

Applying the Alaska model in a Resource-Poor State:

The Example of Vermont

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“The meek shall inherit the Earth, but not its mineral rights”

-J. Paul Getty¹

Sovereign Wealth Funds (SWFs) are typically found in States or countries with great oil wealth such as Abu Dhabi, Saudi Arabia, Norway, Alberta, and Alaska. The Alaska model might be perceived to apply only to states with oil. Yet SWFs can be based on other valuable resources such as copper (Chile), diamonds (Botswana), or even phosphates (Kiribati). In the United States, the state of New Mexico has three SWFs, the Land Grant Permanent Fund (mineral resources and surface land), Severance Tax Permanent Fund (minerals), and Tobacco Settlement Permanent Fund. Wyoming has a fund from coal, oil, natural gas, oil shale and other minerals, and Texas has a fund based on royalties and rents from oil, gas and valuable minerals on public lands.² Of the fifty or more SWFs around the world, only Alaska's pays a small dividend or basic income to

residents. The perplexing reasons for this are further explored by Angela Cummine in this volume.

One might get the mistaken impression that only oil or resource-rich states can afford such a fund and dividend. Every state or country has substantial untapped revenue available because many natural resources and social common assets (discussed below) have been given away by government to private businesses. Businesses then sell them back to the public capturing not only the value they add with their effort, but also the scarcity value or economic rent (discussed below) of the assets given to them by public authorities.

This chapter demonstrates the potential of a basic income from common asset wealth in a state with very little resource wealth at all, the U.S. state of Vermont. Vermont is a small, sparsely populated state of about 620,000 people. It has few valuable natural resources: no fossil fuels, no precious metals, no gemstones, and no minerals except for calcium carbonate (marble), talc, and slate. Although this chapter is specific to Vermont, it shows that other resource-poor states and nations have greater potential for an asset-financed basic income than one might expect. They just have to reclaim sovereignty over their assets that are often given away or stolen. For example, Bolivia is currently capitalizing on its lithium after having 45,000 tons of silver taken from the Cerro Potosi (mountain of silver) by the Spanish Empire. The prior export of most fishing profits out of Bristol Bay in Alaska motivated Governor Jay Hammond to create the Permanent Fund Dividend (PFD) for Alaskans.

The findings presented here are from a study of the value of common asset wealth in Vermont. The author led a team of student researchers who conducted the study at the

University of Vermont in 2008. Each part of the study estimates the rental value of one of Vermont's common assets and examines how much of that value is being captured by current taxes and fees. Precise estimates of resource value are not always available. When possible, we consider more conservative and more generous estimates of the rent available. Thus we could report four figures: a low and high estimate of the total value of natural resource and a low and high estimate of the untaxed portion of the value of natural resources. But trying not to bowl you over with too many numbers, each section reports only two numbers: the low estimate of the untaxed portion and the high estimate of total resource value. This will give readers an idea of the range of possibilities. The smaller figure is more useful for Vermont public policy, and the larger figure is more relevant for other resource poor areas considering a dividend on the Alaska model.

The study finds (Table X.1) that a conservative estimate of the yearly rental value of Vermont's privately and publicly held common assets is about \$2.01 billion. Of that about \$790 million is captured by current taxes and fees, mainly the land portion of statewide property taxes. Therefore, about \$1.2 billion of *additional* revenue would be available in Vermont each year if common assets were rented out instead of given away. That's enough for a \$1,972 dividend for every Vermonter. That is nearly \$8,000 for a family of four—about the same size as Alaska's Permanent Fund Dividend.

Our highest estimate of common asset value of Vermont is \$6.45 billion (28.31 percent of Vermont's GDP). If *all* of that revenue were devoted to a dividend, it could be as large as \$10,348. That is over \$40,000 for a family of four. About 18 percent of the difference between these two estimates is accounted for by the \$790 of resource rent per person that is already being taxed by Vermont. The rest of the difference is accounted for

by the conservativeness of the estimates of resource value. Of course raising the dividend to this level would require the state to find other sources of revenue to support programs currently funded from some of these sources. Subtracting out the already-taxed portion of resource revenue from the high estimate would produce a dividend in the neighborhood of \$8,000 per year. But the figure of \$10,348 shows how much economic value each year is attributable to the value of common assets.

