) (holding that statutory provisions codifying common law
19 doctrines are limited to the portions of the doctrine actually expressed in the statutory text).
20 More importantly, ORS 537.334 and ORS 537.341 do not purport to apply to the atmosphere.

21 Similarly, with regard to beaches and shorelands, the cited cases and statutes are limited
22 to the identified resources, and do not cover the atmosphere. Moreover, as plaintiffs
23 acknowledge, no Oregon case has held the public trust doctrine applies to beaches and
24 shorelands. *Pl. Mot.* at 10. This is no surprise. Unlike submerged and submersible lands,
25 beaches and shorelands were not granted to the State under the equal footing doctrine. *See PPL*

26

Page 8 - MEMORANDUM IN OPPOSITION TO PLAINTIFFS' MOTION FOR PARTIAL
SUMMARY JUDGMENT FOR DECLARATORY RELIEF
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1 State a trust obligation specifically because it is associated with a duty to act as a fiduciary for
2 the public.

3 Furthermore, Courts have always treated the Public Trust Doctrine as distinct from the
4 State's police power authority. *See, e.g., Ill. Cent. R.R.*, 146 US at 453 ("The state can no more
5 abdicate its trust over property in which the whole people are interested . . . than it can abdicate
6 its police powers in the administration of government and the preservation of the peace . . .");
7 *Geer*, 161 US at 534. In other words, the United States Supreme Court held that the police
8 power is a distinct source of regulatory power. Thus, the State embarks down the wrong path
9 from the very beginning of its memorandum of law by improperly elevating its police power at
10 the expense of the Public Trust Doctrine. State Mem. at 5-8. The police power supports the
11 State's regulatory authority; the Public Trust Doctrine provides the regulatory authority *and* the
12 inherent duty to exercise that authority. Consequently, the authority of the State to exercise its
13 police power to protect the public interest is not at issue in this case; rather, the issue is the
14 affirmative obligation of the state trustee to protect the trust *res* for present and future
15 generations of Oregonians.

16 The State is also incorrect in arguing that Courts have "repeatedly explained that
17 describing the State as owning or holding wild game in trust is just a 'legal fiction . . .
18 expressive in legal shorthand of the importance to its people that a State have power to
19 preserve and regulate . . .'" *Id.* (quoting *Dickerson*, 260 Or App at 85 n 5)). As discussed
20 earlier, *Dickerson* had nothing to do with the Public Trust Doctrine, the case has been accepted
21 for review by the Supreme Court, and the statement in *Couch*, 196 Or App at 665, is no longer
22 good law, 341 Or at 610. Indeed, the State is talking out of both sides of its mouth, because in
23 one breath it asserts that the Public Trust Doctrine extends only to submerged and submersible
24 lands, State Mem. at 11, and in the next it asks this Court to rewrite the entire doctrine based
25 on a case dealing with the interpretation of a criminal misdemeanor statute regarding wildlife,
26

1 IN THE CIRCUIT COURT FOR THE STATE OF OREGON
2 FOR THE COUNTY OF LANE

3 OLIVIA CHERNAIK, a minor and resident of
4 Lane Couty, Oregon; LISA CHERNAIK,
5 guardian of Olivia Chernaik; KELSEY
6 CASCADIA ROSE JULIANA, a minor and
7 resident of Lane County, Oregon, and CATHY
8 JULIANA, guardian of Kelsey Juliana,
9 Plaintiffs,

Case No. 161109273

Declaration of
Dr. James E. Hansen

6 v.

7 JOHN KITZHABER, in his official capacity as
8 Governor of the State of Oregon; and the
9 STATE OF OREGON,
10 Defendants.

11 **I, James E. Hansen, hereby declare:**

12 1.

13 I make this declaration in support of Plaintiffs in the above captioned case.

14 2.

15 I am a US citizen, Adjunct Professor at Columbia University's Earth Institute, and
16 Director of the Climate Science, Awareness and Solutions program at the Earth Institute.
17 I am also the immediate past Director of the NASA Goddard Institute for Space Studies
18 and a member of the United States National Academy of Sciences.
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23 Declaration of James E. Hansen

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3.

I have testified before the United States Senate and House of Representatives on many occasions, and in court on several occasions, in support of efforts to reduce reliance on carbon-intense energy consumption.

4.

My training is in physics and astronomy, with early research on the clouds of Venus. Since the late 1970s, I have focused my research on Earth's climate, especially human-made climate change. Most recently, I have dedicated significant effort towards outlining the actions that must be undertaken by communities, states, the U.S. Government, and others, in order to preserve a viable climate system for young people, future generations, and other life on Earth. For the Court's more complete reference, I have attached my full CV as Exhibit 1 to this declaration.¹

5.

I have reviewed Plaintiffs' May 4, 2011 Complaint in this matter and the combined Answer from Governor Kitzhaber and the State (hereafter, "the Governor"). Based on those documents, but quoting solely from the Answer, I understand the parties to agree that:

- Climate change is a "very serious problem that is causing, and will continue to cause, harm to our planet and the State of Oregon, if global greenhouse gas emissions are not curtailed,"

¹ See Exhibit 1.

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- Oregon natural resources “are currently threatened by the impacts” of climate change,
- Plaintiffs and their families’ “personal and economic well-being is and will continue to be threatened with injury from climate change due to increasing temperatures and excessive heat, rising sea levels, loss of water resources, diseases and pests, loss of agricultural and soil productivity, changes in precipitation patterns, extreme weather events, flooding, and other consequences of climate change,”
- “Anthropogenic greenhouse gas emissions have caused, and are causing, global climate change,”
- Climate change is causing, and is likely to continue to cause, “significant adverse effects such as disruption of natural ecosystems, displacement or disappearance of [] animal species, increases in the frequency and intensity of storms and other extreme weather events, increases in the frequency and severity of droughts in some areas, warmer and more frequent periods of intense heat, rising sea levels, decreased agricultural productivity in some areas, sea level rise and coastal erosion,”
- Unless GHG emissions are reduced, “the future is likely to bring increases of 3 to 11 degrees Fahrenheit above current levels,”
- We are headed to “more than double the current amount of carbon in the atmosphere, resulting in [] rapid warming and consequent effects,”

Declaration of James E. Hansen

1 weather patterns,” and “*some* loss of beaches and shorelines from [] rising sea levels,” but
2 he is yet unable “to form a belief as to how this might specifically affect these Plaintiffs’
3 ability to enjoy hiking and backpacking. . . .” [All emphases added.]

4 8.

5 It is, of course, technically correct that the precise impact of climate change to
6 come cannot be foretold with respect to any individual’s future specific activity. Still, the
7 predictable looming risks to young people and future generations is not well described as
8 diminished culinary or recreational opportunities, as important as these may be. The
9 balance of this declaration constitutes my attempt to more precisely describe the problem
10 and its severity, as well as the urgent need for serious action. A study that I published 13
11 months ago, in conjunction with colleagues, provides needed detail, and I hereby
12 incorporate the information, analysis and opinion that it contains into this declaration by
13 reference.²

14 9.

15 Here I have three principal points, which I state in brief, and then explain in turn.

16 10.

17 **First:** Human burning of fossil fuels has disrupted Earth’s energy balance, and in
18 response the planet is heating up – with no end in sight, unless we alter our present path.

19 Atmospheric CO₂ concentrations, for example, are now at their highest level in 3 million

20 ² See Exhibit 2, Hansen et al, *Assessing ‘Dangerous Climate Change’: Required Reduction of*
21 *Carbon Emissions to Protect Young People, Future Generations and Nature*. PLoS ONE (2013),
22 also found here: www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0081648.

23 Declaration of James E. Hansen

1 years, and global surface temperatures now have reached the prior maximum of the
2 Holocene era, the period of relatively moderate climate that, over the last 10,000 years,
3 has enabled civilization to develop.

4 11.

5 **Second:** We are observing impacts of the relatively small amount of warming that
6 has already occurred, and these constitute harbingers of far more dangerous change to
7 come. We can discuss the observable consequences, and their implications. But the key
8 point is that, if unabated, continued carbon emissions will initiate dynamic climate
9 change and effects that spin out of control of future generations as the planet's energy
10 imbalance triggers amplifying feedbacks and the climate system and biological system
11 pass critical tipping points.

12 12.

13 **Third:** There is still time and opportunity to preserve a habitable climate system -
14 - if we pursue a rational course. I will outline the glide path that we think remains
15 feasible, though much further delay in taking effective action will consign that effort to
16 failure. Objectively, then, the situation is urgent and what sovereign governments do, or
17 do not do, today to reduce carbon pollution matters immensely.

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Declaration of James E. Hansen

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR LANE COUNTY

Olivia Chernaik, a minor and resident of Lane County, Oregon; **Lisa Chernaik**, guardian of Olivia Chernaik; **Kelsey Cascadia Rose Juliana**, a minor and resident of Lane county, Oregon and **Catia Juliana**, guardian of Kelsey Juliana,

Plaintiffs,

v.

JOHN KITZHABER, in his official capacity as Governor of the State of Oregon; and the **State of Oregon**,
Defendants.

Case No. 16-11-09273

DECLARATION Of PHILIP W. MOTE

In Support of Plaintiffs' Motion for Summary Judgment

I, Philip W. Mote, declare as follows:

The facts set forth in this declaration are based upon my personal knowledge. If called as a witness, I could and would testify to these facts. As to those matters that reflect an opinion, they reflect my personal expert opinion and judgment on the matter.

1. I am the currently the Director of the Oregon Climate Change Research Institute based at the Oregon State University (OSU) in Corvallis, a professor at the College of Earth, Ocean, and Atmospheric Sciences at OSU, and Director of Oregon Climate Service, OSU. I received a bachelor's degree with honors in physics from Harvard University and a Ph.D in atmospheric sciences from the University of Washington. My professional experience includes analyzing and modeling global atmospheric conditions, climate variability, and change. I have authored or co-authored over 100 papers and reports

relating to atmosphere dynamics and climate change, including impacts of climate change on natural resources in the Pacific Northwest. I have attached hereto, as Exhibit A, a copy of my vita.

2. The facts and expert opinions set forth in this Declaration address, in part, the potential consequences of climate change on Oregon's natural resources. Much of this information derives from the Northwest Climate Assessment Report (NWCAR, 2013) that I co-edited. The NWCAR assesses the state of knowledge about key climate impacts and consequences to various sectors and communities in the Northwest United States. It draws on two recent state climate assessments in Washington in 2009 and in Oregon in 2010 (Oregon Climate Assessment Report; occri.net/reports) and a wealth of additional literature and research prior to and after these state assessments. In my professional judgment, the NWCAR remains the most up to date comprehensive analysis of the effects of climate change on Oregon landscapes, waters, and communities. I have attached hereto, as Exhibit B, a copy of that report.

3. Water is a major limiting factor in the forests of the Northwest. Water limitation in this region occurs seasonally even in the western Cascade Range because the timing of supplies of water and energy in this region is asynchronous: more than 75% of the precipitation arrives outside the growing season. Projected increases in temperature (annual, spring, and summer) and changes in precipitation (increases in cool season, decreases in summer) for the Northwest will reduce regional April 1 snowpack and July 1 soil moisture, and increase summer (June–August) water balance deficit for many of the forests in the Northwest by the 2040s. Most lower-elevation forests that currently experience chronic or seasonal water limitation will therefore experience more severe and/or longer duration water limitation under projected future climate change than under historical climate. The near-term consequences for water-limited forests can be

expected to manifest as decreases in successful seedling regeneration and tree growth, and increases in mortality, vulnerability to insects due to host tree stress, and area burned.

