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Ground?

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PUBLIC TRUST LIMITS ON GREENHOUSE GAS TRADING SCHEMES: A SUSTAINABLE MIDDLE GROUND?

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While academics, policy advocates, and politicians continue the debate, there is a growing likelihood that the United States response to human caused climate change will take the form of a “cap and trade” program seeking to limit greenhouse gas emissions reductions. “Cap and trade” programs, like the American Clean Energy and Security Act passed by the House of Representatives in June 2009,² necessarily incorporate tradable emissions rights – essentially tradable rights to pollute. As such they run into principled objection by some environmentalists who oppose the notion of creating economic rights in the global common – essentially the “right to pollute.”³ This principled objection derives doctrinal support from the public trust doctrine – the ancient notion rooted in common law and Roman law that certain public resources such as flowing water, shorelands, and the air are not susceptible of private ownership, but are instead held by the sovereign “in trust” for the benefit of the public. This article will consider the application of public trust principles to greenhouse gas cap and trade. I conclude that, at least under the mature version of the public trust doctrine that prevails in U.S. law, a cap and trade system is not irreconcilable with a cap-and-trade greenhouse gas (GHG) emissions control program, but that a cap-and-trade program whose cap exceeds scientifically proven sustainable limits on GHGs violates sustainability principles implicit in United States public trust principles. Public trust precepts may also provide an interpretational principle that limits the possibility that tradable emissions rights from becoming a form of property entitlement.

WHAT IS CAP-AND-TRADE?

Under a cap-and-trade regulatory scheme, government regulators establish an overall cap on the permissible quantity of a pollutant (or related family of pollutants).⁴ Unlike so-called “command and control” regulatory schemes, this overall cap is not incorporated into individual permits for individual pollutant sources. Instead, tradable pollution allocations are distributed among sources either free of charge, or by government sale or auction. Pollution sources are then free to buy and sell allocations. In theory, tradable allocations promote efficiency by encouraging pollution control at the lowest cost, as the low control-cost polluter will achieve a greater reduction than their proportional share in order to generate credits (or use fewer allocations) that can be sold to the high pollution control-cost polluter at a profit. Some economists rave about the economic efficiency of tradable pollution rights and thrill to see the Coase Theorem come

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² H.R. No. 2454, 111th Cong. (2009).

³ *See infra nn.* _____.

⁴ *See generally*, EPA, Clean Air Markets--Allowance Trading, EPA.GOV, <http://www.epa.gov/airmarkets/trading/> (last visited July 17, 2009) (“Allowance trading basics and concepts” link).

to life.⁵ Economically minded environmentalists likewise hail the cost-internalization potentials of cap and trade.⁶

In order to function, a cap and trade program must have an overall cap, include all significant sources of the regulated pollutant, involve pollutants that are fungible both in their effects and in the location of their source, have an open market mechanism for buying and selling allocations, and contemplate strict monitoring and enforcement.⁷ The most successful cap-and-trade program to date is the Acid Rain air pollutant trading program of Clean Air Act Title IV, which established and (by 2000) achieved a cap on power plant acid rain emissions at 50% of 1990 levels at a cost far below (probably inflated) industry estimates.⁸ SO_x/NO_x emissions trading allocations trade on the Chicago Board of Trade.

Global greenhouse gas emissions would appear to be an excellent candidate for a cap-and-trade program. Greenhouse gases are fungible, and as global warming is a global problem in which impacts are not localized to sources, the location of emissions reductions is also fungible.

But to be effective ecologically (and not merely economically) the “cap” in a cap-and-trade program must be based on an accurate assessment of the level of pollutant that the ecological system can sustain without damage. To achieve an environmental mitigation goal, the scientific, political, and regulatory systems must together arrive at the “correct” cap that exploits the assimilative capacity of the ecological system while avoiding environmental harm. The jury is still out on the question of whether the Acid Rain Trading program has actually eliminated acid rain impacts on northeastern lakes and forests (some places have noted improvements, others have not, and recovery from decades of acid rain will take time).⁹

PROS AND CONS OF EMISSIONS TRADING

⁵ See Inho Choi, *Global Climate Change and the Use of Economic Approaches: The Ideal Design Features of Domestic Greenhouse Gas Emissions Trading with an Analysis of the European Union's CO₂ Emissions Trading Directive and the Climate Stewardship Act*, 45 *Nat. Resources J.* 865, 881 (2005); Gerald Torres, *Who Owns the Sky*, 19 *Pace Env'tl. L. Rec.* 515, 560 (2002); Adam Rose, Thomas D. Peterson, and ZhongXiang Zhang, *Regional Carbon Dioxide Permit Trading in the United States: Coalition Choices for Pennsylvania*, 14 *Penn St. Env'tl. L. Rev.* 203, 229 n.22 (2006); Ronald Coase, *The Problem of Social Cost*, 3 *J.L. & ECON.* 1, 8 (1960). Under the so-called [??] Coase Theorem, conversion of environmental interests to tradable property rights, with a free exchange for such rights, will lead to an economically efficient amount of environmental protection regardless of the initial allocation of environmental rights, as those interested in protecting environmental resources and those interested in compromising those resources will bargain with each other to achieve the economically efficient allocation.

⁶ See Thomas C. Brown, John C. Bergstrom, John B. Loomis, *Defining, Valuing, and Providing Ecosystem Goods and Services*, 47 *Nat. Resources J.* 329, 351 (2007); Elizabeth Burleson, *Multilateral Climate Change Mitigation*, 41 *U.S.F.L. Rev.* 373, 390 (2007);

⁷ See generally A.D. Ellerman, *Emissions Trading in the United States: Experience, Lessons and Considerations for Greenhouse Gases*, *Pew Center on Global Climate Change Report* (May 2003) at 4-9; Salzman & Ruhle, *Currencies and Commodification of Environmental Law*, 53 *Stan. L. Rev.* 607 (2000).

⁸ Clean Air Act 403, 42 U.S.C. 7651b (1995); see generally Ann Powers, *Reducing Nitrogen Pollution on Long Island Sound: Is There a Place for Pollutant Trading?*, 23 *COLUM. J. ENVTL. L.* 137, 153-163 (1998).

⁹ James Dao, *Acid Rain Law Found to Fail in Adirondacks*, *N.Y. Times*, March 27, 2000, at A1.

As noted, economists applaud emissions trading as a means to achieve environmental goals at the least overall cost to industry (and, by extension, to society). Industry argues that tradable emissions rights encourage technological innovation by rewarding entrepreneurs who develop new and cheaper pollution control technologies or pollution avoiding processes with a ready market. Wall street traders and hedge fund managers welcome another arena to play their arbitrage games. Environmentalists, however, split on the merits of emissions trading on both practical and principled grounds.

On practical grounds, some commentators question the economic efficiency of emissions trading programs. Daniel Dreisen, for instance, points out that the Clean Air Act Acid Rain Trading Program did not result in new scrubber technologies, or even widespread installation of existing scrubber technology. It rather led to a shift in the market to favor low-sulfur western coal that was already available.¹⁰ By “capping” the amount of reductions to be achieved, emissions trading froze technology instead of forcing its advance.

Environmentalists also question the legitimacy of emissions trading programs on ethical grounds¹¹. Professor Kirk Junker has observed that emissions trading programs rest on the flawed moral premise that there exists a “right to pollute” that can be converted to tradable property rights.¹² This “right to pollute” is inconsistent with a “right to a clean environment” – or, stated another way, a right to a clean environment implies a duty not to pollute, which negates a system based on tradable pollution rights. Tradable property interests have a way of becoming vested and inalienable over time no matter how clearly the initial property interested is limited. These ethical objections to tradable emissions rights also draw support from the public trust doctrine, which holds that certain natural resources by their very nature are not susceptible to private ownership.

Before considering the application of public trust principles to cap-and-trade emissions controls, it is worth noting the powerful practical and political arguments in favor of a cap and trade system as a means of controlling global greenhouse gas emissions. In addition to the arguments for entrepreneurial technology development and the economic efficiency advantages of emissions trading, these benefits include industry acceptance and greater certainty of enforcement.

¹⁰ David M. Driesen, *Free Lunch or Cheap Fix?: The Emissions Trading Idea And The Climate Change Convention*, 26 B.C. ENVTL. AFF. L. REV. 1 (1998).

¹¹ See Robert Hahn and Gordon Lester, *Where Did All the Markets Go? An Analysis of EPA's Emissions Trading Program*, 6 Yale J. on Reg. 109, 142 (1989); Steven Kelman, *What Price Incentives? Economists and the Environment* 27-28 (1981); James T.B. Tripp & Daniel J. Dudek, *Institutional Guidelines for Designing Successful Transferable Rights Programs*, 6 Yale J. on Reg. 369, 370 (1989) (“[environmentalists] oppose credit exchange mechanisms, which implicitly recognize rights to release pollutants into the environment, based on a belief that harming the natural environment is wrong under any circumstances, and that putting a price on environmental issues cheapens them by making them matters of private interest and not matters of public-spirited societal consensus.”); Norman W. Spaulding III, Note, *Commodification and Its Discontents: Environmentalism and the Promise of Market Incentives*, 16 Stan. Envtl. L.J. 293, 322 (1997) (“The significance of the statement that no one ought to have a market-transferable right to pollute is simply that it attempts to draw a line between conduct properly relegated to the whims of the marketplace and conduct properly controlled by other means. The moral consequences of erasing this line is something environmentalists must consider.”).