This chapter is about *how large* a dividend can be funded by rents on common assets. It is not about *why* rents on common assets should be captured and returned to the people, although section 1A gives a brief justification. Several chapters in this book and its companion volume make such arguments (especially essays by Widerquist and Howard, Goldsmith, and Carter in Widerquist and Howard 2012; Hartzok in this volume). Many other books and articles present good arguments for collection of revenue on common assets and for payment of dividends. I refer the reader especially to *Capitalism 3.0* by Peter Barnes, because it inspired this study.

Before Part Two goes through and calculates the rental value of each of Vermont's common assets, Part One discusses the following background issues: the definition of common assets, economic rent, and public trust resources. Part Three puts together the financial totals.

1. Background issues

A. What are common assets and how can they be valued?

Common assets are those things we legally or morally own in common; they are created by nature or by society as a whole. No individual or company produced them, and

therefore, none can justifiably claim private ownership of them. They include such things as water, clean air, minerals, public forests, fish and wildlife, broadcast spectrum, land value, the monetary and financial system, Internet, etc.³ Many of these are surprisingly valuable assets. Urban land values are often as valuable as oil, as is the broadcast spectrum.⁴

There are many theories and laws that justify public ownership of natural and social assets. Most classical economists including David Ricardo, Adam Smith, John Stuart Mill, Thomas Paine, and Henry George, said that the earth was a common inheritance, while the products of labor and capital investment should be private. For example John Stuart Mill said, “The essential principle of property being to assure to all persons what they have produced by their labor and accumulated by their abstinence, this principle cannot apply to what is not the product of labor, the raw material of the earth.”⁵

The Public Trust Doctrine goes back to the Roman Institutes of Justinian, which assured the citizens of Rome that by the law of nature these things are common to all mankind. Forms of common wealth that have historically been protected by Roman law or in the Magna Carta include the air, running water, fisheries, forests, the sea, and the shorelines. Laws consequently protected the accompanying common ability to hunt wild animals for food; to gather firewood, building materials, and medicinal herbs; and to graze livestock.⁶ This property was called *res communes* (common property) as distinguished from *res publica* (state property) or *res privitae* (private property).⁷ The Public Trust Doctrine, as applied through English common law, was incorporated into the common law of the United States, and provides that public trust lands, waters, and living resources in a state are held by the state in trust for the benefit of all the people.

B. What is the theory of economic rent?

Economic rent is the return to an asset over and above the cost of risk, labor, capital, and normal profit. This economic rent is the return to the resource or asset itself, beyond the cost of producing or extracting it, and is the proper source of revenue for a common asset trust fund paying a basic income dividend. Economic rent was originally explained by Economist David Ricardo (Ricardian rent) as the excess return to some agricultural land—due to its favorable characteristics such as soil fertility, rainfall, access to markets, etc.—from the same effort compared to the output of less productive land.⁸ The term economic rent has been expanded to include all unearned income from ownership of a resource, from a monopoly, from scarcity, or any other reason resulting in unearned excess profits not due to work, risk, or enterprise. It is also defined as the excess revenue over and above what it takes for a business to bring a product to market.⁹

A simple example of economic rent is the 2008 run-up in oil prices. It has been estimated that oil from the most expensive wells in deep ocean water cost about \$60-80 per barrel to extract including all other costs and normal profit.¹⁰ Easier-to-extract oil costs much less. Gregg Erickson has data from Alaskan oil companies indicating that the average cost of Prudhoe Bay extraction is \$20/barrel.¹¹ At the 2008 world price of \$147 per barrel, Alaskan oil companies on average received economic rent of \$127 per barrel, not including royalties or taxes. The most expensive deepwater wells still received \$67-87 in economic rent. Their “windfall profits” are economic rents. In the democratic theory of rent governments maximize their collection of rent to benefit the public, while

in the liberal theory of rent, public resources are made private and rent remains in private hands.¹² This chapter assumes the democratic theory of rent is applied.