4. The historic decline of wild salmon in the Northwest has focused the region and country around numerous efforts to restore and protect the populations that remain—a significant challenge that is all the more so given projected future climate change. Higher water temperatures, shifts in streamflows, and altered estuary and ocean conditions associated with projected climate change will affect the region's native salmon throughout their complex life cycles:

- Higher stream temperatures will affect habitat quality for salmon in all of their freshwater life stages;
- Reduced summer streamflows will contribute to warmer temperatures and make it more difficult for migrating salmon to pass both physical and thermal obstacles.
- Higher freshwater temperatures are likely to cause various species of salmonids to become more susceptible to disease and experience increased rates of mortality and predation.
- Heavier rainfall and increased flooding in the fall and winter will scour salmon nests.
- Earlier spring runoff will alter migration timing for salmon smolts in snowmelt-dominated streams.
- Rising sea level, warmer ocean temperatures, and changes in freshwater flows will contribute to significant changes in estuarine habitats.
- Ocean acidification hinders the ability of shellfish and zooplankton to build shells and skeletons. These changes, along with rising temperatures and

other factors, and could alter the marine food web, and thus key ecological processes, threatening coastal marine ecosystems, fisheries, and aquaculture.

5. The natural environment in the Northwest provides a variety of recreational opportunities such as fishing, hunting, wildlife viewing, swimming, boating, hiking, and skiing. Water-dependent recreational activities would be affected by extreme dry conditions, reduced snowpack, lower summer flows, impaired water quality, and exhausted reservoir storage supplies. The impacts will be variable, affecting some localities more severely than others. One of the more high-profile and discernible impacts from climate change is the effect on the ski industry. Under a warming climate, mid-elevation ski resorts throughout the region are at risk to experience precipitation falling as rain rather than snow, and snowmelt occurring earlier in the season. Reductions in snowfall and associated snowpack would result in later resort opening dates and earlier closing dates, a greater reliance on, but a decreased "window" for, snowmaking, an increase in costs to skiers, and significant consequences on the economic viability of ski resorts. Nationally, the number of skiing visitor days (downhill and cross-country) would be substantially reduced under future climatic conditions; by over 50% from 1990 to 2060. Shortened ski seasons will reduce visitation impacting not only resorts, but also the communities and businesses that depend on snow recreation. Hydrologic changes will also reduce the ability of aquatic systems and habitats to support populations of native fish species including Pacific salmon, which are an irreplaceable asset with significant recreational, cultural, and economic value.

6. Recent data indicates that sea level along portions of the Northwest coast is projected to rise in the range of 4 to 56 inches for 2100 relative to 2000 levels. The thousands of miles of Northwest marine coastline are extremely diverse and contain important human-built and natural assets upon which our communities and ecosystems

depend. Due to the variety of coastal landform types (e.g., sandy beaches, rocky shorelines, bluffs of varying slopes and composition, river deltas, and estuaries), the region's marine coastal areas stand to experience a wide range of climate impacts, in both type and severity. These impacts include increases in ocean temperature and acidity, erosion, and more severe and frequent inundation from the combined effects of rising sea levels and storms, among others. Increases in coastal inundation and erosion are key concerns. A recent assessment determined that the coastal areas of Washington and Oregon contain over 56,656 hectares (140,000 acres) of land within 1.0-meter (3.3-foot) elevation of high tide. Rising sea levels coupled with the possibility of intensifying coastal storms will increase the likelihood of more severe coastal flooding and erosion in these areas.

7. Despite changes in land use and the resulting effects on fuels, climate correlates with forested areas burned and the number of large fires in both the pre-settlement period and the last few decades. The impact of climate change on Northwest forest fires has been assessed using statistical models that project area burned from climate variables. Decreased summer precipitation and increased summer temperature expected in the region are the primary mechanisms for the projected increase in area burned. Other seasonal effects also influence fuel moisture: earlier snowmelt leads to earlier onset of the fire season due to earlier water balance deficit. The area burned in Oregon forests is very likely to increase in response to expected future warming because warmer, drier conditions reduce moisture of existing fuels, facilitating fire. The range of changes in future area burned given projected climate change in these studies is from <100% to >500% increase in median area burned depending on the time frame, methods, future emissions and climate scenario, and region. For the Northwest, median regional area burned is projected to increase from about 0.2 million hectares (0.5 million acres,

1980–2006) to 0.3 million hectares (0.8 million acres) in the 2020s, 0.5 million hectares (1.1 million acres) in the 2040s, and 0.8 million hectares (2.0 million acres) in the 2080s.

8. Increased incidence of heat-related illness (HRI) can be expected in areas with increased temperature and increased occurrence of extreme heat events resulting from climate change. HRI is a composite term referring to a broad spectrum of illness ranging from heat rash to death. Heat is created through a variety of the body's internal processes and absorbed when the ambient air temperature rises above body temperature. Older adults, young children, persons with chronic medical conditions, and outdoor workers are particularly susceptible to HRI. Continual exposure to high temperature and heat extremes may cause several HRIs including heat rash, heat syncope (fainting), heat cramps, heat exhaustion, and heat stroke.

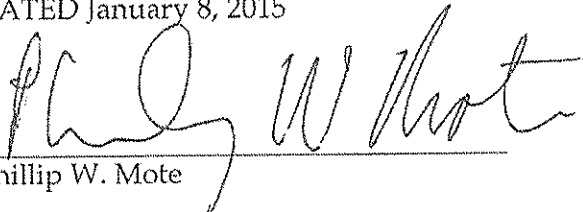
9. Climate change can also have a direct negative impact on human health through respiratory disorders such as allergies, asthma, and other diseases of the lungs. These mechanisms include the direct effects of an altered climate (e.g., temperature changes, humidity changes, more extreme weather) and effects from the agents of climate change (e.g., carbon dioxide, ground-level ozone, air pollution). Particulate matter (PM) concentrations are not only higher during wildfires, but the PM is significantly more toxic to the lungs on an equal weight basis than is PM collected from normal ambient air in the region. Elemental carbon, also known as black carbon, is well known for its harmful effect on the human respiratory system and is the primary component of fine particulate matter (PM₁₀ and PM_{2.5}). Results from a study examining the impact of the large 2003 "Cedar Fire" in San Diego County show a 34% increase in asthma hospital admissions, concluding that wildfire-related increases in PM result in increased asthma incidents. The study also found increased bronchitis and pneumonia hospital admissions associated with the fire. Similarly, a study following up the 2007 wildfires in California

showed that combined area hospital admissions for respiratory complaints increased from 48.6 to 72.6 per day and asthma diagnosis increased from 21.7 to 40.4 per day during and immediately after the wildfires. A similar increase in exacerbations of respiratory disease is likely given the projected increase in area burned in the Northwest.

10. Climate change has resulted in an alteration and extension of the time period during which plants pollinate. Increasing CO₂ concentrations, a primary driver of global climate change, and warmer temperatures are also major causes of changes in the allergenic proteins of plants. Experiments with ragweed have shown that plants grown in present era CO₂ concentrations (370 ppm) compared to pre-industrial era CO₂ concentrations (280 ppm) not only produce more pollen, but pollen with higher levels of the key allergy-causing protein. The effect was even greater when CO₂ levels were increased to projected future levels (600 ppm).

Pursuant to ORCP 1E, I hereby declare that the above statement is true to the best of my knowledge and belief, and that I understand it is made for use as evidence in court and is subject to penalty for perjury.

DATED January 8, 2015


Phillip W. Mote

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IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR LANE COUNTY

Olivia Chernaik, a minor and resident of Lane County, Oregon; **Lisa Chernaik**, guardian of Olivia Chernaik; **Kelsey Cascadia Rose Juliana**, a minor and resident of Lane county, Oregon and **Cathy Juliana**, guardian of Kelsey Juliana,

Plaintiffs,
v.

JOHN KITZHABER, in his official capacity as Governor of the State of Oregon; and the **State of Oregon**,
Defendants.

Case No. 16-11-09273

DECLARATION OF BURKE
HALES

In Support of Plaintiff's Motion for
Summary Judgment

I, Burke Hales, declare as follows:

1. The facts set forth in this declaration are based upon my personal knowledge. If called as a witness, I could and would testify to these facts. As to those matters that reflect an opinion, they reflect my personal expert opinion and judgment on the matter.

2. I am a Professor of Ocean Ecology and Biogeochemistry at the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University in Corvallis, Oregon.

3. My CV details my professional experience and is attached to this declaration as Exhibit A.

4. To summarize, I built upon my undergraduate training in Chemical Engineering to work on ocean carbonate chemistry, including measurement of pH, CO₂, and shell-mineral stability (Ω) from my graduate work at the University of Washington (PhD, 1995), through my postdoctoral work at Columbia University (1995-1998), and continuing since arriving at Oregon

1 State in 1998. I have developed fundamental new approaches to in-water measurement of
2 carbonate chemistry, from 5000m-deep sediments of the open ocean to shipboard systems for
3 sampling and analyses of the chemistry of surface and upper-200m waters from the coast of
4 Antarctica to the North Pacific. I have devised mathematical approaches for interpretation of data
5 thus collected to constrain the rates of processes affecting the carbonate chemistry (including pH,
6 CO₂, and Ω). I have developed synthetic approaches to assessing carbonate chemistry using
7 satellite observations.

8 5. I have co-authored over 60 scientific papers, over 25 of which have either myself
9 or my direct advisees as first author, and have been lead author and editor of the community
10 report "North American Continental Margins," detailing carbon cycling research in the
11 continental margins of North America (Hales et al., 2008; [http://www.us-](http://www.us-ocb.org/publications/NACM_small.pdf)
12 [ocb.org/publications/NACM_small.pdf](http://www.us-ocb.org/publications/NACM_small.pdf)), and contributing author on three chapters of the
13 community "State of the Carbon Cycle Report" (SOCCR, 2005; Field et al., 2005; Sarmiento et
14 al., 2005; Chavez et al., 2005; <http://cdiac.ornl.gov/SOCCR/pdf/sap2-2-final-all.pdf>).

15 6. My measurement instrumentation is now distributed among several west coast
16 shellfish production facilities from San Diego, California, to Seward, Alaska, and my laboratory
17 performs service analyses of carbonate chemistry of water samples for researchers and fisheries
18 stakeholders across the nation. My sample analyses have been used as the ground-truth for
19 sensor-competition trials, and my lab's analyses consistently rank with the best analytical
20 facilities in the world in certified reference intercomparison studies.