¹² Kirk W. Junker, *Ethical Emissions Trading and the Law*, 13 U. Balt. J. Envtl. L. 149 (2006).

Cap and trade programs have wider industry acceptance than other emissions control measures and are thus more likely to be achievable politically.¹³ In addition, since the value of the economic rights created by emissions trading depends on adequate monitoring and enforcement, market forces actually impel full enforcement of the regulatory regime. Thus, enforcement of limits imposed by a cap-and-trade system tends to be closer to the full enforcement necessary to achieve environmental quality goals.¹⁴ Put simply, no-one will pay 24 euros per ton to emit carbon dioxide if bootleg emitters who do not purchase allocations are unlikely to be caught and punished. Purchasers, speculators, and dealers in emissions credits all have vested, potentially multi-billion dollar interests in seeing full enforcement of emissions limits. This addition of vested economic interests to the usual array of environmental interests should help to eliminate discretionary non-enforcement the underlying emissions norm.

Like Churchill's famous aphorism about democracy, cap and trade may also be "the worst form of government except all those other forms that have been tried from time to time." The only other means to control carbon emissions would be either a traditional "command and control" allocation of permissible carbon emissions, or a carbon tax. Either would be difficult to implement in our political and economic system.

We have a carbon-based economy. Fossil fuel powers the vast majority of economic activity in this country. Any command-and-control system of regulating greenhouse gas emissions would require a governmental agency (or Congress itself) to allocate the currency of economic activity among different industries and industry participants. In essence, a command-and-control based system would require a Soviet-style centrally planned economic system.¹⁵ It is unlikely that such a system would be economically desirable or politically palatable. It is telling that the environmental-quality standard based regulatory schemes of both the Clean Air Act (NAAQS) and the Clean Water Act (WQS) have been abject failures at achieving their environmental quality goals even after 35 years of implementation.¹⁶ This failure has been due largely to the lack of political will to set emissions load levels and make the necessary allocations among individual and industrial sources of pollutants.

¹³ See Alan Murray, *Why Key Executives are Warming to Legislation on Climate Change*, WALL ST. J., Feb. 7, 2007, at A1.

¹⁴ See Lesley McAllister, *Fourth IUCN Academy of Environmental Law Worldwide Colloquium: Implementing Environmental Legislation: The Critical Role of Enforcement and Compliance: Putting Persuasion Back in the Equation: Compliance in Cap and Trade Programs*, 24 *Pace Env'tl. L. Rev.* 299 (2007).

¹⁵ See Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 *Stan. L. Rev.* 1333, 1334 (1985); Richard B. Stewart, *Models for Environmental Regulation: Central Planning Versus Market-Based Approaches*, 19 *B.C. Env'tl. Aff. L. Rev.* 547, 547 (1992); Richard B. Stewart, *Environmental Regulation and International Competitiveness*, 102 *Yale L.J.* 2039, 2087 (1993); Cass R. Sunstein, *Free Markets and Social Justice* 276 (1997); see contra Daniel H. Cole & Peter Z. Grossman, *When is Command-and-Control Efficient? Institutions, Technology, and the Comparative Efficiency of Alternative Regulatory Regimes for Environmental Protection*, 1999 *Wis. L. Rev.* 887 n.2 (1999)(disputing characterization of "command and control" regulation to Soviet style market control).

¹⁶ Kenneth Murchison, *Learning from more than five-and-a-half Decades of Federal Water Pollution Control Legislation: Twenty Lessons for the Future*, 32 *B.C. Env'tl. Aff. L. Rev.* 527, 578-580 (2005) (failure of Clean Water Act to achieve water quality goals); Alan Waltner, *Paradise Delayed - The Continuing Saga of the Los Angeles Basin Federal Clean Air Implementation Plan*, 14 *UCLA J. Env'tl. L. & Pol'y* 247 (1995) (failure of California to meet air quality standards).

A carbon tax suffers from similar defects as a means to achieve a specific level of emissions reductions. A carbon tax works, in theory, similarly to emissions trading by sending a “price signal” to reduce carbon emissions to the appropriate level. Unlike an emissions trading program, which merely requires scientific perfection (i.e., getting the overall emissions cap just right to save the planet without overshooting and imposing costs greater than necessary), a carbon tax program also require perfect economic calculations – that is, the taxing agency must predict the exact level of tax that will achieve precisely the correct reduction in greenhouse gas emissions. In addition, carbon taxes have a moral hazard attached to them – by creating a governmental revenue stream, the taxing authorities end up with an interest in continuing some level of the very activity the tax is supposed to dissuade – or else they will lose the revenue stream.¹⁷ And a carbon tax at a level necessary to achieve the 85 percent reduction in greenhouse gas emissions scientists agree is essential would not be possible politically. Gas prices would have to rise to many multiples of their current levels to achieve this reduction, and it is unlikely that any politician would support a gasoline tax at that level.¹⁸

The same political problem may ultimately doom any cap-and-trade system as well, given that the necessary price point to achieve the reduction would be the same. The only difference would be that with a tax, it would be the politically answerable taxing authority setting the price point; with cap-and-trade, it would be the market setting the price with a supply of emissions allocations that falls far short of current demand. A cap-and-trade system might be slightly more palatable, as there may be less political resistance to a market-based price over a government tax. Ironically, public polling taking before the recent spike in gasoline prices showed that the public in the United States would prefer a carbon tax to a cap-and-trade system.

In sum, there are serious ethical objections to an emissions trading system for GHG emissions, but there are strong practical reasons to favor such a system as the only means of controlling GHG that has any chance of success.

DOES PUBLIC TRUST DOCTRINE APPLY TO GHG CAP AND TRADE PROGRAMS?

According to the institutes of the Roman Emperor Justinian, “By the law of nature, these things are common to mankind: the air, running water, the sea, and consequently the shores of the sea.”¹⁹ Under the public trust principle, these common resources cannot be reduced to private ownership. English common law incorporated these principles, at least as applied to tidal navigable waters, holding that while title to the shoreline and navigable water rested in the King, he held such title in trust for the people,

¹⁷ This moral hazard is illustrated by the awkward position the states in the tobacco litigation settlement, who came to depend on the revenue stream generated by tobacco sales. See NEWS ANALYSIS; States' Tobacco Settlement Has Failed to Clear the Air Los Angeles Times November 9, 2003 Part C Pg. 1.

¹⁸ During the 2008 oil price spike, when gasoline prices in the United States doubled to \$4 per gallon, vehicle miles traveled declined by only 1.8%. See Driving Less, Americans Finally React to Sting of Gas Prices, A Study Says, New York Times, June 19, 2008 at C3. Clearly, a tax rate that may be many multiples of current gasoline prices would be necessary to accomplish the 80% reduction in carbon emissions sought by mid-century.

¹⁹ J. INST., 2.1.1-2.1.6 at 55 (P. Birks & G. McLeod trans. 1987).

subject to the right of the public to access the waters for navigation and for fishing.²⁰ In essence, the public trust doctrine holds that certain resources are not susceptible of private ownership. In its common law conception, it served the public's interest in free navigation and fishing.

United States decisions have incorporated public trust doctrine into United States domestic law to varying degrees. In an influential 1970 article, Professor Joseph Sax linked public trust doctrine to environmental protection, and argued for the use of public trust principles as a common law restraint on environmental degradation.²¹ Public trust doctrine in the United States remains amorphous both in its authoritativeness and in its application. It has both procedural and substantive aspects. Procedurally, it has been applied to preclude alienation of parklands and other public trust resources without specific legislative authorization.²² Substantively, it has been applied to preclude grants of private interests in navigable waters or shoreline to the exclusion of public rights of navigation and access.²³

Considerable uncertainty surrounds the scope and effect of the public trust doctrine in United States law. Scholars disagree on the source of public trust law, whether it applies to limit federal government action, and whether it even applies beyond the traditional public trust assets of navigable water. Application of public trust doctrine limits to a GHG cap-and-trade program requires consideration (if not resolution) of such questions as the doctrinal source of public trust limits on governmental action, the applicability of public trust principles to federal legislation, and the question whether United States public trust doctrine extends to environmental and cultural resources beyond the traditional public trust zone of territorial navigable waters [very hard to follow].