C. Legal and Political Issues

Economic rent on natural and social assets provides a funding mechanism for any state or country to capitalize its assets for an SWF and dividend. Some assets are extremely valuable, and could be equivalent to or greater than oil in Alaska on a per capita basis: the broadcast spectrum, financial markets, atmosphere, water, and land value for example. Laws differ for each resource. The atmosphere has historically been an open-access resource, but this is rapidly changing due to climate change. Land rent in most countries has been retained privately resulting in huge periodic asset bubbles that disrupt economies when they crash. Broadcast spectrum by law often belongs to the public (as it does in the United States under the Federal Communication Act of 1934) but has usually been given away by government in collusion with broadcasters. Surface water has a long tradition of being considered a public trust resource, while ground water is a public trust resource in some U.S. states. The additional rent that can be captured on common assets, therefore, will vary according to the legal status of the asset.

D. Renewable or non-renewable?

Some common assets are renewable and some are not. The only non-renewable resource used in our Vermont estimate was minerals. It makes sense to create permanent funds from non-renewable resources in order to maintain a fund for future generations when the resource runs out. This was the original purpose of the Alaska Permanent Fund. Renewable resources like the broadcast spectrum or land value could generate rent in

perpetuity and it may not be necessary to create a permanent fund. However, one reason to create a fund even from renewable resources would be to provide a revenue stream that is not as subject to the business cycle, and could provide counter-cyclical, stable revenue when rent declines in an economic slowdown. Distribution of revenue from common assets directly to the public has many advantages including fairness, efficiency, and freedom. The marginal benefits are greatest to the lowest income people, yet no “Robin Hood” transfer payments are required.

E. The origin of this study

In a 2004 course on Green tax revenue, the author proposed the concept of a Common Asset Permanent Fund in Vermont, based on Barnes’s Sky-Trust model¹³. During the Vermont legislative session of 2007, State Senator Hinda Miller introduced a bill embodying the principles of the Alaska model using common asset revenue. The bill was written by legislative counsel Al Boright and was entitled the Vermont Common Assets Trust Fund Bill: S.44¹⁴. Numerous co-sponsors signed on. Although the bill didn’t make it out of committee, concepts from the bill were considered in a groundwater bill and an all-fuels efficiency bill. During a debriefing meeting with David Bollier in September 2007, legislators who worked on S.44 believed they needed more financial details and requested information about potential revenue from common assets. As a response to this request, the study cited here was conducted.¹⁵ The bill was reintroduced in 2011 by representative Chris Pearson as H.385. In keeping with the Public Trust Doctrine, part of the bill reads:

As society moves into modern times, the list of wealth that should belong to the people in common because the wealth was inherited or created together, and therefore should be preserved in the common interest has expanded now logically to include natural wealth such as undisturbed habitats, entire ecosystems, biological diversity, waste absorption capacity, nutrient cycling, flood control, pollination, raw materials, fresh water replenishment systems, soil formation systems, and the global atmosphere; and also to include socially created wealth such as our legal, political, and monetary systems, universities, libraries, science and technology, the Internet, transportation infrastructure, the radio spectrum, and city parks....In the case of public trust resources, individuals should be limited to uses that do not deplete the capital of the assets, but that are consistent with the commonwealth being available for the enjoyment of future generations.¹⁶

The following section summarizes the findings of our valuation of common assets in Vermont.

2. Calculation of rent on natural and social assets

The sections in this part of the chapter explain how we tabulated estimates of the revenue available in Vermont by calculating economic rent on natural and social assets. Without having business cost data it is very difficult to calculate economic rent to any exact degree. Business considers this information proprietary, and will be reluctant to divulge the data. Also, they prefer to be taxed on net income, which allows them to deduct all their costs as well as engage in transfer pricing to low tax countries allowing them to evade corporate income taxes.¹⁷ These figures are rough estimates for discussion

purposes. More exact calculations should be done by revenue departments when putting this system into practice. For some of them it will be impossible to know the exact value in advance. We cannot know how much revenue will be produced by an auction market for carbon emissions or the broadcast spectrum until we hold the auction.