21 7. I began studying ocean carbonate chemistry in Oregon coastal waters in field
22 work in 2001-2003, and I have continued that work to the present. My work includes research on
23 what is often called "ocean acidification," a term that refers to the changes in ocean acidification
24 that result from human disruptions of the ocean's carbonic acid balance. This includes, but is not
25 limited to, the classical definition of OA as the lowering of pH as a result of increased uptake of
26 CO₂ from the rising-CO₂ atmosphere. Additional human-caused stressors that could impact the
27 carbonic acid balance include increased watershed erosion, discharge of organic waste such as
28 sewage, and eutrophication related to increased nutrient releases to coastal waters. My studies

1 have covered the link between high-CO₂ upwelled waters and the phytoplankton growth that
2 draws surface values down sufficiently to remove CO₂ from the atmosphere, the nutrient supply
3 by upwelling that determines the phytoplankton growth, the offshore carbon transport that
4 determines the development of hypoxia and intensified respiratory CO₂ production, and the
5 importance of local riverine inputs of trace elements in shaping the biological responses of the
6 coastal ocean. Since 2007, I have been studying the combined effects of natural variability and
7 human influences on the carbonate chemistry of the coastal ocean. Since 2008, I have been
8 examining the links between ocean and estuarine carbonate chemistry fluctuations and the
9 responses of shellfish populations. With colleagues at Oregon State University and the NOAA
10 Pacific Marine Environmental Laboratory, as well as partners from the shellfish aquaculture
11 industry, we have identified the driver of sensitivity as a CO₂-driven decrease in shell-mineral
12 stability (Ω), which impacts larval mussels and oysters in their earliest shell development stages
13 with effects that linger on for weeks after the exposure to harmful conditions. WA-000731
14 (Barton et al., 2012). In recent additional research, using water collected from Yaquina Bay,
15 Oregon, we have shown that larval mussels and oysters produced deformed shells and grow
16 more slowly under low- Ω conditions (Waldbusser et al., 2014). We have continued to work with
17 the shellfish industry to monitor local Ω variability as a means to time hatchery production
18 operations, and to guide mitigation efforts by hatchery managers.

19 8. The rise of anthropogenic CO₂ has pushed natural systems in the Pacific
20 Northwest into conditions where shellfish producers must proactively mitigate against the
21 frequently unfavorable ambient –water conditions. The larval shellfish show negative effects at
22 Ω values of 2 and below, even before waters become actually corrosive when Ω is < 1. The
23 natural system prior to the rise of anthropogenic CO₂ had Ω values centered around 2.4, with
24 natural variability that led to harmful conditions about 10% of the time. The human influenced
25 rise in CO₂ has driven the system to have a typical value of Ω of around 2.1 in the modern ocean
26 and that has combined with the natural system-variability to have tripled the instances of harmful
27 conditions (Harris et al., 2013). This is despite the fact that the anthropogenic addition has only
28 added a few percent to the background total CO₂ of the system. WA-000731 (Feely et al., 2008).

1 The coastal and estuarine waters of the Pacific Northwest have always been naturally poised near
2 important biological thresholds, and there has always been natural variability that has
3 periodically caused harmful conditions. The addition of a small amount of additional CO₂ has
4 combined with the natural character of the system to dramatically increase the frequency,
5 intensity, and duration of low-Ω, and coincidentally, low-pH events. All natural waters, in the
6 absence of other negative feedbacks, will have higher-CO₂, lower-pH and lower-Ω conditions as
7 a result of the elevated atmospheric CO₂, even if the addition of total CO₂ is small relative to the
8 background.

9 9. Netarts Bay has been well studied, and the increasing frequency, duration, and
10 intensity of harmful events has negatively impacted aquaculture operations there. The oyster
11 hatchery never had to buffer intake waters against ocean acidification a decade ago, and now this
12 mitigation strategy is an almost permanent part of the production routine. While the issues in
13 Netarts Bay have almost certainly been caused by a general increase in the acidity of ocean
14 source waters, they are being addressed to some degree by local management and mitigation.
15 Willapa Bay, one of the few west coast embayments with natural growth of commercially viable
16 oysters, has gone several years without a natural set of pacific oysters. This is consistent with a
17 reduction in favorable opportunities for oyster larval growth, but Willapa is a much more
18 complex system, and competing effects like freshwater input, thermal limitations, and natural
19 food availability must also be considered.

20 10. Local inputs from human activities such as runoff, erosion, pollution and sewage
21 from sources in the region can contribute to carbonate chemistry and pH changes in coastal areas
22 in Oregon and Washington. Local inputs that increase CO₂ levels in impacted waters have
23 exactly the same effect as global atmospheric CO₂ rise driving ocean CO₂ levels up. All systems
24 can be impacted by increased addition of organic matter, either directly (e.g., via sewage inputs)
25 or indirectly (e.g., via increased erosion in watersheds). This organic matter is decomposed in
26 bays and coastal waters, releasing CO₂ that behaves in the same manner as CO₂ that invades
27 from the atmosphere. The critical concept is that any process that artificially raises the carbon
28 burden in affected waters—whether by direct addition of CO₂ or by processes that enhance the

1 metabolism of organic matter (releasing CO₂)—or reduces a system’s ability to sequester such
2 carbon from local waters (an uptake known as “blue carbon”), will work in concert with rising
3 atmospheric CO₂ and the natural variability of these systems to make bad conditions more
4 frequent, persistent, and severe. For systems with carbonate-chemistry conditions that are already
5 showing impact on local organisms, this intensification can have significant consequences.

6 11. Not all human activities have negative consequences for the acidification of local
7 coastal waters. An ongoing study of the South Slough Estuarine Research Reserve, a sub-estuary
8 of Coos Bay, Oregon, has monitored pH (a proxy for Ω) in the Reserve and the local open
9 coastal ocean since estuarine restoration efforts began over a decade ago. Despite a slow
10 decrease in the pH of the adjacent ocean, likely driven by atmospheric inputs, the pH of the
11 Reserve has been gradually increasing, counter to the global trend. This mitigation of the
12 background ocean acidification signal has been attributed to restoration of the marsh grasses and
13 tidal ecosystems (eel grass beds), which led to less input of organic carbon, and subsequently
14 less CO₂, into the waters of the Reserve. This shows that in certain systems, management of local
15 inputs and proactive mitigation measures can counteract the trend toward acidification. Any
16 activity that can lessen carbon burden on coastal systems, such as suppression of wildfire and the
17 subsequent erosion from burned landscapes, or wetland restoration increasing “blue carbon,” or
18 reduction of sewage byproducts of human activities, will all reduce the sensitivity of these
19 systems to the rising background of atmospheric CO₂.

20
21 I declare under penalty of perjury that the foregoing is true and correct.

22
23 Executed on 8 Jan 2015



24
25 Burke Hales

IN THE CIRCUIT COURT OF THE STATE OF OREGON FOR LANE COUNTY

Olivia Chernaik, a minor and resident of Lane County, Oregon; Lisa Chernaik, guardian of Olivia Chernaik; Kelsey Cascadia Rose Juliana, a minor and resident of Lane county, Oregon and Catia Juliana, guardian of Kelsey Juliana,

Plaintiffs,

v.

JOHN KITZHABER, in his official capacity as Governor of the State of Oregon; and the State of Oregon, Defendants.

Case No. 16-11-09273

DECLARATION Of ERNEST G. NIEMI

In Support of Plaintiffs' Motion for Summary Judgment

I, Ernest G. Niemi, declare as follows:

The facts set forth in this declaration are based upon my personal knowledge. If called as a witness, I could and would testify to these facts. As to those matters that reflect an opinion, they reflect my personal expert opinion on the matter.

I. Introduction and Summary

1. I am an economist and principal of a consulting firm, Natural Resource Economics Inc., based in Eugene, Oregon, that provides analysis in economics, finance, planning, and policy evaluation for businesses and governments. I received a Master of City and Regional Planning from Harvard University. My professional experience includes analyzing the economic consequences of resource management decisions throughout the Pacific Northwest since 1978, and teaching courses on economic development and benefit-cost analysis at the University of Oregon. I have attached

hereto, as Exhibit A, a copy of my vita.

2. I am familiar with the regional and subregional economies of the Pacific Northwest states, the structure of those economies, the forces affecting them, and the changes occurring in them. For more than two decades I have devoted considerable time and attention to reviewing and understanding the economic effects of various proposals and options for managing the region's forests and other natural resources.

3. I prepared this declaration in response to a request from Plaintiffs, who asked me to evaluate the potential consequences to Oregon's economy resulting from the effects of climate change based on a 2009 report prepared for the University of Oregon entitled "An Overview of Potential Economic Costs to Oregon of a Business-As-Usual Approach to Climate Change" (Overview Report). I have attached a true and accurate copy of this report as Exhibit B to this Declaration. I was the lead author for this report, in collaboration with more than 20 economists. Below, I summarize findings derived from the Overview Report, which I believe remains the most up-to-date synopsis of the potential effects of climate change on Oregon's economy. Throughout this declaration, I use "we" and "us" to refer to my collaborators and me.

4. Extensive research cited in the Overview Report shows that Oregon and other western states already have experienced noticeable changes in climate and predicts that more change will occur in the future. Much of this change is having and will continue to have negative economic consequences on the state economy. Some negative effects are readily recognized: warmer stream temperatures during summer stressing salmon and trout populations, prolonged drought destroying farmers' crops, curtailment of shellfish production, and rapidly growing insect populations attacking commercial orchards and forests. A few studies have attempted to describe the net costs of taking this or that action to limit the impacts of climate change, but undermined their efforts by focusing

mostly on describing the action and not providing a full, easily understandable description of the consequences of not taking it.

5. The first step toward filling the information gap was taken a few years ago by the Climate Leadership Initiative at the University of Oregon, which produced the first climate economic report for Oregon and used information available at that time.

The Overview Report builds on that assessment and additional available data. It illustrates some of the potential costs Oregon's families, businesses, and communities might incur over the next several decades if Oregon, other states, the U.S., and other countries were to extend a business-as-usual approach to climate change. Under this approach, we assumed behaviors do not change and the emissions of carbon dioxide and other greenhouse gases would continue to grow at rates similar to those seen during recent years, leading to increases in global temperature such as those depicted in the high-emission scenarios described by the U.S. Climate Science Program, the Intergovernmental Panel on Climate Change (IPCC), and others.

6. This analysis does not capture all likely costs of climate change for Oregon. Insufficient data are available to provide estimates for the totality of potential effects scientists have identified, not to mention other effects not yet identified. In addition, Oregonians likely will experience costs that materialize beyond the state's border: as climate change leads to damage from heat waves, droughts, and storms elsewhere in the country and the world, for example, tax dollars and voluntary contributions will flow out of the state to provide assistance. Today's Oregonians also will incur some costs from manifestations of climate change that would occur beyond this century. For these reasons, I am confident that the actual potential costs of climate change in Oregon are larger than the amounts calculated herein as taken from the Overview Report.