A. WHERE DOES PUBLIC TRUST DOCTRINE COME FROM?

United States public trust doctrine traces its roots through English common law back to the Justinian Code. The New Jersey Superior Court is credited with the first State articulation of public trust principles, in *Arnold v Mundy*.²⁴ In that 1821 decision, the court rejected a claim of trespass brought by the claimed proprietor of oyster beds located in tidal waters. The court articulated the public trust principles inherited by the states, as well as their multiple roots in natural, civil, and common law:

. . . Every thing susceptible of property is considered as belonging to the nation that possesses the country, and as forming the entire mass of its wealth. But the nation does not possess all those things in the same

²⁰ See generally 1 R. CLARK, WATERS AND WATER RIGHTS 182-83 (1967) (footnotes omitted); *Shively v. Bowlby*, 152 U.S. 1, 11-14 (1894); DE JURE MARIS, 1 HARGRAVE TRACTS 5-44 (1787); S. MOORE, A HISTORY OF THE FORESHORE (3d ed. 1888).

²¹ Joseph Sax, The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention, 68 Mich. L. Rev. 471 (1970) (hereinafter, "Sax, Public Trust.")

²² E.g., *Gould v. Greylock Reservation Commission*, 215 N.E.2d 114 (Mass. 1966).

²³ E.g., *Illinois Central Ry. v. Illinois*, 146 U.S. 387 (1892); *Marba Sea Bay Corp. v. Clinton Street Realty Corp.*, 272 N.Y. 292 (1936).

²⁴ 6 N.J.L. 1 (1821).

manner. . . . Those things not divided among the individuals still belong to the nation, and are called public property. Of these, again, some are reserved for the necessities of the state, and are used for the public benefit, and those are called "the domain of the crown or of the republic;" others remain common to all the citizens, who take of them and use them, each according to his necessities, and according to the laws which regulate their use, and are called common property. Of this latter kind, according to the writers upon the law of nature and of nations, and upon the civil law, are the air, the running water, the sea, the fish, and the wild beasts. . . . But inasmuch as the things which constitute this common property are things in which a sort of transient usufructuary possession, only, can be had; and inasmuch as the title to them and to the soil by which they are supported, and to which they are appurtenant, cannot well, according to the common law notion of title, be vested in all the people; therefore, the wisdom of that law has placed it in the hands of the sovereign power, to be held, protected, and regulated for the common use and benefit.²⁵

Since the oyster beds claimed by the plaintiff in *Arnold v. Mundy* were, as a fishery, part of the trust held for public benefit, the Court held that the plaintiff in trespass had not acquired rights to the oyster beds either by colonial grant or by use.

Arnold v. Mundy was not the first reflection of public trust principles in American law. Prior reflections of public trust principles appear both in colonial legislation and acts of the early Congresses. The Massachusetts Bay Colonies' Ordinances of 1641 and 1647 granted riparian landowners rights to build structures below the high water mark on tidal waters but explicitly reserved the public trust right of the public to cross such underwater lands for navigation, fishing, and fowling.²⁶ Similarly reflecting public trust navigation rights, in the Northwest Ordinance Congress declared that Mississippi and Saint Lawrence Rivers should be "common highways, and forever free."

Arnold v. Mundy adopted public trust principles into the common law of New Jersey as a limit on the scope of a riparian landowner's claimed rights to lands under water and an implicit limit on the sovereign's power to alienate those rights to private interests. Subsequent decisions of the United States Supreme Court federalized this public trust limit on the alienability of lands under water, though with considerable ambiguity about the source and authority of these limits. Thus, in 1842 in *Martin v. Waddell's Lessee*,²⁷ the Supreme Court applied *Arnold v. Mundy* to resolve another New Jersey property dispute concerning ownership of oyster beds in Raritan Bay, apparently as a matter of federal common law.²⁸ In the 1894 case of *Shively v. Bowlby*,²⁹ the Court applied public trust principles to limit the scope of a riparian property owner's rights

²⁵ *Id.* at 71.

²⁶ See Jack Archer, *et al.*, *The Public Trust Doctrine and the Management of America's Coasts* 5-6 (University of Massachusetts Press 1994).

²⁷ 41 U.S. 367 (1842).

²⁸ The opinion does not explain the source of the legal principles it applies, and cites state common law cases freely.

²⁹ 152 U.S. 1 (1894).

under a Congressional grant of territorial property, as against the public trust rights of the subsequently admitted State of Oregon. The *Shively* decision was grounded in the “equal footing” doctrine; that is, the idea that all States subsequently admitted to the Union enjoy the same sovereign rights as the original thirteen. Thus, Oregon was entitled to take sovereign title to its public trust lands on the same basis as original States such as New Jersey, and the prior Congressional grants were presumed not to compromise the public trust assets of future states. The Court left open, however, the possibility that a clearly expressed Congressional intention to convey territorial public trust lands would be effective.³⁰

Perhaps the most dramatic application of the public trust doctrine by the Supreme Court (and certainly the most cited) came in the 1892 case of *Illinois Central Railroad v. Illinois*.³¹ The Illinois legislature had previously granted rights to underwater lands comprising the entire Chicago waterfront to Illinois Central Railroad. A subsequent legislature declared this grant null and void, and rescinded it. The railroad challenged the rescission as an unconstitutional taking of its property, and the Supreme Court upheld the legislature’s rescission, citing public trust principles as a limit on the nature of title held in lands under navigable water:

But it is a title different in character from that which the State holds in lands intended for sale. It is different from the title which the United States hold in the public lands which are open to preemption and sale. It is a title held in trust for the people of the State that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein freed from the obstruction or interference of private parties.³²

This passage from *Illinois Central* has been read, most famously by Professor Joseph Sax, as establishing public trust limits on sovereign states’ power to alienate trust assets. This reading is problematic. After all, *Illinois Central* did not hold unlawful anything the Illinois Legislature had accomplished. Rather, the Court simply accepted the subsequent legislature’s recapture of the public trust lands as being consistent with Illinois public trust principles that prevented the railroad from having acquired valid title in the first place.

The Supreme Court subsequently characterized *Illinois Central* as simple application of Illinois law governing the scope of rights that might be acquired in a state grant of public trust lands. In *Appleby v. City of New York*³³, the Court rejected a claim that the public trust principles established in *Illinois Central* precluded an effective grant of the state’s public trust interest (“*jus publicum*”) in lands under water. The plaintiff in *Appleby* sought to enjoin the City of New York from dredging and wharfing boats in a previously deeded area comprising a limited portion of the Hudson River waterfront. In rejecting the City’s public trust defense to a federal Contract Clause claim, the Supreme Court limited *Illinois Central* to the situation where a state sought to divest itself of a

³⁰ *Id.* at 57-58.

³¹ 146 U.S. 387 (1892).

³² *Id.* at 452.

³³ 271 U.S. 364 (1926)

substantial portion of the public trust resource. The Court further characterized *Illinois Central* as a statement of Illinois law, not a statement of federal principles limiting the permissible scope of state action.³⁴

Subsequent Supreme Court decisions similarly treat public trust principles as state empowerment, not a limit on state sovereign action. For example, in a 1994 case, *Phillips Petroleum v. Mississippi*,³⁵ the Court applied public trust doctrine to uphold Mississippi's claimed right to grant oil and gas leases as against those claiming title to the underlying lands, even while extending the scope of public trust lands to include non-tidal navigable lands. Commentators have likewise viewed the public trust doctrine as one which may empower states to regulate coastal environmental resources free from liability for takings claims. Under this view, public trust doctrine is one of the "background principles" of common law that inhere in title and limit the rights for which a property owner may seek compensation under the Takings clause of the Fifth Amendment.³⁶ The Court has generally eschewed any claim that public trust doctrine constitutes a federal limit on the alienability of public trust resources, explaining, instead, that the federal "equal footing" doctrine places public trust lands equally in the ownership of each state at the outset, subject to each state's disposition of the public trust assets according to its own common law rules.³⁷ According to the Court in *Phillips Petroleum*, states can "define the limits of the lands held in public trust and recognize private rights in such lands as they saw fit."³⁸

Despite this dictum by the Supreme Court, many commentators continue to view public trust doctrine as one that limits the scope of permissible State alienation of trust property. The leader among these academics, of course, is Professor Joseph Sax, who argued in 1970 that public trust doctrine would be a fruitful vehicle to enforce environmental values through existing common law doctrine.³⁹ These commentators have relied on various Constitutional and federalism doctrines to support the notion that public trust principles are of national dimension and are thus superior to contrary state law. Thus, Richard Epstein has argued that public trust limits on state action inhere in Equal Protection principles, as well as the converse of the takings clause: grant of unequal rights to public resources deprives other persons equal protection of the law, and the same principle that requires compensation for the taking of private property precludes inadequately compensated grants of public assets.⁴⁰ Other commentators have placed the source of public trust limits in the Commerce Clause of the Constitution, as an aspect of the implied guarantee of free navigation underlying dormant commerce clause

³⁴ 271 U.S. at 395 (referring to *Illinois Central* as a case which "arose in the Circuit Court of the United States, and the conclusion reached was necessarily a statement of Illinois law.")