We believe the figures are reasonable, showing the feasibility of the common assets approach. We chose categories according to interests of individual researchers. In the category of natural assets we researched air emissions, fish and wildlife, forests, ground water, surface water, minerals, broadcast spectrum, and wind turbine potential. In the category of socially created assets we researched land value, the Internet, and the monetary and financial system. We did not include patents, medical research, or other proprietary information due to a limited number of student researchers. This could have added to the revenue estimate, since medical research is mostly government funded. For example Prozac, Taxol, Capoten, AZT, and Xalatan were all the results of government funding,¹⁸ yet the public receives no royalty payments.

A. Natural Assets

Air (atmospheric sink)

The privilege of dumping pollution into the atmosphere as a sink for waste is still free in most places. This is a subsidy to polluters. Carbon and other greenhouse gasses can be reduced by a carbon tax or by a cap and permit system, which establishes fees for the emission of CO₂ into the atmosphere or the introduction of carbon fuels into the economy. Revenue from such policies can contribute to SWFs and dividends anywhere in the world.¹⁹

There is not yet a clear market for carbon emissions. Therefore, several different sources could be used to estimate the value of carbon costs.

The European Union Environmental Trading System (EUETS) has a mandatory cap and trade system in place for power plants and industrial CO₂ emitters. Vermont is currently enrolled in the Northeast Regional Greenhouse Gas Initiative (RGGI), which auctions carbon permits to power plants for their CO₂ emissions. This system only covers about 20 percent of CO₂ emissions in New England. In Vermont revenues are used to finance “all-fuels efficiency,” which pays for weatherization and efficiency programs, rather than a dividend. By expanding the cap and auction system to include all sources of CO₂ emissions such as heating and transportation, a substantial increase in revenue could be achieved. Total emissions in Vermont in 2005 were 9.08 metric tons of CO₂ equivalent.²⁰ Not including power plants, CO₂ emissions in 2005 were 8.44 million metric tons per year. Revenue from power plants in RGGI is already allocated to other uses, so was not included in our estimate.

Low estimate: using RGGI for revenue: RGGI allocates carbon permits to power plants by quarterly auction. The 2009 permit price of \$3.07 per ton was used for a revenue estimate for CO₂ emissions.²¹ Contributing the revenue to a SWF and dividend turns it into a “cap and dividend” program.²² Expanding RGGI to include all emissions at the recent auction price of \$3.07 per ton of carbon and current emissions of 8.44 Million metric tons of CO₂e would generate \$25.9 million additional revenue. 0.64 metric tons are included in the RGGI auction so generated \$1.96 million in existing revenue.

Estimate 2: using British Columbia carbon tax rate. Several years ago the Canadian province of British Columbia (BC) established a carbon tax of Canadian

\$10/ton. “The tax rates as of July 1, 2010 are equal to \$20 per tonne of CO2 equivalent emissions, increasing by \$5 per tonne each year for the next two years to \$30 per tonne in 2012”²³ Our middle estimate of CO2 revenue was based on the original BC carbon price of \$10/ton. Canadian and U.S. dollars are currently trading at par, so at the price of \$10/ton it would generate \$84.4 million.

Estimate 3, using EUETS prices: The carbon price on the European EUETS has fluctuated widely. At the time of the report in 2008 the most recent European EUETS price was US\$40/ton. Multiplying by the emissions of 8.44 mmt (million metric tons) would generate \$337.6 million. A carbon tax could also be used, which would generate more predictable revenue.

High estimate: Future carbon prices are uncertain. Many scientists believe that we must reduce our greenhouse gas emissions by 50-80 percent to maintain a livable planet. If that is the case it may require a carbon price of \$100 or even \$300 per ton. This could result in increasing revenue even as carbon permits are reduced, if demand is inelastic. \$100/ton would increase the price of gasoline approximately one dollar per gallon, which is equivalent to the increase in U.S. petrol prices from May 2010-May 2011 due to economic and political forces. The difference is the revenue would go to the SWF instead of to oil producers. Even \$300/ton or \$3/gallon of gasoline is equivalent to existing gasoline taxes in some European countries, so is not unreasonable. Applying \$300 per ton to the total 2005 Vermont emissions of 9.08 MMTe would provide \$2.724 Billion.