7. The following paragraphs provide a summary of the potential costs, and the

change(s) in climate, ecosystems, or social systems that likely will generate that cost, broken down into six categories:

- Public Health
- Energy
- Fish and Wildlife
- Flood and Storm Damage
- Forest and Range Production
- Recreation

8. **Public Health:** Increased temperatures favor the production of low-altitude ozone, which negatively impacts the health of humans that live in urban areas and creates costs associated with increased rates of morbidity, premature mortality, and lost worker productivity. The calculation of increased morbidity costs does not account for costs that would occur outside a hospital (in-patient or emergency room) or for the effects of higher ozone concentrations on all sensitive groups, like children and elderly. EPA's value of statistical life represents the value that people, on average, are willing to pay to avoid premature mortality from exposure to harm, be it pollution, accidents, etc. Researchers have argued that a more appropriate measure to value a life is the willingness to accept fatal consequences of exposure to harm. This value is usually higher than the willingness to pay. This means that the total value of increased mortality from high ozone concentrations likely understate the actual value society places on deaths from climate change. The potential health-related costs from increased low-altitude ozone is summarized as follows for each of the following benchmark years:

	2020	2040	2080
a. Value of Premature Deaths			
	\$253 million,	\$542 million,	\$1.4 billion

- b. Value of Increased Morbidity
\$38 million, \$49 million, \$72 million
 - c. Value of Lost Productivity
\$397 million, \$507 million, \$745 million
- TOTAL**
\$688 million, \$1.1 billion, \$2.2 billion

Additional heat waves (days with temperatures consistently above a threshold specific to different geographic areas) are also expected to increase mortality rates and medical costs of those already suffering from cardiovascular, cerebrovascular, and respiratory diseases. They also will reduce work productivity, household productivity, and the value of leisure time. We estimated the value of the additional premature deaths using EPA's current estimate of the value of a statistical life. To calculate medical and other costs, we multiplied Oregon's expected future populations times the per capita daily costs for hospitalization, emergency-room visits, and follow-up medical costs during the 2006 heat wave in California. We estimated the additional, climate-related costs by applying the results of a study that projected Oregon would experience an additional 14 heat-wave days by 2030 and making adjustments to estimate the number of potential additional deaths in 2020, 2040, and 2080. Heat-wave statistics show they cause more deaths than all other natural disasters in the US. Death certificates systematically fail to represent high temperatures as the death cause during heat waves, however, and a full accounting would increase the mortality numbers, perhaps by more than 50 percent. The potential value of health-related and other costs of heat waves are summarized as follows for each of the following benchmark years:

	2020	2040	2080	
a. Value of Premature Deaths	\$66 million	\$153 million	\$359 million	

b. Value of Increased-Medical Care Costs

\$9 million, \$18 million, \$51 million

c. Value of Other Costs

\$1 million, \$2 million, \$5 million

TOTAL

\$76 million, \$173 million, \$415 million

9. **Energy:** The primary energy costs and financial losses derive from reduced hydropower generation. Climate models indicate that changes in the Pacific Northwest's climate likely will cause runoff to increase in winter and decrease in summer, reducing value of hydropower produced by the region's hydroelectric facilities. This reduction in value would ensue due to a mismatch between energy demand, which will increase in summer, and hydropower supplies, which would be lower at the same time. We estimated Oregon's share of the potential reduction in productive capacity for the Northwest to be 175 MW by 2020, 550 MW by 2040, and 1,300 MW by 2080, assuming that its current share of production will persist. We estimated the consequential value of reduction in hydropower generation to be \$74 million in 2020, \$233 million in 2040, and \$552 million in 2080.

Higher temperatures during summer months will also likely induce residential consumers to spend more money on air conditioning. We estimated the potential value of increased energy costs for air conditioning of \$16 million in 2020, \$37 million in 2040, and \$92 million in 2080.

In addition, higher temperatures during climate-related heat waves will increase the amount of energy lost during electricity-transmission lines. During heat waves, the resistance of overloaded transmission lines increases, causing the grid to convert more electricity into heat, which wastes energy. We applied a middle-of-the-road estimate of

the potential growth in heat-wave days from 1990 to 2030; linearly interpolate and extrapolate to estimate the number of additional days in 2020, 2040, and 2080; and adjust the numbers to estimate what the impact would be under a business-as-usual approach to climate change. If the additional transmission-line losses during a heat-wave day equal one-third of the electricity being transmitted, the annual losses from energy lost in transmission during heat waves and the consequential value of reduction in hydropower generation would be \$29 million in 2020, \$58 million in 2040, and \$171 million in 2080.

10. **Fish and Wildlife:** Warmer stream temperatures resulting from increased global temperatures reduce the amount of habitat that can viably support salmon, reducing salmon populations. An assessment of stream temperatures indicates increased warming may reduce salmon habitat in Oregon by 13, 23, and 44 percent by 2030, 2060, and 2090, respectively. Adjusting these numbers to be consistent with the 2020, 2040, and 2080 benchmark years, the potential value of reduced salmon populations in 2020, 2040, and 2080 is \$632 million, \$1.04 billion, \$1.87 billion, respectively.

Increased temperatures and changes in precipitation are likely to impact many species other than salmon in Oregon. Scientists have found evidence that climate change can result in changes in species' range, abundance, phenology (timing of an event, such as migration), morphology and physiology, and community composition, biotic interactions and behavior. Data were not available, however, to allow us to estimate the costs associated with these and other potential fish and wildlife-related impacts.

11. **Flood and Storm Damage:** Rising global temperature leads to increased sea levels, which will inundate value property and structures. No direct estimates of the value of coastal property damage due to sea-level rise exist for Oregon, so we applied estimates for California after adjusting for differences in general coastline length, median home value, and coastal population density. Based on this analysis, potential value of

property damage from sea level rise in 2020, 2040, and 2080 is \$16 million, \$33 million, and \$73 million, respectively.

Climate change is also expected to increase storm severity and the frequency of extreme storm events, including high winds, flooding, lightning and fire. Storm events will have direct property-damage effects, as well as increased storm related injuries and fatalities. Potential value of property and crop damage from extreme weather events in 2020, 2040, and 2080 is \$48 million, \$99 million, and \$236 million, respectively.

12. **Forest and Range Production:** Wildland fires become more frequent and severe as climate change increases temperatures and aridity, and accelerates tree mortality from insects and disease. When forests burn, they lose their ability to produce many goods and services, but data are available only to estimate the loss assuming the forest would be managed to produce timber. Projections for climate-related changes in temperature and precipitation suggest that, relative to the 20th century, wildfires in Oregon will burn 50 percent more acreage per year by 2020 and double the acreage by 2040. On average, 137,000 acres of state and federal land burned annually from 1988 to 1999. We assumed that, if private lands burned at the same rate, the average would have been 217,000 acres. State and federal land make up 63 percent of all forestland in Oregon. A 50 percent increase in acreage burned by 2020 would be an increase of 109,000 acres, and a 100 percent increase by 2040 would be an increase of 217,000 acres. We assumed the annual value of lost goods and services when a forest burns is at least \$1,000 per acre, a general estimate for the value of lost timber. Based on these assumptions, the potential value of lost forest assets from increased forest fires in 2020, 2040, and 2080 is \$109 million, \$223 million, and \$497 million, respectively.

Furthermore, Oregonians will incur additional fire-control costs as wildfires become more frequent and severe as climate change increases temperatures and aridity

and accelerates tree mortality from insects and disease. The potential value of increased control expenditures for wildland fires in 2020, 2040, and 2080 is \$97 million, \$200 million, and \$444 million, respectively.

13. **Recreation:** Higher temperatures reduce snowfall and accumulation, shortening the ski season, degrading skiing conditions, and reducing revenues for the ski industry. We assumed that the snow-recreation season will shrink 14 percent by 2020 and 30 percent by 2040, based on a forecast of temperature increases associated with business-as-usual emissions. We assumed the number of user days, expenditures, and consumer surplus shrinks proportionately. We linearly extrapolated to estimate the reductions for 2080. Industry officials suggest that once the snow-recreation season is shortened to the extent indicated for 2080, snow-related recreation businesses, and the downhill skiing businesses in particular, likely would not be viable and would close. Accordingly, the total potential value of reduced snow-related recreation 2020, 2040, and 2080 will be \$46.4 million, \$124 million, and \$338.2 million, respectively.

In addition, higher stream temperatures reduce the amount of habitat that can viably support salmon, reducing the contribution of cold-water angling to the economy. We assumed the value of cold-water angling will decline proportionate to expected losses of aquatic habitat for salmon and trout. Consequently, the potential value of reduced cold-water angling for 2020, 2040, and 2080 is \$121 million, \$266 million, and \$732 million, respectively.


More numerous and larger wildland fires will also likely reduce recreation opportunities during summer months. Forest closures during wildland fire events and exceptionally dry, high-risk fire seasons limit access to the area, and thus opportunities, available for activities, such as hiking, mountain biking, wildlife watching, and scenic driving. Post-fire landscapes may provide more limited or lower-quality recreation

experiences. Low-water levels in streams, especially in late summer, may also reduce some water-related recreation opportunities, such as river rafting and kayaking. Though insufficient data are available to quantify these impacts, research elsewhere suggests that they have the potential to reduce the value (expenditures and consumer surplus) of forest-based and water-related recreation in Oregon.

14. As set forth in the Overview Report, the total potential economic costs to Oregon resulting from climate change in 2020 will be approximately \$3.3 billion, or \$1,930 per household. In 2040, it will increase to \$3.6 billion, or \$1,930 per household. In 2080 it will rise to \$9.8 billion, or \$3,500 per household. Far greater costs might materialize elsewhere or in future centuries, the result of a business-as-usual approach to climate change over the next few decades. If temperatures rise to the maximum levels predicted under the business-as-usual scenario, billions of people in less-developed countries likely would endure increased thirst and starvation, thousands of species would face extinction, sea levels would rise several meters and vast areas of the oceans could become barren. To the extent that these distant effects matter to today's Oregonians, the potential costs would be far greater than indicated herein.

Pursuant to ORCP 1E, I hereby declare that the above statement is true to the best of my knowledge and belief, and that I understand it is made for use as evidence in court and is subject to penalty for perjury.

DATED January 6, 2015



Ernest G. Niemi

1 political subdivisions shall conserve and protect Hawaii's natural beauty and all natural
2 resources, including land, water, air, minerals, and energy source All public natural
3 resources are held in trust by the State for the benefit of the people."); Pa Const, Art I, § 27
4 (declaring public trust duty to conserve natural resources, and expressing citizen's right to
5 clean air).

6 For all of these reasons, Plaintiffs request that the Court declare that the atmosphere is
7 among the public trust resources under the care of the sovereign government in the State of
8 Oregon.

9 **VI. The State of Oregon Has Failed to Uphold its Duty to Protect Public Trust**
10 **Assets, Including the Atmosphere, From Substantial Impairment as a**
11 **Result of Climate Change.**

12 Based on the pleadings and the expert declarations presented by the Plaintiffs, they are
13 entitled to declarations that the atmosphere is substantially impaired so long as concentrations
14 of carbon dioxide are more than 350 ppm and that the State of Oregon is failing in its fiduciary
15 obligation to protect the atmosphere and other public trust resources from impairment. As
16 discussed below, the parties are in agreement that anthropogenic emissions of carbon dioxide
17 are causing global climate change, that global climate change is already causing and will
18 continue to cause extreme degradation of natural resources in Oregon and harm to these
19 Plaintiff beneficiaries, and that Oregon is falling far behind its own targets for reductions in
20 greenhouse gas emissions. Plaintiffs are therefore entitled to summary judgment as a matter of
21 law.

22 **A. The State of Oregon Admits The Great Majority of Plaintiffs'**
23 **Factual Allegations as to the Causes of Climate Change and the**
24 **Predicted Impacts to Public Trust Resources in Oregon.**

25 Partial summary judgment is appropriate in this case because the State admits all of the
26 material facts that are set forth in the amended complaint necessary for a declaration that the
State has failed to uphold its fiduciary duty under the Public Trust Doctrine. The State

1 concedes that climate change is caused by anthropogenic emissions of carbon dioxide and
2 greenhouse gases and that the impacts of climate change will have severe adverse
3 consequences for public trust assets and for all Oregonians. And the State also concedes that it
4 is failing to achieve the reductions in greenhouse gas emissions that are necessary to avoid the
5 catastrophic effects of climate change.