³⁵ 484 U.S. 469 (1988).

³⁶ See, e.g., Michael C. Blumm & Lucas Ritchie, *Lucas's Unlikely Legacy: The Rise of Background Principles as Categorical Takings Defenses*, 29 Harv. Envtl. L. Rev. 321, 367 (2005); Joseph L. Sax, *Property Rights and the Economy of Nature: Understanding Lucas v. South Carolina Coastal Council*, 45 Stan. L. Rev. 1433, 1442 (1993).

³⁷ See *Phillips Petroleum*, 484 U.S. at 473-474.

³⁸ *Id.*

³⁹ Sax, *Public Trust*. For a critique of Sax, see Richard Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 Iowa L. Rev. 631, 643 n.75, 644 n.76 (1986).

⁴⁰ See Richard A. Epstein, *The Public Trust Doctrine*, 7 Cato J 411, 422-26 (1987).

analysis.⁴¹ Others define the public trust doctrine as a vestige of federal common law, permissible in the absence of federal legislation even after *Erie Railroad v. Tompkins* and *Swift v. Tyson*.⁴² One commentator finds federally enforceable public trust limits in natural law, incorporated through penumbras and emanations of the Ninth Amendment to the Constitution.⁴³

The *Illinois Central* decision explicitly grounded public trust limits on alienation of public trust assets as an essential aspect of state sovereignty, holding that “a State can no more abdicate its trust over property in which the whole people are interested, like navigable waters and soils under them, . . . than it can abdicate its police powers in the administration of government and the preservation of the peace.”⁴⁴ One commentator draws on this language and an Arizona decision to suggest that public trust principles are enforceable as inherent essentials of state sovereignty.⁴⁵ While *Illinois Central* relied on this inherent attribute of state sovereignty to limit the permissible scope of alienation of trust assets, other Supreme Court decisions have similarly relied on essential principles of state sovereignty to empower states under public trust principles.⁴⁶ The idea that public trust limits and powers inhere in the very nature of sovereignty is one consistent thread in public trust cases.

The Supreme Court relied on such unwritten notions of sovereignty, not incorporated by any specific constitutional provision, to strike down Congressional legislation imposing duties on state officers in *Printz v. United States*.⁴⁷ As public trust principles have been described as an essential attribute of sovereignty across cultures⁴⁸ and across millennia,⁴⁹ the Court’s reasoning in *Printz* that essential attributes of state sovereignty limit Congressional impositions equally supports the notion that similarly essential aspects of government sovereignty, such as public trust doctrine, provide a limit on government alienation of trust assets, equally enforceable as part of the social contract underlying the Constitutional bargains of federalism and popular sovereignty. This notion finds textual support in the Ninth Amendment reservation of rights not granted to the federal government “to the States and to the People.”⁵⁰

⁴¹ See Charles F. Wilkinson, *The Headwaters of the Public Trust: Some Thoughts on the Source and Scope of the Traditional Doctrine*, 19 *Envtl. L.* 425, 458-462 (1989).

⁴² Mary Turnipseed, Stephen E. Rody, Raphael Sagarin, and Larry B. Crowder, *The Silver Anniversary of the United States Exclusive Economic Zone: Twenty-Five Years of Ocean Use and Abuse, and the Possibility of a Blue Water Public Trust Doctrine*, 36 *Ecology L.Q.* 1, 47-50 (2009); Hope Babcock, *Grotius, Ocean Fish Ranching, and the Public Trust Doctrine: Ride’em Charlie Tuna*, 26 *Stanford Env. L. J.* 3, 54-60 (2007).

⁴³ See generally, George P. Smith and Michael W. Sweeney, *The Public Trust Doctrine and Natural Law: Emanations Within a Penumbra*, 33 *B.C. Env’tl. Aff. L. Rev.* 307 (2006).

⁴⁴ *Illinois Cent. R.R.*, 146 U.S. at 453.

⁴⁵ See James M. Kearney, *Recent Statute: Closing the Floodgates? Idaho’s Statutory Limitation on the Public Trust Doctrine*, 34 *Idaho L. Rev.* 91, 115-116 (1997) (citing *Arizona Center for Law in the Public Interest v. Hassell*, 837 P.2d 158 (Ariz. Ct. App. 1991)).

⁴⁶ See *Idaho v. Coeur D’Alene Tribe*, 521 U.S. 261 (1997); *Phillips Petroleum, supra*;

⁴⁷ See *Printz v. United States*, 521 U.S. 898 (1997).

⁴⁸ See Wilkinson, *Public Trust Headwaters, supra* n.____ at 429-430 (recounting that public rights of water use, including navigation and fishing are recognized in oriental cultures, as well as African and Islamic societies).

⁴⁹ See Justinian, *supra* n.____.

⁵⁰ U.S. Const. Am. IX.

The Supreme Court has also suggested the existence of inherently sovereign rights of “the people” that are not abrogated by the existence of States in the federal system. In *U.S. Term Limits, Inc. v. Thornton*,⁵¹ the Court held that the 10th Amendment only reserves to States those sovereign powers in existence at the time of founding of the United States, and reserved to the people those aspects of sovereignty not residing in the States. *Thornton* struck down a State attempt to add to the constitutional qualifications for members of Congress, holding that no such aspect of sovereignty existed at the time of the nation’s founding, and thus no such right was preserved to the States. The decision thus provides implicit support for the notion that there exist enforceable norms limiting the scope of sovereign powers, and that preservation of State sovereignty by the Tenth Amendment does not abrogate pre-existing rights of the people. Since public trust doctrine is a pre-existing limit on the scope of state sovereignty, *Thornton* would suggest that the pre-existing rights of the people in trust assets – at a minimum, rights to navigation and fishing – are preserved by the Ninth Amendment.

Like inherently sovereign right of “the people” to choose the qualifications of their representatives, public trust limits inhere in sovereignty, and these limits are reserved to the people.

B. DOES PUBLIC TRUST DOCTRINE LIMIT FEDERAL LEGISLATIVE ACTION?

The development of public trust doctrine has been almost entirely in the context of public trust limits and powers of States. *Phillips Petroleum* suggests that under the “equal footing doctrine,” all States inherit the same public trust baseline assets, but that following that baseline, each State may develop its own law and doctrine establishing the scope and limits of the public trust. One commentator has thus suggested that there is not one public trust doctrine in the United States, but rather fifty-one public trust doctrines – one for each State plus a federal doctrine.⁵² The Supreme Court has never determined the existence of a federal public trust doctrine as a limit on Congressional action, although it has, in cases like *Shively v. Bowlby*, applied public trust principles to interpret the scope of Congressional grants. Resolution of this question is key to resolution of the question whether public trust principles limit the scope of a greenhouse gas cap-and-trade program.

Lower federal courts have reached conflicting conclusions about the existence of federal public trust responsibilities. Three reported decisions address the issue: two suggest that the federal government holds public trust assets subject to the traditional public trust in navigation and fishing access; while another rejects this trust limitation. In *U.S. v. 1.58 Acres of Land*,⁵³ the District of Massachusetts held that land the federal government acquired by condemnation in order to build a coast guard station was taken

⁵¹ 514 U.S. 779 (1995) (holding that the 10th Amendment only reserves to States those sovereign powers in existence at the time of founding of the United States, and reserving to the people those aspects of sovereignty not residing in the States). .

⁵² See Wilkinson, *supra* n.____, at 425.

⁵³ 523 F.Supp. 120 (D. Mass. 1981).

subject to the State public trust, preserving public rights to access for fishing and navigation below the high water line. The Northern District of California followed this reasoning in *City of Alameda v. Todd Shipyards*,⁵⁴ holding that the federal government takes title to tidelands subject to public trust responsibilities, and may not convey such tidelands to a private party. Contrary to this result, another Northern District of California decision, *U.S. v. 11.037 Acres*,⁵⁵ held that under the Supremacy Clause of the Constitution,⁵⁶ the federal government condemns out all interests when it takes State land, include public trust interests.

Supreme Court cases applying public trust principles to the States have applied these principles both as limits on the disposition of Trust assets and as empowerment to enforce communitarian interests in these assets. Similarly, some federal cases have grounded federal powers over public trust resources and waters in public trust principles. Thus, a federal district court held that the federal government shares in the responsibility to protect public trust interests in wildlife, permitting it to sue for natural resource damages where an oil spill killed 10,000 migratory birds.⁵⁷ Other federal authorities have located federal control over use and disposition of navigable waters in the property clause of the Constitution, even in the absence of federal ownership of the underlying lands.⁵⁸

Despite this ambiguous precedential background, commentators have argued for application of public trust principles to federal actions involving public trust resources. Recent commentary has urged the extension of public trust principles as a limit on exploitation of fishery resources and aquaculture in ocean waters beyond the territorial sea.⁵⁹ Other commentators have urged application of public trust principles to federal programs as diverse as national parks administration,⁶⁰ and the broadcast radio spectrum.⁶¹

Obviously, the resolution of the last question – the provenance of public trust doctrine – has some bearing on the question whether the doctrine applies as a judicially enforceable limit on the scope of federal action. A public trust doctrine borne of state common law, or as an implied dormant commerce clause limit on the exercise of state power, would not pose any limits on the scope of permissible federal action. A public trust doctrine rooted in federal common law, or inherent limits of sovereignty enforceable as part of the basic constitutional political contract, should be federally enforceable. As

⁵⁴ 635 F.Supp. 1447 (N.D. Cal. 1986).