To be on the conservative side we used our lowest estimate of carbon revenue of \$25.9 million for carbon fees in our report. This would not require saving in a permanent fund as emission fees will continue as long as fuels are burned, which may be

indefinitely. If emissions are ever reduced to zero, then revenue would dry up, and this logic would have to be re-evaluated. Any location could use carbon taxes or permit fees to generate revenue for a SWF.²⁴ The values we have for the tables below are:

Low estimate: \$25.9 million

High estimate: \$2.724 billion

Wildlife and Fish

Fish and wildlife are among the few resources that have been managed universally as public trust resources, using a cap/permit/fee system. Many governments manage fish and wildlife by selling hunting and fishing permits. A scientific assessment of wildlife reproduction rates is made, and harvesting permits are issued to maintain the resource at a sustainable level. Permit fees are charged to pay for administration of the system and management of the resource, but permit fees are inadequate. Of the \$14.7 million revenue received by the Vermont Fish and Wildlife Department in fiscal year 2006, student researcher Ross Saxton determined that about \$7.7 million was economic rent and the other approximately \$7 million was the result of taxes.

Hunting, fishing, and trapping licenses generated \$5.4 million in 2006. The Fish and Wildlife Department receives \$621,871 in economic rent from leases on agriculture lands and camps on wildlife management areas, sales of timber, dog licenses, grants from the Vermont Association of Snow Travelers, Vermont All Terrain Vehicle Association, and tuition from conservation camps. Federal funds categorized as “other” produce \$363,787 in rent. These are received as grants from organizations such as the National Oceanic and Atmospheric Association. Mandatory boat registration permits produce \$243,617. The sales of conservation license plates produce \$125,986. The income tax

check-off box produces \$99,710. Being donations, this is all unearned income. Duck stamps are similar to hunting licenses, contributing \$16,169 of rent; \$1 million or half the general fund transfer of \$2 million was estimated as rent.

Saxton proposed a biodiversity and land conservation plan based on the number and scarcity of species in a given area based on “critical habitats,” and payment of rent proportional to species and habitat scarcity for use of these land areas, a form of scarcity rent. Saxton supported recent efforts to redirect 1/8 of one-cent sales tax from other programs to fish and wildlife, though this is a tax and not rent. He also recommended increasing the capital funding of the existing Fish and Wildlife Trust Fund from \$1.6 million to \$12 million in order to generate more interest income to use as operating funds. The total increase in revenue predicted was \$10.4 million used in our revenue estimate. Since wildlife is managed for sustainable yield, permit fees can be maintained indefinitely. The purpose of the Fish and Wildlife Trust Fund in Vermont is to create an endowment to generate reliable revenue. Adding current taxes of 14.7 million to additional potential revenue of \$10.4 million provides a high estimate of \$25.1 million.

Low estimate: \$10.4 million

High estimate: \$25.1 million

Public Forests

2008 public revenue of \$27 million from forests in Vermont consists of \$3.2 million from State Forests, \$6.58 million from State Parks, \$180,486 from fish and wildlife (logging), and \$17 million from “current use” (use value appraisal) program properties. Private revenue totals \$774 million including \$207.4 million from forest-based manufacturing, \$485 million from recreation/tourism, and \$50 million from paper

and pulp. Without knowing other business expenses it is difficult to calculate net profit, so we did not determine what percentage of revenue from these private activities is due to economic rent, and did not use it in our report. Our estimate was based on the \$32 million from forestry and logging.

Researcher Mark Kolonowski proposed two new sources of revenue: a fee for depletion of ecosystem services by logging, and a higher charge for conversion of current use property to non-forest uses. Since logging removes a fund of trees providing ecosystem services such as CO2 absorption, climate regulation, reduction of erosion, habitat, etc. Kolonowski proposes a “Depletion of Ecosystem Services” (DES) fee on forestry and logging. This would be similar to what other states capture in taxes on board feet of lumber, but would reflect a charge for depletion of the services provided by trees. A charge of 10 percent on just forestry and logging revenues of \$32 million would generate roughly \$3.2 million, which could be used to restore forests, and also feed a trust fund for the public. Another possibility is to revise the penalty when “current use” properties are removed from forestry use and sold for development. This penalty does not seem to adequately recover the revenue lost during the period of current use for forests. In 2007 the current use program resulted in a reduction of \$39.5 million in foregone property taxes, while in 2004 only \$404,155 was collected by the current use change tax. A better formula than the present one would recover all the lost revenue from the sale, by finding the original purchase price of the property, adjusting it for inflation, then subtracting it from the selling price.