6 More specifically, the State has admitted to the following factual allegations, which are
7 quoted from the amended complaint.

8 1. (Amended Complaint)

9 Plaintiffs are children and their families who live in Oregon, and their
10 personal and economic well-being is directly dependent upon the health of the
11 State's natural resources held in trust for the benefit of its citizens, including
12 water resources, submerged and submersible lands, coastal lands, forests, and
13 wildlife. All of these resources or assets, and therefore the future of the children,
14 are currently threatened by the impacts of climate change.

15 1. (Answer)

16 In response to paragraph 1, Defendants admit that Plaintiffs are children
17 and their families who live in Oregon, and that their personal and economic
18 well-being is dependent upon the health of natural resources in this State
19 including water resources, submerged and submersible lands, coastal lands,
20 forests, and wildlife. . . . Defendants further admit that these natural resources
21 are currently threatened by the impacts of global climate change.

22 2. (Amended Complaint – Admitted in Full)

23 Plaintiffs are Oregon youth and their families whose personal and
24 economic well-being is and will continue to be threatened with injury from
25 climate change due to increasing temperatures and excessive heat, rising sea
26 levels, loss of water resources, diseases and pests, loss of agricultural and soil

1 productivity, changes in precipitation patterns, extreme weather events, and
2 other consequences of climate change.

3 20. (Amended Complaint)

4 For more than 200 years, the burning of fossil fuels, such as coal and oil,
5 together with massive deforestation caused a substantial increase in the
6 atmospheric concentrations of heat-trapping greenhouse gases. These gases
7 prevent heat from escaping to space, like the glass panels of a greenhouse. The
8 extent of these gases in the atmosphere have changed and fluctuated over
9 geologic time but have reached an equilibrium – Earth’s safe climate-zone –
10 which is necessary for life as we know it. However, as the concentrations of
11 these gases continue to increase in the atmosphere, the Earth’s temperature is
12 climbing above Earth’s safe climate-zone.

13 20. (Answer)

14 The terms “safe climate-zone” and “life as we know it” in paragraph 20
15 are undefined and Defendants are thus unable to respond to those allegations;
16 however, to the extent a response is required they are denied. Defendants admit
17 that anthropogenic greenhouse gas emissions have caused, and are causing,
18 global climate change. Defendants further admit that the extent of greenhouse
19 gases in the atmosphere has changed and fluctuated over geologic time, but has
20 been at a point of equilibrium sufficient to sustain life for at least thousands of
21 years. Defendants further admit that global climate change is causing, and is
22 likely to continue to cause, significant adverse effects such as disruption of
23 natural ecosystems, displacement or disappearance of some animal species,
24 increases in the frequency and intensity of storm events and other extreme
25 weather events, increases in the frequency and severity of droughts in some
26 areas, warmer and more frequent periods of intense heat, rising sea levels,

1 decreased agricultural productivity in some areas, sea level rise and coastal
2 erosion. Except as specifically admitted, Defendants are without knowledge or
3 information sufficient to form a belief as to the balance of paragraph 20.

4 21. (Amended Complaint - Admitted in full)

5 According to data from the National Oceanic and Atmospheric
6 Administration ("NOAA") and the National Aeronautics and Space
7 Administration ("NASA"), the Earth's average surface temperature has
8 increased by about 0.8°C (1.4°F) in the last 100-150 years. The eight warmest
9 years on record (since 1850) have all occurred since 1998. Coupled with the
10 increase in the temperature of the earth, other aspects of the climate are also
11 changing, such as rainfall patterns, snow and ice cover, and sea levels.

12 22. (Amended Complaint - Admitted in full)

13 Human-caused fossil fuel burning and the resulting climate change are
14 already contributing to numerous adverse impacts to public health, including
15 increased rates of asthma, cancer, cardiovascular disease and stroke, heat-
16 related morbidity and mortality, food borne diseases, and neurological diseases
17 and disorders.

18 23. (Amended Complaint - Admitted in full)

19 Climate changes are currently occurring faster than even the most
20 pessimistic scenarios presented in the 2007 Intergovernmental Panel on Climate
21 Change. A variety of studies conclude that a further increase of average annual
22 temperatures of 2° C (3.6° F) above current levels would cause severe,
23 widespread and irreversible impacts. Depending on the future rate of
24 greenhouse gas emissions, the future is likely to bring increases of 3 to 11
25 degrees Fahrenheit above current levels.

26 24. (Amended Complaint - Admitted in full)

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26. (Amended Complaint)

There is still time to curb and reduce carbon dioxide emissions to avoid irrevocable changes to the atmosphere. To limit average surface heating to no more than 1° C (1.8° F) above pre-industrial temperatures, and to protect Oregon's public trust assets, the best available science concludes that concentrations of atmospheric carbon dioxide cannot exceed 350 parts per million or "ppm." As of 2011, atmospheric carbon dioxide concentrations are at least 390 ppm and are projected to exceed 400 ppm by 2020. Current atmospheric greenhouse gas concentrations are the highest in at least 650,000 years.

26. (Answer)

In response to paragraph 26, Defendants admit the first, third and fourth sentences. They further respond that the nature, existence and extent of the State's public trust assets, and what is needed to protect them, states a legal conclusion to which no response is required or provided, and that they are without knowledge or information sufficient to form a believe as to the balance of the second sentence.

29. (Amended Complaint)

The impacts in Oregon of human caused climate change are predicted to be severe if carbon dioxide emissions are not curtailed in the near term. The OCCRI, in its most recent Climate Assessment Report, predicted that increases in average annual temperatures of .2-1° F per decade would likely cause a wide range of adverse impacts that threaten Oregon's economy and environment, including, *inter alia*:

1 a. A reduction of Cascade snow packs by 50 percent by mid-century along
2 with reduced summer precipitation will result in significant decreases in
3 summer stream flows and water supply;

4 b. Impacts to Oregon's \$1.6 billion per year agricultural industry, including
5 drought, disease and limitations on the availability, quality and costs of
6 irrigation water as well as the displacement of current agricultural zones
7 resulting, for instance, in the Willamette Valley no longer being viable for
8 growing pinot noir wine grapes;

9 c. Increasing sea levels of at least 2-4 feet and greater storm intensity will
10 result in greater coastal erosion, flooding, loss of beach areas and elevation,
11 loss of coastal wetlands, and inundation and damage of coastal
12 infrastructure.

13 d. Changes to the marine environment including ocean temperature,
14 salinity, dissolved oxygen levels and acidity, which can inhibit the
15 formation of calcium carbonate shell and skeletons for a wide range of
16 marine organisms like oysters and plankton;

17 e. Increased wildlife in both western and eastern Oregon, and an increase
18 in pests and diseases affecting Oregon forest species.

19 29. (Answer)

20 Paragraph 29 references and purports to summarize conclusions
21 expressed in the 2011 Oregon Climate Assessment Report, which was the most
22 recent Climate Assessment Report published by the OCCRI at the time the
23 amended complaint was filed. Defendants deny that this is the most recent
24 report published by the OCCRI. In response to the balance of paragraph 29,
25 which purports to summarize portions of the 2011 report, Defendants respond
26 that the report speaks for itself and is best evidence of its contents. Defendants

1 admit that the impacts in Oregon of human-caused global climate change have
2 been predicted to be severe if global carbon dioxide emissions are not curtailed.

3 30. (Amended Complaint)

4 Climate change also poses risks to the health of all Oregonians.
5 According to the OCCRI, "extreme weather (such as floods, droughts, severe
6 storms, heat waves and fires) can directly affect human health as well as cause
7 serious environmental and economic impacts." Among these impacts are the
8 disruption of natural systems, which gives "rise to the spread or emergence of
9 vector-, water-, and food-borne diseases in areas where they either have not
10 existed, or where their presence may have been limited." Other impacts include
11 "increase[d] cases of allergies, asthma and other respiratory conditions among
12 susceptible populations" due to "[a]ir pollution and increases in pollen count"
13 and the exacerbation of "lung health problems" due to "exposure to smoke from
14 wild land and forest fires, as well as from the projected increases in air pollution
15 levels in our region."

16 30. (Answer)

17 In response to paragraph 30, which appears to quote or to summarize
18 portions of the 2011 OCCRI Oregon Climate Assessment Report, Defendants
19 respond that the report speaks for itself and is best evidence of its contents.
20 Defendants admit that global climate change poses risks to the health of all
21 Oregonians.

22 In conclusion, the parties agree that climate change is caused by anthropogenic
23 emissions of carbon dioxide, that climate change is harming and threatens continued harm to
24 essential natural resources in Oregon, and that the State is falling far short of its own targets in
25 reducing greenhouse gas emissions. Based on the pleadings, the Court can and should declare
26 that the State has failed to uphold its fiduciary obligations under the Public Trust Doctrine.

1 There is no material factual dispute between the parties as to the causes or effect of climate
2 change, nor is there a dispute that the State is failing to achieve the reductions in greenhouse
3 gases necessary to address the problem.

4 **B. In Addition to the Pleadings, Plaintiffs Present Declarations from the**
5 **Foremost Experts on the Causes of Global Climate Change and the**
6 **Predicted Impacts to the Public Trust Resources of Oregon and the State**
7 **Economy.**

8 The State's admissions to the allegations in the amended complaint demonstrate that
9 Plaintiffs are entitled to summary judgment in this declaratory judgment action. In addition,
10 however, Plaintiffs present to the Court expert opinions on the predicted impacts to the natural
11 resources and economy of the State, if Oregon, alongside other state and global sovereigns,
12 does not take action to arrest the emissions of carbon dioxide to mitigate the impacts of climate
13 change. Plaintiffs summarize those expert opinions below.

14 **1. Dr. James Hansen.**

15 Dr. Hansen is the former Director of the NASA Goddard Institute for Space Studies in
16 New York City and an Adjunct Professor of Earth Sciences at Columbia University's Earth
17 Institute. Hansen Decl. ¶ 2. He obtained his Ph.D in physics in 1967 from the University of
18 Iowa and since the 1970's has focused on computer simulations and studies of the Earth's
19 climate to understand the impact of humans on Earth's climate. *Id.* ¶ 4. Dr. Hansen's opinions
20 are summarized below:

- 21 • Human burning of fossil fuels has disrupted the Earth's energy balance and caused
22 the Earth to heat up. The atmosphere is currently impaired because the
23 concentration of CO₂ is causing the Earth to absorb more heat than is reflected to
24 space. Atmospheric CO₂ concentrations are at their highest level in three million
25 years, and global surface temperatures are higher than they have been in the last
26 10,000 years during the development of human civilization, *id.* ¶ 10;

- 1 • This warming process will worsen and accelerate unless we change course. Unless
2 abated, carbon emissions will initiate dramatic and rapid climate changes that will
3 spin out of control for present and future generations as the planet's energy
4 imbalance triggers amplifying feedbacks, which push the planet past critical tipping
5 points, *id.* ¶ 11; and
- 6 • There is a brief window of opportunity to reverse course in order to preserve a
7 habitable climate system, but the window is closing quickly. Dr. Hansen and a
8 world-renowned team of scientists have developed a prescription or "glide path"
9 that returns atmospheric concentrations to 350 ppm by the end of the century, the
10 level necessary to sustain life on Earth as we currently know it. *Id.* ¶ 12, 59.