⁵⁵ 685 F.Supp. 214(N.D. Cal. 1988).

⁵⁶ U.S. Constitution, Art. VI, Sec. __, Cl. __.

⁵⁷ *In re Steuart Transportation*, 495 F. Supp. 38 (E.D. Va. 1980).

⁵⁸ *See* *United States v. California*, 332 U.S. 19, 22, 38-39 (1947); General Regulations for Areas Administered by the National Park Service and National Park System Units in Alaska, 61 Fed Reg. 35,133, 35,134 (July 5, 1996) (to be codified at 36 C.F.R. pts. 1, 13) (asserting property clause jurisdiction to regulate waters in National Parks where the United States does not hold title to submerged lands); *see generally* Turnipseed, *supra* n. __, at 43-44.

⁵⁹ *See* Turnipseed, *supra* n. __ (fisheries resources); Hope Babcock, Grotius, Ocean Fish Ranching, and the Public Trust Doctrine: Ride'em Charlie Tuna, 26 *Stanford Env. L. J.* 3, 54-60 (2007)(aquaculture).

⁶⁰ Peter Egan, Comment, Applying Public Trust Tests to Congressional Attempts to Close National Park Areas, *B.C. Envtl. Aff. L. Rev.* 717 (1998).

⁶¹ *See* Torres, *supra* n. ____ at 247-250; Patrick S. Ryan, Application of the Public-Trust Doctrine and Principles of Natural Resource Management to Electromagnetic Spectrum, 10 *Mich. Telecomm. Tech. L. Rev.* 285(2004).

noted above, this author believes public trust limits do inhere in sovereignty and are enforceable limits on federal action. But even if public trust doctrine is not a “hard” law enforceable limit on federal action, public trust principles may still be brought to bear on the acceptability and the interpretation of a cap-and-trade system of tradeable rights to the atmosphere’s greenhouse gas absorption capacity. Even when not applied as hard limits, public trust principles play a role in the construction and interpretation of putative grants of public trust assets. Thus, the Supreme Court in *Shively v. Bowlby* relied on public trust principles to find that Congress had not, through pre-statehood legislation, granted private rights to tidelands in Oregon. Similarly, some states, such as Massachusetts have adopted a public trust doctrine that is essentially procedural, requiring a “clear statement” for an effective legislative grant of private interests in public trust assets.⁶² Public trust principles might thus form a rule of construction for a cap-and-trade program, limiting the scope of any private rights obtained under such a program. Finally, even if not binding, public trust principles provide a useful metric to assess the appropriateness of a cap-and-trade program in light of the widespread acceptance of public trust concepts across cultures and across history.

C. DOES A FEDERAL PUBLIC TRUST DOCTRINE EXTEND BEYOND NAVIGABLE WATERS TO THE ATMOSPHERE?

Application of public trust principles as a hard limit on a federal GHG cap-and-trade program entails a conceptual expansion of the public trust doctrine as well as a transgovernmental expansion. Traditionally, the federal public trust doctrine has been applied solely to trust interests in navigable waters. Under English common law, public trust responsibilities were limited to tidal waters.⁶³ The United States Supreme Court extended the doctrine to include waters that were navigable but not tidally influenced, including the vast reaches of the Great Lakes and America’s freshwater river systems to the doctrine.⁶⁴ And, as discussed earlier, the Court extended the doctrine to include lands underlying waters that are tidal, but non-navigable, in *Phillips Petroleum*. No federal decision has yet made the leap from waters to other potential trust resources, at least in the absence of a statutory scheme incorporating trust principles.⁶⁵

State decisions, on the other hand, have extended public trust responsibilities well beyond the high tide mark, and well beyond common law trust interests in waters, fishing, and navigation. This expansion has been both physical and conceptual. Physically, States have expanded the application of public trust doctrine from the near shore, such as beach access, to water resources unrelated to navigation, to resources such

⁶² See e.g., *Gould v. Greylock Reservation Comm'n*, 350 Mass. 410, 215 N.E.2d 114 (1966).

⁶³ See *Arnold v. Mundy*, 6 N.J.L. 1, 12 (1821).

⁶⁴ See *Oregon ex rel. State Land Board v. Corvallis Sand & Gravel Co.*, 429 U.S. 363, 374 (1977); *Barney v. Keokuk*, 94 U.S. 324, 338 (1877).

⁶⁵ Cf. *Steuart Transportation*, *supra* (applying Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601); *Sierra Club v. U.S. Dep't of the Interior*, 398 F. Supp. 284 (N.D. Cal. 1975) (applying the doctrine to protect areas surrounding redwood forests based on the National Park System Act, 16 U.S.C. § 1 et seq. and Redwood National Park Act, 16 U.S.C. § 79a et seq.).

as public parkland having nothing to do with water at all.⁶⁶ Some States have gone even further, applying public trust principles to environmental and cultural heritage resources, such as the unique ecosystem of Mono Lake in California,⁶⁷ and archeological remains.⁶⁸ States also apply public trust principles to wildlife resources.⁶⁹

Along with this geographic expansion of public trust principles beyond the water's edge, States have expanded communitarian interests subject to the public trust beyond the immediate utilitarian interests in commercial navigation and fishing. Thus, courts have recognized the ecosystem service values of tidelands and wetlands as a public trust value,⁷⁰ as well as recreational interests in access to navigable waters.⁷¹ The leading case is the California Supreme Court decision in *Marks v. Whitney*, where the Court held that the reserved public trust interest precluded development of a marina in tidelands that had been granted to a private owner by the State. The court specifically recognized environmental services as public trust values:

The public uses to which tidelands are subject are sufficiently flexible to encompass changing public needs. In administering the trust the state is not burdened with an outmoded classification favoring one mode of utilization over another. . . . There is a growing public recognition that one of the most important public uses of the tidelands -- a use encompassed within the tidelands trust -- is the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area.⁷²

⁶⁶ See, e.g., *Matthews v. Bay Head Improvement Ass'n*, 471 A.2d 355 (N.J. 1984) (public access to dry-sand beach part of public trust right to access to water); *Friends of Van Cortlandt Park v. City of New York*, 750 N.E.2d 1050, 1055 (N.Y. 2001) (parks are "impressed with a public trust for the benefit of the people"); *In re Water Use Permit Applications*, 9 P.3d 409, 445-447 (Haw. 2000) (public trust doctrine applies to all water in the state), *aff'd in part and vacated on unrelated grounds in part by In Re Water Use Permit Applications*, 105 Haw. 1 (2004).

⁶⁷ *National Audubon Soc'y v. Superior Court (Mono Lake)*, 33 Cal. 3d 419, 658 P.2d 709, 189 Cal. Rptr. 346, cert. denied, 464 U.S. 977 (1983).

⁶⁸ *Wade v. Kramer*, 459 N.E.2d 1025 (Ill. App. Ct. 1984) (archeological remains subject to public trust protections).

⁶⁹ See *People v. Truckee Lumber Co.*, 48 P. 374 (Cal. 1897) (fish as public trust resources); *Ctr. for Biological Diversity, Inc. v. FPL Group, Inc.*, 83 Cal. Rptr. 3d 588, 591 (Cal. Ct. App. 2008) (public trust includes wild birds); see generally Michael C. Blumm & Lucas Ritchie, *The Pioneer Spirit and the Public Trust: The American Rule of Capture and State Ownership of Wildlife*, 35 *Env'tl. L.* 655, 693-96 (2005).

⁷⁰ See *Marks v. Whitney*, 6 Cal. 3d 251, 491 P.2d 374, 98 Cal. Rptr. 790 (1971); *Just v. Marinette County*, 201 N.W.2d 761, 769 (Wis. 1972).

⁷¹ See, e.g., *Adirondack League Club, Inc. v. Sierra Club*, 92 N.Y.2d 591, 706 N.E.2d 1192 (1998) (recreational use of stream previously used for commerce); *Borough of Neptune City v. Borough of Avon-by-the-Sea*, 294 A.2d 47, 54 (N.J. 1972) (recreational use of beach); *Marks v. Whitney*, 6 Cal. 3d 251, 259-60, 491 P.2d 374, 380, 98 Cal. Rptr. 790, 796 (1971) (trust purposes include hunting, bathing, and swimming); *Orion Corp. v. Washington*, 109 Wash. 2d 621, 640-41, 747 P.2d 1062, 1073 (1987), cert. denied, 108 S. Ct. 1996 (1988) (public trust interests include swimming, water skiing, and other recreational purposes);

⁷² 6 Cal. 3d. at 259-260.