11 2. Dr. Phillip Mote

12 Dr. Mote is the Director of the Oregon Climate Change Research Institute in the
13 College of Earth, Ocean & Atmospheric Sciences at Oregon State University. Mote Decl. ¶ 1.
14 Dr. Mote received his Ph.D in atmospheric sciences from the University of Washington in
15 1994, and a B.A. with honors in physics from Harvard University in 1987. *Id.* Before
16 assuming his current position as Director of OCCRI, Dr. Mote was the State Climatologist for
17 the State of Washington from 2003 until 2009. He is the current co-leader of the NOAA-
18 funded Climate Impacts Research Consortium ("CIRC") for the Northwest, and also of the
19 Northwest Climate Science Center for the U.S. Department of the Interior.

20 Dr. Mote summarizes for the Court the findings and conclusions of OCCRI's 2013
21 report *Climate Change in the Northwest – Implications for Our Landscapes, Waters, and*
22 *Communities*, which is attached to his declaration. Observed and predicted impacts from
23 climate change in Oregon are summarized as follows:

- 24 • Alterations in streamflow magnitude and timing, water temperatures, and water
25 quality, particularly in snow-dominant watersheds and those fed by glacial runoff,
26

1 which will experience reduced spring peak flow, increased winter flow, and
2 reduced late-summer flow, *id.* ¶ 4–5;

- 3 • Changes in hydrologic flow regimes and warming stream and lake temperatures
4 pose significant threats to aquatic ecosystems and are expected to alter key habitat
5 conditions for salmon and other aquatic species, *id.* ¶ 4;
- 6 • Water-dependent recreational activities will be affected by dry conditions, reduced
7 snowpack, lower summer flows, impaired water quality, and reduced reservoir
8 storage, *id.* ¶ 5;
- 9 • Sea level along the coast is projected to rise 4-56” by 2100 relative to 2000 levels,
10 resulting in erosion, sea water intrusion, and flooding, *id.* ¶ 6;
- 11 • Increasing acidification of ocean waters hinders the ability of shellfish to build
12 shells and skeletons and could alter key ecological processes, threatening coastal
13 marine ecosystems, fisheries, and aquaculture, *id.* ¶ 4;
- 14 • Northwest forest ecosystems will experience increased fire activity in response to
15 warmer and drier summers, *id.* ¶ 7, and the abundance and distribution of many
16 species of fish and wildlife may also be affected, *id.* ¶ 4–5;
- 17 • Average temperatures and heat events are projected to increase in the Northwest
18 with an expected increase in the incidence of heat-related illness and death, *id.* ¶ 8;
19 and
- 20 • Climate change can have a negative impact on respiratory disorders due to longer
21 and more potent pollen seasons, increases in ground-level ozone, and increases in
22 particulate matter due to wildfires. *Id.* ¶ 9.

23 3. Dr. Burke Hales

24 Dr. Burke Hales is a Professor of Ocean Ecology and Biogeochemistry at the College
25 of Earth, Ocean, and Atmospheric Sciences at Oregon State University. Hales Decl. ¶ 2.
26 Dr. Hales obtained his Ph.D in Chemical Oceanography from the University of Washington

1 School of Oceanography in 1995. *Id.* Ex A. He has co-authored over 60 scientific papers and
2 was lead author of “North American Continental Margins,” detailing carbon cycling research
3 in the continental margins (which includes the continental shelf, continental slope, and
4 continental rise) of North America. *Id.* ¶ 5. Since 2007, he has been studying the “combined
5 effects of natural variability and human influences on the carbonate chemistry of the coastal
6 ocean,” and since 2008 has studied “the links between ocean and estuarine chemistry
7 fluctuations and the responses of shellfish populations.” *Id.* ¶ 7. Dr. Hales’ opinions are
8 summarized below:

- 9 • Anthropogenic emissions of carbon dioxide have resulted in ocean acidification, *id.*
10 ¶ 8;
- 11 • The increased corrosivity in ocean waters in Oregon and the Pacific Northwest are
12 threatening the ability of larval shellfish like mussels and oysters to build shells and
13 skeletons necessary for natural reproduction, *id.* ¶ 7; and
- 14 • The change in corrosivity has already pushed shellfish producers to implement
15 costly mitigation measures to respond to poor marine water conditions. *Id.* ¶ 8.

16 4. Mr. Ernie Niemi

17 Mr. Niemi is a trained economist and founder of Natural Resources Economics, Inc.
18 based in Eugene, Oregon. Niemi Decl. ¶ 1. From 1978 until 2012, he managed economic and
19 policy analysis for the consulting firm, ECONorthwest, where he was a co-owner, vice
20 president, and senior economist. *Id.* Ex A. He obtained a B.S. in chemistry from the
21 University of Oregon in 1970 and a Master of City and Regional Planning from Harvard
22 University in 1978. *Id.* Mr. Niemi specializes in applying the principles of cost-benefit
23 analysis, economic valuation, and economic-impact analysis to describe the economic
24 importance of natural resources.

25 In 2009, Mr. Niemi prepared a report entitled *An Overview of Potential Economic*
26 *Costs to Oregon of a Business-As-Usual Approach to Climate Change* on behalf of the

1 Program on Climate Economics, Climate Leadership Initiative, Institute for a Sustainable
2 Environment at the University of Oregon. In his declaration, Mr. Niemi summarizes the
3 findings of his report, which represents the most thorough estimates of the economic costs of
4 climate change in the State of Oregon. Those findings include:

- 5 • By 2020, the potential economic costs in Oregon total \$3.3 billion per year;
- 6 • By 2040, the potential economic costs in Oregon total \$3.6 billion per year;
- 7 • By 2080, the potential economic costs in Oregon total \$9.8 billion per year;

8 Niemi Dec ¶ 14.⁷

- 9 • These costs result from the predicted adverse impacts to natural resources,
10 including:
 - 11 • Increased health-related costs from human mortality and illness associated with
12 decreased air quality;
 - 13 • Reduced salmon populations;
 - 14 • Increased flood and storm damage;
 - 15 • Reduced food production;
 - 16 • Increased wildfire costs; and
 - 17 • Lost recreation opportunities.

18 Niemi Dec ¶¶ 7–13.

19 **C. The State of Oregon's Own Data Documents Unequivocally that the State**
20 **is Failing to Achieve the Reductions in Emissions of Greenhouse Gases**
21 **That Are Necessary to Uphold its Fiduciary Obligations Under the Public**
22 **Trust Doctrine.**

23 In 2007, following a report from the Governor's Advisory Group on Global Warming,
24 the Oregon legislature passed House Bill 3543, which set non-binding targets for reductions in
25 the emissions in greenhouse gases in the State of Oregon. *See* HB 3543 (2007), Or Laws 2007,

26 ⁷ These economic impacts do not include the lost value of all public trust resources, ecosystem
functions, and human life, and the true costs to Oregon could be much more severe.

1 ch 907, §§ 1–14 (codified, in part, at ORS 468A.200 to .260). The legislature recognized the
2 “need to assess the current level of greenhouse gas emissions in Oregon, to monitor the trend
3 of greenhouse gas emissions in Oregon over the next several decades and to take necessary
4 action to begin reducing greenhouse gas emissions in order to prevent disruption of Oregon’s
5 economy and quality of life and to meet Oregon’s responsibility to reduce the impacts and pace
6 of global warming.” HB 3543 § 1(7). The legislature set non-binding goals for greenhouse
7 gas reductions. *Id.* § 2(1). The legislature then created the Oregon Global Warming
8 Commission, *id.* § 4(1), and charged the Commission with tracking and evaluating “[p]rogress
9 toward the greenhouse gas emissions reduction goals established” by the legislation. *Id.*
10 § 12(1)(e).

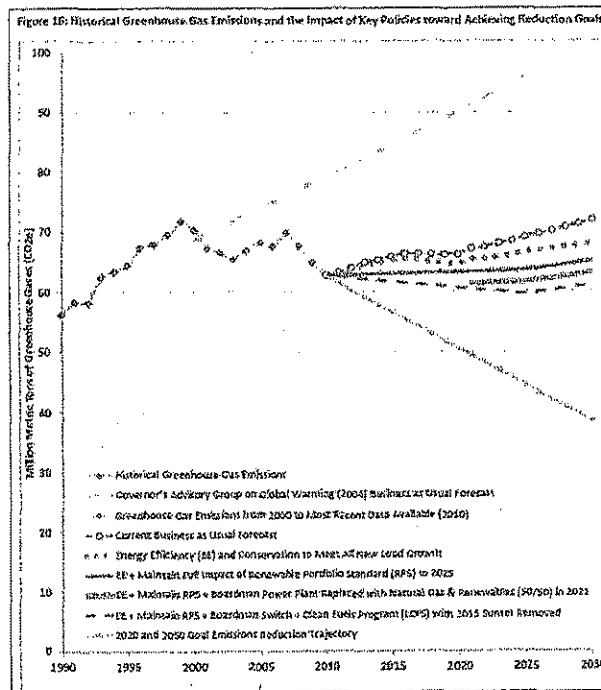
11 Since that time, the Global Warming Commission has collected and reported data on
12 greenhouse gas emissions in Oregon.⁸ That data and the accompanying reports provide
13 indisputable evidence that Oregon is failing to take the actions necessary to protect public trust
14 assets and to reduce emissions of carbon dioxide in Oregon.

15 The Global Warming Commission published a report in 2009, which tracked the State’s
16 progress towards its greenhouse gas reduction goals. At that time, the Commission found that
17 “the state will likely fall well short of meeting its 2020 emission reduction goal, and by
18 extrapolation, clearly is not on track to meet its 2050 goal.” Oregon Global Warming
19 Commission, *Report to the Legislature* 18 (Jan 2009) (Sherlock Decl., Exhibit 1). In 2011, the
20 Commission released another report confirming that the State is falling far behind its efforts to
21 meet the 2020 and 2050 goals. Oregon Global Warming Commission, *Report to the*
22 *Legislature 2011 – Including Key Action and Results from the Commission’s Interim Roadmap*
23 *to 2020* at 77–78 (Feb 2011) (Sherlock Decl., Exhibit 2). In 2013, the Global Warming
24

25 ⁸ The Commission is chaired by Mr. Agnes Duncan, President and CEO of the Bonneville
26 Environmental Foundation. The reports and information prepared by the Oregon Global
Warming Commission can be found on its web site at <http://www.keeporegoncool.org/>.

1 Commission issued another report again demonstrating that Oregon is falling far behind its
 2 own outdated targets. Oregon Global Warming Commission, *Report to the Legislature 2013* at
 3 95, 97 (Feb 2013) (Sherlock Decl., Exhibit 3).

4 A simple graphic from the 2013 report demonstrates the State's own admitted
 5 shortcoming in reducing emissions of greenhouse gasses. The graphic depicts Oregon's own
 6 projections as to how emissions in the State will greatly exceed the non-binding targets set by
 7 the legislature.⁹



21 ⁹ The goals are to:

- 22 (a) By 2010, arrest the growth of greenhouse gas emissions and begin to reduce
 greenhouse gas emissions.
- 23 (b) By 2020, achieve greenhouse gas levels that are 10 percent below 1990 levels.
- 24 (c) By 2050, achieve greenhouse gas levels that are at least 75 percent below 1990
 levels.

25 ORS 468A.205(1). These non-binding targets are outdated and not tied to or supported by
 26 the best available science, which is presented in section VII below.

1 *Report to the Legislature 2013*, at 95 Figure 16.

2 In short, these facts are not in dispute. Plaintiffs rely on the State of Oregon's own
3 data, and moreover "Defendants admit that Oregon is likely to fall well short of the targets set
4 by its greenhouse gas reduction and mitigation plan." Answer ¶ 36. The State's own data and
5 its admission in its Answer demonstrate unequivocally that the sovereign government is failing
6 to uphold its obligations to protect public trust resources from the adverse impacts of climate
7 change. While some (but certainly not all) of those impacts will accrue in the future, the only
8 time to avoid those impacts is running out, and steps must be taken now to reduce emissions of
9 carbon dioxide in order to avoid the most devastating effects of climate change. The only
10 opportunity available to these trustees, on behalf of all current and future generations of
11 Oregonians, will soon be lost.

12 **VII. To Uphold its Obligation Under the Public Trust Doctrine to Manage and**
13 **Preserve Essential Natural Resources in Trust for the Benefit of the Citizenry, the**
14 **State of Oregon Must Take Action as Soon as Possible to Achieve the Reductions**
15 **Necessary to Meet its Obligation to Return Atmospheric Concentrations of CO₂ to**
16 **350 ppm by the Year 2100.**

17 While the situation is dire, there is still time to reverse course and to implement the
18 changes necessary to restore atmospheric concentrations of CO₂ to the level necessary to
19 sustain life on Earth as we know it. Dr. Hansen, in collaboration with a team of the most well-
20 respected scientists working in this field, have developed a prescription of CO₂ reductions
21 necessary to return atmospheric concentrations of CO₂ to 350 ppm by the end of the century.
22 *See Hansen Decl. ¶¶ 62–63, Ex 2 at 10.* The scientific prescription of 350 ppm is premised
23 upon the work of Dr. Hansen and others as the level at which Earth's energy imbalance will be
24 corrected, *i.e.*, the amount of heat radiated to space by Earth increases and the amount of heat
25 absorption decreases to a state of equilibrium. *See Hansen Decl. ¶¶ 22–24, 58–59, Ex 2 at 5.*
26 Carbon dioxide persists in the atmosphere for many years. *See Hansen Decl. ¶¶ 44–46.* To

1 There is no material factual dispute between the parties as to the causes or effect of climate
2 change, nor is there a dispute that the State is failing to achieve the reductions in greenhouse
3 gases necessary to address the problem.

4 **B. In Addition to the Pleadings, Plaintiffs Present Declarations from the**
5 **Foremost Experts on the Causes of Global Climate Change and the**
6 **Predicted Impacts to the Public Trust Resources of Oregon and the State**
7 **Economy.**

8 The State's admissions to the allegations in the amended complaint demonstrate that
9 Plaintiffs are entitled to summary judgment in this declaratory judgment action. In addition,
10 however, Plaintiffs present to the Court expert opinions on the predicted impacts to the natural
11 resources and economy of the State, if Oregon, alongside other state and global sovereigns,
12 does not take action to arrest the emissions of carbon dioxide to mitigate the impacts of climate
13 change. Plaintiffs summarize those expert opinions below.

14 **1. Dr. James Hansen.**

15 Dr. Hansen is the former Director of the NASA Goddard Institute for Space Studies in
16 New York City and an Adjunct Professor of Earth Sciences at Columbia University's Earth
17 Institute. Hansen Decl. ¶ 2. He obtained his Ph.D in physics in 1967 from the University of
18 Iowa and since the 1970's has focused on computer simulations and studies of the Earth's
19 climate to understand the impact of humans on Earth's climate. *Id.* ¶ 4. Dr. Hansen's opinions
20 are summarized below:

- 21 • Human burning of fossil fuels has disrupted the Earth's energy balance and caused
22 the Earth to heat up. The atmosphere is currently impaired because the
23 concentration of CO₂ is causing the Earth to absorb more heat than is reflected to
24 space. Atmospheric CO₂ concentrations are at their highest level in three million
25 years, and global surface temperatures are higher than they have been in the last
26 10,000 years during the development of human civilization, *id.* ¶ 10;

- 1 • This warming process will worsen and accelerate unless we change course. Unless
2 abated, carbon emissions will initiate dramatic and rapid climate changes that will
3 spin out of control for present and future generations as the planet's energy
4 imbalance triggers amplifying feedbacks, which push the planet past critical tipping
5 points, *id.* ¶ 11; and
- 6 • There is a brief window of opportunity to reverse course in order to preserve a
7 habitable climate system, but the window is closing quickly. Dr. Hansen and a
8 world-renowned team of scientists have developed a prescription or "glide path"
9 that returns atmospheric concentrations to 350 ppm by the end of the century, the
10 level necessary to sustain life on Earth as we currently know it. *Id.* ¶ 12, 59.

11 2. Dr. Phillip Mote

12 Dr. Mote is the Director of the Oregon Climate Change Research Institute in the
13 College of Earth, Ocean & Atmospheric Sciences at Oregon State University. Mote Decl. ¶ 1.
14 Dr. Mote received his Ph.D in atmospheric sciences from the University of Washington in
15 1994, and a B.A. with honors in physics from Harvard University in 1987. *Id.* Before
16 assuming his current position as Director of OCCRI, Dr. Mote was the State Climatologist for
17 the State of Washington from 2003 until 2009. He is the current co-leader of the NOAA-
18 funded Climate Impacts Research Consortium ("CIRC") for the Northwest, and also of the
19 Northwest Climate Science Center for the U.S. Department of the Interior.

20 Dr. Mote summarizes for the Court the findings and conclusions of OCCRI's 2013
21 report *Climate Change in the Northwest – Implications for Our Landscapes, Waters, and*
22 *Communities*, which is attached to his declaration. Observed and predicted impacts from
23 climate change in Oregon are summarized as follows:

- 24 • Alterations in streamflow magnitude and timing, water temperatures, and water
25 quality, particularly in snow-dominant watersheds and those fed by glacial runoff,
26

1 which will experience reduced spring peak flow, increased winter flow, and
2 reduced late-summer flow, *id.* ¶ 4–5;

- 3 • Changes in hydrologic flow regimes and warming stream and lake temperatures
4 pose significant threats to aquatic ecosystems and are expected to alter key habitat
5 conditions for salmon and other aquatic species, *id.* ¶ 4;
- 6 • Water-dependent recreational activities will be affected by dry conditions, reduced
7 snowpack, lower summer flows, impaired water quality, and reduced reservoir
8 storage, *id.* ¶ 5;
- 9 • Sea level along the coast is projected to rise 4-56” by 2100 relative to 2000 levels,
10 resulting in erosion, sea water intrusion, and flooding, *id.* ¶ 6;
- 11 • Increasing acidification of ocean waters hinders the ability of shellfish to build
12 shells and skeletons and could alter key ecological processes, threatening coastal
13 marine ecosystems, fisheries, and aquaculture, *id.* ¶ 4;
- 14 • Northwest forest ecosystems will experience increased fire activity in response to
15 warmer and drier summers, *id.* ¶ 7, and the abundance and distribution of many
16 species of fish and wildlife may also be affected, *id.* ¶ 4–5;
- 17 • Average temperatures and heat events are projected to increase in the Northwest
18 with an expected increase in the incidence of heat-related illness and death, *id.* ¶ 8;
19 and
- 20 • Climate change can have a negative impact on respiratory disorders due to longer
21 and more potent pollen seasons, increases in ground-level ozone, and increases in
22 particulate matter due to wildfires. *Id.* ¶ 9.

23 3. Dr. Burke Hales

24 Dr. Burke Hales is a Professor of Ocean Ecology and Biogeochemistry at the College
25 of Earth, Ocean, and Atmospheric Sciences at Oregon State University. Hales Decl. ¶ 2.
26 Dr. Hales obtained his Ph.D in Chemical Oceanography from the University of Washington

1 School of Oceanography in 1995. *Id.* Ex A. He has co-authored over 60 scientific papers and
2 was lead author of “North American Continental Margins,” detailing carbon cycling research
3 in the continental margins (which includes the continental shelf, continental slope, and
4 continental rise) of North America. *Id.* ¶ 5. Since 2007, he has been studying the “combined
5 effects of natural variability and human influences on the carbonate chemistry of the coastal
6 ocean,” and since 2008 has studied “the links between ocean and estuarine chemistry
7 fluctuations and the responses of shellfish populations.” *Id.* ¶ 7. Dr. Hales’ opinions are
8 summarized below:

- 9 • Anthropogenic emissions of carbon dioxide have resulted in ocean acidification, *id.*
10 ¶ 8;
- 11 • The increased corrosivity in ocean waters in Oregon and the Pacific Northwest are
12 threatening the ability of larval shellfish like mussels and oysters to build shells and
13 skeletons necessary for natural reproduction, *id.* ¶ 7; and
- 14 • The change in corrosivity has already pushed shellfish producers to implement
15 costly mitigation measures to respond to poor marine water conditions. *Id.* ¶ 8.

16 4. Mr. Ernie Niemi

17 Mr. Niemi is a trained economist and founder of Natural Resources Economics, Inc.
18 based in Eugene, Oregon. Niemi Decl. ¶ 1. From 1978 until 2012, he managed economic and
19 policy analysis for the consulting firm, ECONorthwest, where he was a co-owner, vice
20 president, and senior economist. *Id.* Ex A. He obtained a B.S. in chemistry from the
21 University of Oregon in 1970 and a Master of City and Regional Planning from Harvard
22 University in 1978. *Id.* Mr. Niemi specializes in applying the principles of cost-benefit
23 analysis, economic valuation, and economic-impact analysis to describe the economic
24 importance of natural resources.

25 In 2009, Mr. Niemi prepared a report entitled *An Overview of Potential Economic*
26 *Costs to Oregon of a Business-As-Usual Approach to Climate Change* on behalf of the

1 Program on Climate Economics, Climate Leadership Initiative, Institute for a Sustainable
2 Environment at the University of Oregon. In his declaration, Mr. Niemi summarizes the
3 findings of his report, which represents the most thorough estimates of the economic costs of
4 climate change in the State of Oregon. Those findings include:

- 5 • By 2020, the potential economic costs in Oregon total \$3.3 billion per year;
- 6 • By 2040, the potential economic costs in Oregon total \$3.6 billion per year;
- 7 • By 2080, the potential economic costs in Oregon total \$9.8 billion per year;

8 Niemi Dec ¶ 14.⁷

- 9 • These costs result from the predicted adverse impacts to natural resources,
10 including:
 - 11 • Increased health-related costs from human mortality and illness associated with
12 decreased air quality;
 - 13 • Reduced salmon populations;
 - 14 • Increased flood and storm damage;
 - 15 • Reduced food production;
 - 16 • Increased wildfire costs; and
 - 17 • Lost recreation opportunities.