These cases recognizing the ecosystem service values of public trust resources are particularly relevant to application of public trust principles to a cap-and-trade scheme. Just as the California Supreme Court considered the pollution control and habitat values of tidal wetlands to prevent development of those wetlands that would impair those public benefit functions, so might a court consider the overall carbon cycling functions of the global atmospheric ecosystem in assessing whether over-allocation of emissions rights would impair this ecological system.

These state court cases, as well as the origins of public trust doctrine, would support extension of public trust principles to include atmospheric resources. The state common law origins of the public trust doctrine trace the roots of the doctrine to the institutes of the Emperor Justinian; recall that Justinian's statement of the public trust principle specifically included "the air" among the assets held in common for the benefit of all mankind. While English common law may have limited its recognition of public trust resources to navigable tidal waters, United States decisions did not hesitate to extend the doctrine to non-tidal navigable waters based on the exigencies of the new world.

Moreover, the navigable waters development of public trust doctrine at common law was not necessarily a limit on the scope of potential trust assets. Public trust doctrine has been based on the idea that public trust assets were "*res communes*," that is, they were simply physically incapable of being converted to private ownership.⁷³ Once the *res communes* became susceptible to private ownership, but as yet unappropriated (so-called *res nullius*),⁷⁴ public trust limits on private ownership were called into play. Public trust limits on privatization of waters came into play as these assets were privatized. Public trust doctrine should naturally extend to previously unpossessable interests in the atmosphere as governments seek, through tradable emissions rights, to privatize this formerly *res communes*.

Indeed, while the Supreme Court has not explicitly applied public trust doctrine beyond its common law boundaries of tidal and navigable waters, it has recognized public trust-like rights in airspace. The federal public trust doctrine evolved, in part, from recognition of an implied federal navigational easement through navigable waters.⁷⁵ Sixty years ago, in *United States v. Causby*,⁷⁶ the Supreme Court recognized and posited a navigational servitude in the airspace above private property much like the navigational servitude applied by the public trust doctrine to waters overlying privately owned submerged lands. *Causby* held that a property owner could not enjoin aircraft overflights over his property, even though such a navigational servitude was certainly unknown at

⁷³ See generally Carol M. Rose, The Public Domain: Romans, Roads, and Romantic Creators: Traditions of Public Property in the Information Age, 66 Law & Contemp. Prob. 89 (2003).

⁷⁴ See *id.*

⁷⁵ See generally Benjamin Longstreth, Note, Protecting "The Wastes of the Foreshore": The Federal Navigational Servitude and its Origins in State Public Trust Doctrine, 102 Colum. L. Rev. 471, 471 (2002); Patrick Deveney, Title, Jus Publicum, and the Public Trust: An Historical Analysis, 1 Sea Grant L.J. 13 (1976); Glenn J. MacGrady, The Navigability Concept in the Civil and Common Law: Historical Development, Current Importance, and Some Doctrines That Don't Hold Water, 3 Fla. St. U. L. Rev. 511 (1975); James R. Rasband, The Disregarded Common Parentage of the Equal Footing and Public Trust Doctrines, 32 Land & Water L. Rev. 1 (1997); Michael L. Rosen, Public and Private Ownership Rights in Lands Under Navigable Waters: The Governmental/Proprietary Distinction, 34 U. Fla. L. Rev. 561 (1982); Jan S. Stevens, The Public Trust: A Sovereign's Ancient Prerogative Becomes the People's Environmental Right, 14 U.C. Davis L. Rev. 195 (1980).

⁷⁶ 328 U.S. 256 (1946).

common law. *Causby* thus represents the evolution of public-trust-like principles to adapt to technological and social changes that made usable what was previously unpossessable (and un-occupiable).

As technology and a cap-and-trade likewise make aspects of the atmosphere subject to private ownership, public trust doctrine should similarly evolve to include these interests in the public trust responsibilities of the sovereign creating the system of private rights.

PUBLIC TRUST VERSUS CAP AND TRADE

In its broadest conception, then, public trust doctrine may be a legal handle for principled objections to the creation of tradable property rights in air pollution allocations. Professor Kirk Junker has suggested (briefly) that public trust doctrine might be a means of enforcing ethical objections to emissions trading schemes.⁷⁷ Professor Gerald Torres, in his 2001 Garrison Lecture at Pace Law School, relied on public trust principles to argue that under a cap-and-trade scheme, government must not give away pollution allocations, but, as trustee, must account for the “profits” implicit in the sale or transfer of such allocations by collecting the market value of such allocations.⁷⁸

Emperor Justinian included “the air” in his list of common resources absolutely not subject to private ownership. At the extreme, a public trust argument against emissions trading would hold that tradable pollution rights are simply illegal as a violation of the public trust in the air resources, and the absolute inalienability of this public trust resource.

Must we then reject the cap-and-trade solution to global warming as inconsistent with fundamental, enforceable principles of public trust? Fortunately for pragmatists, the mature public trust doctrine that is applied in the United States would not seem to preclude the grant of tradable emission rights. It does, however, severely limit the extent of such rights in ways that may proscribe any of the cap-and-trade proposals currently on the table.

As the above review of the doctrine’s development suggests, public trust doctrine has never been applied in the United States as an absolute prohibition against alienation of public trust resources. As the *Appleby* case made clear, legislative grants of land under water and private filling of these waters to create developable land is permissible so long as the rights granted do not substantially interfere with public trust values. Rather, in the *Illinois Central* case as well as others, the public trust doctrine has been applied only to preclude the alienation of a substantial portion of the public trust asset to private hands. Like the converse situation of public regulation of private lands, grants of public trust assets are invalid only when they go “too far.”⁷⁹

⁷⁷ See Junker, *supra n. __*, at 162.

⁷⁸ See Torres, *Who Owns the Sky?*, *supra n. ____*.

⁷⁹ See *Pennsylvania Coal v. Mahon*, 260 U.S. 393, 415-416 (1922); *cf.* *Penn Central Transportation Co. v. City of New York*, 438 U.S. 104 (1978) (establishing balancing test for determining when public regulation constitutes a taking).

So, when does the purported grant of a public trust resource go too far, and offend the public trust doctrine? I believe that there is a legacy principle at work here – an attempt to alienate public resources goes “too far” when it deprives future generations of essential, irreplaceable resources. Thus, the grant of a limited area under water to build a pier, or to fill land for a development, is not a violation of public trust (*Appleby*), but grant of the entire shoreline of a city (as in *Illinois RR*), depriving future generations of any opportunity to develop piers and navigation facilities, is. The grant of water rights in general does not violate public trusts, but the grant of water rights to the extent that a unique and irreplaceable natural resource like Mono Lake will be destroyed, does.

Indeed, the Mono Lake decision, *National Audubon Society v. Superior Court, Alpine County*, hints at an instructive analogy. Even while rejecting an absolute application of public trust principles, in favor of a balancing test, the Court noted that “The state must have the power to grant nonvested usufructory rights to appropriate water even if diversions harm public trust uses” in describing the water rights that might be validly conveyed. This reference to usufructory rights suggests that, although the State may allocate the sustainable fruits of public trust assets, it may not allocate rights in the underlying resource itself. To put the matter in conventional trust terms: the sovereign, as trustee, may distribute the income of public trust assets, but may not sell off the corpus.

This view of the public trust doctrine brings an element of sustainability and intergenerational equity to the limits imposed by the public trust. The sovereign may alienate portions of the resources held in public trust, but may not do so to the extent that the alienation interferes with the essential legacy attributes that make the resource a public trust.

A. *The Usufructory Thread in Public Trust Law*

According to Black’s Law Dictionary, the term “usufruct” means “The right of enjoying a thing , the property of which is vested in another, and to draw from the same all the profit, utility, and advantage which it may produce, *provided it be without alterin substance of the thing.*”⁸⁰ The definition of usufruct thus has a built in sustainability principle: the holder of usufructuary rights can only exploit the fruits of the property, and must not under any circumstances impair the productivity of the underlying asset. Usufructuary rights should thus be sustainable in perpetuity. The interest is analogous to the interest of an income beneficiary of a conventional trust: the trustee may pay out the “profits” of the trust, but must not invade the corpus.