18 Niemi Dec ¶¶ 7-13.

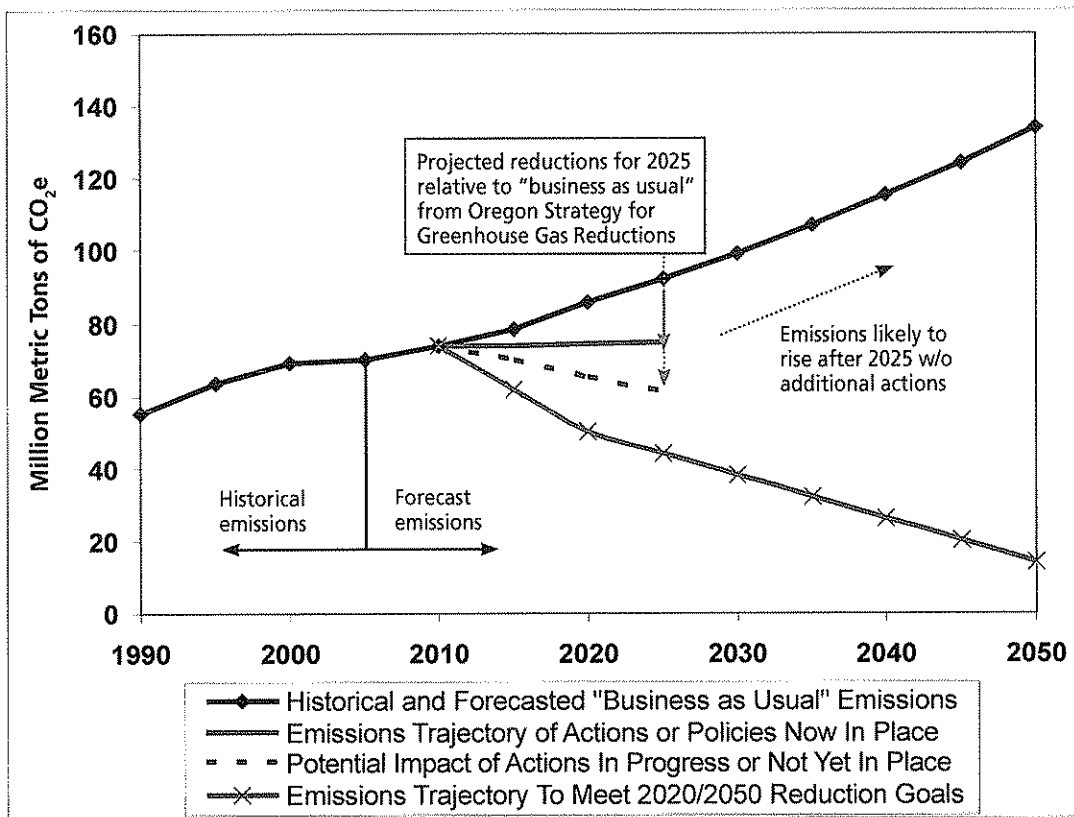
19 **C. The State of Oregon's Own Data Documents Unequivocally that the State**
20 **is Failing to Achieve the Reductions in Emissions of Greenhouse Gases**
21 **That Are Necessary to Uphold its Fiduciary Obligations Under the Public**
22 **Trust Doctrine.**

23 In 2007, following a report from the Governor's Advisory Group on Global Warming,
24 the Oregon legislature passed House Bill 3543, which set non-binding targets for reductions in
25 the emissions in greenhouse gases in the State of Oregon. *See* HB 3543 (2007), Or Laws 2007,

26 ⁷ These economic impacts do not include the lost value of all public trust resources, ecosystem
functions, and human life, and the true costs to Oregon could be much more severe.

PROGRESS TOWARD OREGON'S GREENHOUSE GAS REDUCTION GOALS: *Analysis Based on Emission Trajectories from 2025 Reduction Point Estimates*

The *Oregon Strategy for Greenhouse Gas Reductions* lists actions to reduce greenhouse gas emissions and reduction estimates for those actions in the year 2025. In the final report of the Climate Change Integration Group,* an assessment was made as to which of these actions were "in place" (i.e., legislated or otherwise being implemented); "in progress" (i.e., on their way to being put in place); or inactive. Based on this assessment, the estimated impacts in 2025 (relative to the "business as usual" emission forecast) of actions now in place, and a hypothetical estimate if all the actions "in progress" come to fruition, are plotted in the figure below. By using 2010 as a starting point for reductions (a reasonable simplification), and examining the slope of the "emissions trajectories" between estimated emissions in the years 2010 and 2025, it can be seen by virtue of the policies now "in place" that Oregon appears to be on track to meet its first goal of arresting the growth of greenhouse gas emissions by 2010. However, it can also be seen that even if all the actions now "in progress" are completed by 2020, the state will likely fall well short of meeting its 2020 emission reduction goal, and, by extrapolation, clearly is not on track to meet its 2050 goal. In fact, it is likely that without additional actions put in place by 2025, the emissions trajectory will begin rising, because the impact of key reduction policies will have peaked by that time period.



* *A Framework for Addressing Rapid Climate Change*, Final Report to the Governor, Climate Change Integration Group, State of Oregon, January 2008. For more information regarding this methodology please see pp. 34-36.

power service with lower carbon emissions. The emissions trajectory associated with a natural gas replacement option is located below the “Incremental RPS Forecast” line in Figure 5 and begins in 2020.

Low Carbon Fuel Standard (LCFS): Legislation passed in 2009 authorizes Oregon’s Environmental Quality Commission (EQC) to put in place a low carbon fuel standard that would reduce the carbon intensity of the transportation fuel mix used in this State by 10 percent (on a life-cycle emissions basis). Assuming that the EQC moves forward and puts in place that standard, a drop in emissions can be expected, at least for a few years since the LCFS currently is set to expire in 2015. However, if the Oregon Legislature chooses to continue this program, substantial reductions can be expected by 2022 and beyond. This emissions trajectory is mapped out in Figure 5 with both solid and dashed lines based on an approximate translation of the point estimates for the program available for 2022.²⁴ The emissions trajectory past 2022 is unclear at this time, and therefore no attempt has been made to represent that uncertain trajectory past 2022 in Figure 5. Future analysis may be able to better project these impacts.

Taken together, the analysis represented in Figure 4 and Figure 5 presents a somewhat complicated but still optimistic view on the State’s progress toward its greenhouse gas reduction goals. It does seem clear at this point that by the year 2010 greenhouse gas emissions will have stabilized for a number of years and will represent, on average, a more or less flat emissions trajectory. It also appears that combined with the policies and programs put in place thus far by the State of Oregon a few key policies either coming into effect by 2020 or realizing their full potential by that time period will “turn the corner” on Oregon’s emission growth and help to propel emissions downward, starting as early as 2012.

The period of time between 2010 and 2012 is less clear. If the current trend in greenhouse gas emissions holds through that time period, we can expect continued flat emissions through to 2012 and then a downward sloping trend. In contrast, the aggregate forecast represented in Figure 5 predicts a slight bump in emissions between 2010 and 2012, creating a more complicated picture of reaching the 2010 greenhouse gas reduction goal. Nonetheless, that bump is not expected to exceed peak historical emissions and, once the expected downward trend begins in 2012, the oscillating emission trend of recent years would likely continue and the linear trend line that has been flat thus far should continue. Thus, it is reasonable to expect that in the future, looking back at the data as they are expected to play out given this forecast, there will be a clear plateau evident in the emissions data in the 2010 time period, with a downward sloping emissions trajectory afterward. Given the margin of error inherent in any forecasting process the important point is that the necessary actions will be in place to ensure that there is a reversal in the “business as usual” emissions forecast such that the downward trend towards Oregon’s greenhouse gas emissions reduction goals will begin soon, perhaps as early as next year.

Finally, it is important to note that the current emissions trajectory, and that predicted from implementation of the key greenhouse gas mitigation measures noted above, does not place the State on a path to meet its 2020 and 2050 emission reduction goals. Although the general outlook for greenhouse gas emissions going forward is more encouraging than was reported by the Commission in its last report to the Oregon Legislature, there is still not a clear path to meeting those two future

²⁴ Oregon Department of Environmental Quality, “Final Report: Oregon Low Carbon Fuel Standards Advisory Committee Process and Program Design”, January 25, 2011, page 163.

greenhouse gas reduction goals. That is in large part the role of the Roadmap to 2020 project the Commission has undertaken. A next step for the Commission will be to take the actions identified in the Roadmap process and to quantify their potential impact, as well as make decisions on the degree to which action should be undertaken on those emission reduction measures. In practical terms, to take the type of analysis demonstrated in Figure 5 with the three “big” policies and to extend that analysis, so that the key actions identified in the “Roadmap to 2020” process are grouped together in a manner to demonstrate a clear and cumulative pathway to meeting the State’s 2020 greenhouse gas reduction goal. This exercise will involve making some tough decisions about how much of a burden some sectors may have to bear in the short term if the 2020 goal is to be met, and how much of that burden may fall in later years as the State continues its path to meeting its long term emission reduction goal in 2050.

III. New Directions in Tracking Oregon’s Greenhouse Gas Emissions

Historically, Oregon and other states have been limited in the types of greenhouse gas data that they have been able to collect, analyze, and use to prepare greenhouse gas inventories. “Bottom up” emissions data that is measured or computed directly from greenhouse gas emissions sources have not been available for the vast majority of emission sources. Therefore, a variety of estimation and modeling techniques have been used to generate emission estimates. Typically these methods involve using energy use, industrial activity, or socioeconomic indicators along with appropriate emission factors to generate greenhouse gas emission estimates for the combined impact of a set of emission sources. Oregon has relied on this type of “top down” inventory approach for the past twenty years. The protocols and methodologies used in this approach mirror the same approaches used by the US Environmental Protection Agency (EPA) in its preparation of the national inventory pursuant to international reporting agreements. As a result, Oregon’s greenhouse gas inventory can be compared to similar inventory efforts in other states and the national inventory with few concerns since the same methodologies and protocols are used. The ability to compare these data, over time within Oregon and in relation to other states, is one of the primary reasons why maintenance of this consistent measure of Oregon’s greenhouse gas emission is important.

In the last biennium there have been new developments in tracking greenhouse gases in Oregon that are providing important new perspectives and a fuller understanding of Oregon’s total carbon footprint. These new analytical frameworks provide richer sets of data that are tailored to analyzing in greater depth some of the most difficult questions facing Oregon policy makers. Most significantly, since 2009, Oregon has required emitters of significant amounts of greenhouse gases to report their emissions to the Oregon Department of Environmental Quality (DEQ) and similar requirements have also been put in place by the US Environmental Protection Agency. These mandatory reporting processes will be a new and important source of “bottom up” emissions data that will enhance ongoing efforts to track Oregon’s greenhouse gas emissions. The reporting rules currently in effect for Oregon target only about 30 to 40 percent of the State’s total emissions, but new rules put in place in 2010 broaden the reporting umbrella to upwards of 80 to 90 percent of emissions. Over time these new “bottom up” data will be integrated with the “top down” data to enhance the overall Oregon greenhouse gas inventory process.

Figure 16: Historical Greenhouse Gas Emissions and the Impact of Key Policies toward Achieving Reduction Goals