This term of trust law has been used to describe the limits on exploitation of public trust assets since the founding of the United States. In a 1789 letter to James Madison, Thomas Jefferson rejected the possibility that one generation might bind or compromise the interests of future generations, insisting that “I set out on this ground, which I suppose to be self-evident, 'that the earth belongs in usufruct to the living' . . . For if [a member of the present generation] could, he might, during his own life, eat up the usufruct of the lands for several generations to come, and then the lands would belong to

⁸⁰ Black’s Law Dictionary (__Ed. West 200_) at ____ (emphasis added).

the dead, and not to the living, which would be the reverse of our principle..”⁸¹ Similarly, the first New World judicial decision establishing public trust principles, *Arnold v. Mundy*, likewise invoked the usufruct principle. According to *Mundy*, public trust assets “are things in which a sort of transient usufructuary possession, only, can be had.”⁸²

More recent authorities, in addition to the Mono Lake decision, continue to invoke the idea that only the usufruct of public trust assets may be allocated to private interests. Thus, in declaring water resources generally to be subject to public trust principles, the Hawaii Supreme Court explicitly relied on “the king’s authority to ‘enforce the usufructs of the land for the common good.’”⁸³ Relying on this principle of usufruct, the Hawaiian Supreme Court subsequently held that the grant of water rights was a grant of the usufruct only, and that ownership of the water in the streams remained in the State, as a public trust asset for the common benefit.⁸⁴

B. *The Sustainability Principle Underlying Public Trust*

These invocations of the usufruct principle in public trust law reveal a larger principle of sustainability and intergenerational equity underlying the administration of public trust assets. Indeed, the root of the term “usufruct” itself represents a form of intergenerational equity, as a “usufructuary” title to land at Roman law was a life estate only.⁸⁵ Other public trust decisions in the United States similarly incorporate sustainability principles as limits on the scope of private rights in public trust assets, including even interests in land. Thus, in applying public trust principles to uphold limits on the development of wetlands, the Wisconsin Supreme Court explicitly referred to sustainable development practices:

Is the ownership of a parcel of land so absolute that man can change its nature to suit any of his purposes? The great forests of our state were stripped on the theory man’s ownership was unlimited. But in forestry, the land at least was used naturally, only the natural fruit of the land (the trees) were taken. The despoliation was in the failure to look to the future and provide for the reforestation of the land. An owner of land has no absolute and unlimited right to change the essential natural character of his land so as to use it for a purpose for which it was unsuited in its natural state and which injures the rights of others. The exercise of the police power in zoning must be reasonable and we think it is not an unreasonable exercise of that power to prevent harm to public rights by limiting the use of private property to its natural uses.⁸⁶

⁸¹ Thomas Jefferson to James Madison, September 6, 1789, reprinted in XV *The Papers of Thomas Jefferson*. (Julian P. Boyd et al., ed. Princeton University Press) at 392-98.

⁸² 6 N.J.L. at 71.

⁸³ *Robinson v. Ariyoshi*, 65 Haw. 641, 675, 658 P.2d 287, 311 (1982) (citing Hawaii Laws of 1847 at 81).

⁸⁴ *McBryde Sugar Co. v. Robinson*, 25 1339 187

⁸⁵ N. Stephan Kinsella, *A Civil Law to Common Law Dictionary*, 54 La. L. Rev 1265 (1994) (definition of “life estate” is “usufructuary” in civil law).

⁸⁶ *Just v. Marinette County*, Wisconsin, 201 N.W.2d 761, 769 (Wis. 1972).

The Mono Lake decision likewise invoked environmental heritage resources as an interest served by the public trust doctrine and required that these heritage interests of future generations, holding that

The public trust is more than an affirmation of a state power to use the public property for public purposes. It is an affirmation of the duty of the state to protect *the people's common heritage* of streams, lakes, marshland and tidelands, surrendering that right of protection only in rare cases where abandonment of that right is consistent with the purposes of the trust.⁸⁷

These decisions invoking the principles of usufructuary rights and “common heritage” demonstrate that there is a sustainability principle at work in public trust doctrine. Actions of a legislature or state agency at any given time must not deprive future generations and legislatures of their freedom of action, or of their right, equal to the current generation, to sustainable fisheries, commercial navigation, and (according to later decisions such as *Marks* and *Marinette County*) a sustainable ecosystem.⁸⁸ The Supreme Court made this intergenerational limit explicit in *Illinois Central*, stating, “The legislature could not give away nor sell the discretion of its successors in respect to matters, the government of which, from the very nature of things, must vary with varying circumstances.”⁸⁹ Other courts have made this intergenerational aspect of the administration of public trust assets similarly explicit; one New York court upheld government regulation of groundwater, by citing Edmund Burke to the effect that the government was “merely discharging [its] obligation under the societal contract between ‘Those who are dead, those who are living and those who are yet to be born.’”⁹⁰

This conflict between the interests of the current generation, and those of future generations, is well known in trust law. Trustees routinely must preserve trust assets for future beneficiaries even against the demands of current beneficiaries.⁹¹ This same concern for intergenerational equity underlies the moral (and, to some extent, legal)

⁸⁷ 33 Cal. 3d 419, 441, 189 Cal. Rptr. 60-361, 658 P.2d at 724 (emphasis added).

⁸⁸ Several commentators have likewise argued that ecosystem sustainability principles underpin public trust doctrine (or should do so). See J.B. Ruhl & James Salzman, Ecosystem Services and the Public Trust Doctrine: Working Change from Within, 15 Se. Envtl. L.J. 223, 228 (2006); Turnipseed, *supra* n. ___ at n.97; Babcock, *supra* n. __ at ___ (n.102); Mary Christina Wood, Protecting the Wildlife Trust: A Reinterpretation of Section 7 of the Endangered Species Act, 34 Envtl. L. 605, 612 (2004); Donna Christie, Marine Reserves, the Public Trust Doctrine and Intergenerational Equity, 19 J. Land Use & Envtl. L. 427, 433 (2004); Mary Christina Wood, Advancing the Sovereign Trust of Government to Safeguard the Environment for Present and Future Generations (Part 1): Ecological Realism and the Need for a Paradigm Shift, 39 Envtl. L. 43 (2009).

⁸⁹ *Illinois Central*, 146 U.S. at 460; see also *City of Alameda v. Superior Court of Alameda County*, 26 Cal. 3d 515 (1980) (legislature cannot give away discretion so as to leave future legislature with no trust resources to work with).

⁹⁰ *W.J.F. Realty Corp. v. State*, 672 N.Y.S.2d 1007, 1012 (N.Y. Sup. Ct. 1998) (quoting Edmund Burke, Selected Writings and Speeches of Edmund Burke 318 (1949)).

⁹¹ See generally Jack H. Archer et al., The Public Trust Doctrine and the Management of America's Coasts 3, 38-39 (1994); see also Restatement (Third) of Trusts § 79 cmt. c (2007) (duty to balance competing interests of current and future beneficiaries).

arguments for limiting greenhouse gases. Such limits would be construed as necessary to preserve a hospitable planet for future generations who will otherwise suffer the effects of excessive greenhouse gas generation without enjoying the economic benefits.⁹² The Framework Convention on Climate Change, explicitly relies on principles of intergenerational equity as the basis for action limiting greenhouse gas emissions: “Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.”⁹³ If, as appears to be the case, public trust principles encompass sustainability and intergenerational equity concerns, and if, as also appears likely, a government system of property rights in atmospheric resources implicates public trust concerns, how then should public trust analysis respond to a greenhouse gas cap and trade system?

C. Application of a Sustainability Limit on Allocation of GHG Emissions Rights Through a Cap-and-Trade Scheme

Government allocation of tradable emissions rights in GHG pollutants invoke public trust concerns as such a system of tradable rights operates like property rights in the global atmosphere – a public sale of the “air” specifically contemplated and rejected in the Justinian concept of public trust. But the United States’ application of public trust doctrine generally does not preclude the sale of public trust assets to private interests. Rather, such a sale is prohibited only when it deprives the public of an entire public trust resource or deprives future decision makers of the same resources and choices enjoyed by the current decision makers. In this latter thread, public trust principles incorporate notions of sustainability. Application of this view of public trust to proposed cap-and-trade programs for GHG emissions leads to interesting results. If sustainability is indeed an element of the public trust doctrine, then no system of allocations can be valid if it exceeds a sustainable level of global emissions that avoids catastrophic climate change.

1. Public Trust Principles Do Not Preclude All Cap-and-Trade Schemes

At the outset, it is clear that the public trust doctrine prevalent in the United States should not preclude all forms of cap-and-trade systems for GHG. While there remains a

⁹² See generally, e.g., James C. Wood, Intergenerational Equity and Climate Change, 8 GEO. INT’L ENVTL. L. REV. 293 (1996); Edith Brown Weiss, Climate Change, Intergenerational Equity and International Law (1987), reprinted in *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity* 345, 345 (1989). As future generations do not enjoy any representation in the current day legislature and political system, the interests of unrepresented future generations in preventing catastrophic climate change impacts have a strong argument for judicial intervention in the political process under a “representation reinforcement” theory of judicial review. See generally John Hart Ely, *Democracy and Distrust* (1980); Matthew Tuchband, Note, The Systemic Environmental Externalities of Free Trade: A Call for Wiser Trade Decisionmaking, 83 Geo. L.J. 2099 at n.33 (1995).

⁹³ United Nations Framework Convention on Climate Change, May 9, 1992, S. Treaty Doc. No. 38, 102d Cong., 2d Sess. (1990).

principled objection to private ownership of the “air,” the Supreme Court and all of the States have long made clear that limited grants of public trust resources are permissible. Thus, under cases such as *Appleby* and even the Mono Lake decision in the California Supreme Court, public trust principles may limit the scope of a state grant of public trust interests, but it does not preclude such a grant altogether. As the California Supreme Court put it, “The state must have the power to grant nonvested usufructory rights.”⁹⁴ The key to consistency of such a grant with the public trust is its sustainability: does the grant allocate to current interests such a large portion of the public trust resource that it deprives future decisionmakers of the equivalent environmental benefits enjoyed by the current generation.

2. *Public Trust Principles and Overallocations*

Under this sustainable usufruct view of the public trust, all of the cap-and-trade proposals currently under consideration would be unacceptable, since all contemplate phase-in periods during which tradable emissions allocations would exceed the levels determined by global scientific consensus to be necessary. (The IPCC concluded that a 50 – 85% reduction is necessary by 2050; more recent reports suggest that even greater reductions will be required). Under the first implementation period of the Kyoto Protocol (2008-2012), emission allocations were based on achieving only a 5 to 8% reduction from 1990 levels. The Regional Greenhouse Gas Initiative, of which New York State is a part, contemplates a mere 10% reduction from 1990 levels at power utilities by 2019. The failed Lieberman-Warner climate bill would have had phased emissions reductions of from 4% in 2012 to 71% in 2050. The American Clean Energy and Security Act of 2009, passed by the House of Representatives and awaiting action by the Senate, similarly contemplates reductions of 3% below 2005 levels by 2012 and 17% below 2005 levels by 2020.

Each of these cap-and-trade schemes contemplates decades of allocation of GHG emissions rights that are far in excess of the IPCC determined maximum sustainable emissions. In essence, the sovereign “trustee” would invade the public trust “corpus” to make distributions in excess of the sustainable yield of the atmospheric “trust.” By allocating these quantities of GHG emissions to the current generation of emitters – and by explicitly demanding that the 2050 generation get by with vastly reduced GHG emissions *and* cope with the climate changes induced by the current generation’s emissions -- this overallocation of GHG emissions rights deprives future legislatures of the choices enjoyed by the current legislature just as surely as the grant of the entire Chicago waterfront to the railroad deprived future Illinois legislatures of the flexibility of making appropriate decisions about commerce and navigation to serve the public interest.

As these excess allocations violate the legacy preservation principle that inheres in the public trust doctrine, no scheme with such excess allocations should be valid. As public trust limits inhere in the very nature of sovereignty, a court that reviews such congressional action should strike it down as beyond the powers of the national

⁹⁴ *National Audubon Soc’y v. Superior Court (Mono Lake)*, 33 Cal. 3d 419, 658 P.2d 709, 189 Cal. Rptr. 346, cert. denied, 464 U.S. 977 (1983).

legislature, just as the courts struck down congressional attempts to draft state officials in enforcement of federal programs as beyond the inherent limits of sovereignty.⁹⁵

It may be objected that a limited system of cap and trade is better than no system of regulation at all. This is no answer to the principled application of public trust limits to a proposed system of allocated private ownership of the carbon carrying capacity of the global atmosphere. Moreover, it is by no means self-evident that a system of overallocation of resource exploitation rights is more resource protective than a system without limits. The experience with the Magnuson-Stevens Fisheries Act provides a close analogy: that act took a classic public trust resource (fisheries) that, like the atmosphere was previously considered *res communes* (not susceptible of private ownership) and, like every cap-and-trade proposal on the table, granted private allocations of the resource far in excess of the carrying capacity of the fishery. The result has been the collapse of the Atlantic ground fisheries as holders of privatized allocations claim a vested interest in maintaining current allocations.⁹⁶

Applying a public trust usufruct principle to the permissible scope of privatized allocations of a public trust resource such as the global atmosphere, any cap-and-trade program that contemplates allocations in excess of the sustainable global carrying capacity for greenhouse gas emissions thus fails.

3. *Public Trust as an Interpretive Principle Precluding Vested Rights*

Even if public trust doctrine does not present a “hard,” enforceable prohibition against a cap-and-trade system with excess allocation of emissions rights, public trust principles may still present an interpretive principle that will limit the scope of the rights that private parties holding emissions rights may assert. One of the principled objections to cap-and-trade programs is the possibility that such private “rights to pollute” might, like other forms of property, become vested over time so that government could no longer restrict emissions rights without paying compensation for taking the private property created by the allocation scheme.⁹⁷ Some commentators have made this argument --that tradable emissions rights are “property” that may not be abrogated without compensation under the takings clause.⁹⁸

A system of allocated GHG emissions rights might create “property” based claims for compensation in two ways. First, an allocation scheme might create an expectation of continued allocations of emissions rights. Second, and perhaps more problematic, cap-and-trade schemes that permit “banking”⁹⁹ may create a property interest in the “banked”

⁹⁵ See *Printz v. United States*, *supra*.

⁹⁶ See generally Harry N. Scheiber and Christopher J. Carr, From Extended Jurisdiction to Privatization: International Law, Biology, and Economics in the Marine Fisheries Debates, 1937-1976, 16 Berkeley J. Int'l L. 10, 53-53 (1998); Turnipseed, *supra* n. ___ at 53-54; Kathryn J. Mengerink, Comment: The Pew Oceans Commission Report: Navigating a Route to Sustainable Seas, 31 Ecology L.Q. 689, 708 (2004).

⁹⁷ See generally Justin Savage, Note, Confiscation of Emissions Reductions Credits: The Case for Compensation Under the Takings Clause, 16 Va. Envtl. L.J. 227 (1997); Susan A. Austin, Comment: Tradable Emissions Programs: Implications Under the Takings Clause, 26 Envtl. L. 323 (1996); Yvonne F. Lindgren, Note, The Emissions Trading Policy: Smoke on the Horizon for Takings Clause Claimants, 18 Hastings Const. L.Q. 667 (1991).

⁹⁸ See *id.*

⁹⁹ Emissions “banking” allows holders of emissions rights to “bank” and reserve these emissions credits for use (or sale) in later years. See generally Hahn and Lester, *supra* n. ___ at 129-130.

emissions credits, even if it later becomes apparent that the banked emissions rights will completely overwhelm measures necessary to avoid catastrophic global warming.

Public trust doctrine provides an interpretive principle that should avoid claims of vested property rights subject to compensation. Even if public trust principles are not an absolute limit on sovereign power to alienate trust resources, public trust cases have consistently required that legislative actions claimed to have alienated public trust assets to reflect an unambiguous intent [??]. Thus, in one of the leading State public trust decisions, the Massachusetts Supreme Judicial Court held that unique state parkland could not be converted to uses inconsistent with the trust "without plain and explicit legislation."¹⁰⁰ Similarly, in *Shively v. Bowlby*, the United States Supreme Court applied public trust principles to limit the scope of riparian ownership rights granted by a pre-statehood congressional grant in Oregon territory, presuming that Congress would not act to deprive future states of public trust assets by granting sub-tidal lands to private owners.

Similar application of public trust principles should preclude any claim that tradable emissions rights allocations, including "banked" emissions rights, create a form of property for which compensation would be required if future GHG allocation schemes require limits more stringent than those adopted by a particular cap-and-trade system.

CONCLUSION

A cap-and-trade system designed to limit or control global greenhouse gas emissions implicates public trust principles, since such a system would create private rights in atmospheric resources that are contrary to the Justinian concept that the air is not subject to private ownership. While federal public trust doctrine has so far been applied only to navigable and tidal waters, the federal public trust doctrine draws its roots from the Justinian concepts and inherent principles of sovereignty, which support extension of the doctrine of non-traditional public trust assets such as the atmospheric carrying capacity for greenhouse gases. A federal public trust doctrine would not preclude the establishment of a cap-and-trade program for GHGs, as public trust principles have not been applied as an absolute bar to the privatization of portions of public trust assets. There is a sustainability principle underlying public trust doctrine, however, that precludes any cap-and-trade system that allocates emissions rights in excess of those that can sustainably be absorbed by the climate system. As all the cap-and-trade schemes so far implemented (or considered) include a phase-in period during which emissions rights exceed sustainable levels, all of these proposals violate public trust principles.

¹⁰⁰ *Gould v. Greylock Reservation Comm'n*, 350 Mass. 410, 419, 215 N.E.2d 114, 121 (1966). For discussions of the public trust clear statement rule, *see generally* 1 W. RODGERS, JR., ENVIRONMENTAL LAW: AIR AND WATER § 2.20, at 164 (1986); Michael C. Blumm, Public Property and the Democratization of Western Water Law: A Modern View of the Public Trust Doctrine, 19 ENVTL. L. 573, 587-589 (1989).