Kolonowski also proposed an auction and insurance bond regulation, and the creation of a Vermont forest land bank. Notably Vermont has a Land and Facilities Trust

Fund that could receive new funds. Substantially more than \$3.2 million could be generated by rent on private use of public forests and additional research in this area is needed. The high estimate adds existing revenue of \$27 million to new revenue of \$3.2 for total of \$30.2 million.

Low estimate: \$3.2 million

High estimate: \$30.2 million

Groundwater (underground water taken from wells)

Privatization of public water supplies (providing tap water for homes and businesses) is a worldwide problem. We did not address that problem here, but Researcher Colin McLung²⁵ focused on water extracted by bottlers for resale. Groundwater in Vermont was put into the public trust in the legislative session of 2008. The latest figures from the Water Resources Division are that seven companies took 32 million gallons of water in 2008 for bottling in Vermont.

In addition there are at least 16 companies selling bottled water imported into the state. Companies taking groundwater for bottling in Vermont must apply for a permit to operate. They must have a source and EPA permit to check water quality, a construction permit, and an operating permit. But they don't pay any rent to the state for taking the public's water.

For example, a Canadian company called Ice River Springs (also known as Aquafarms) extracts water from wells in Vermont, and then trucks the water to Pittsfield, Massachusetts for bottling. In Pittsfield, they obtained a tax break to build a \$12 million bottling plant employing 60 people. They get their water from Pristine Springs in Stockbridge, Vermont. So, this out-of-state corporate bottler takes water obtained in

Vermont for free and exports it to Massachusetts, where they create jobs in Pittsfield, to benefit owners in Canada. Spring Realty Trust also has withdrawal and selling permits in Vermont, and can take water for free and sell it back to us at retail.

According to H2O for Maine, the gross profit on bottled water is 75 cents on an 85-cent bottle (88 percent profit)²⁶. This is for a “six pack” of 24-oz. bottles selling for \$3. Bottled water sold in single 32-48-oz. bottles is even more expensive. The cost of water to bottlers is essentially zero. All the costs are in bottling, marketing, and distribution. Eighty-five cents for 24 ounces is equal to \$4.53 per gallon of bottled water. At \$4.53/gallon, 32 million gallons of bottled water equals \$144.96 million of total revenue. Without knowing other business expenses it is difficult to calculate net profit. Consider that Norway charges 50 percent royalties plus 28 percent corporate tax on oil companies drilling in their territory, and still finds companies able to profit from drilling. Using 50 percent royalties results in potential revenue of \$72.48 million for Vermont.

Our original estimate of 34 million gallons extracted in 2008 was based on incomplete information, but is very close to the latest figure of 32 million gallons. We estimated the cost of bottled water at \$4.53/gallon for total revenue of \$154.2 million. Since the gross profit was estimated to be 88 percent, we used an economic rent figure of 70 percent resulting in \$107.9 million in possible revenue. This is the figure used in our report.

Another way to estimate the value of bottled water by the gallon is to use the average price of a liter of bottled water at convenience stores: about \$1.79. That converts to a price of \$6.78 per gallon of bottled water. At \$76 per barrel, oil is worth \$1.83 per gallon, and gasoline is \$3-\$3.50 per gallon in summer 2011. When we compare unrefined

water with unrefined oil we find that water sells for 3 times the price of crude oil and 2 times the price of refined gasoline.

32 million gallons of water at \$6.78 per gallon equals \$216.96 million in retail sales of bottled water. If the wholesale price were half that, it would be \$108.48 million. Even if we charged a low rent of 12.5 percent – equivalent to typical resource rents on minerals or oil – it would still amount to \$13.56 million in public revenue that could be put toward an SWF. Since unearned income is so much higher on bottled water we felt a much higher royalty rate was justified. Since water is a renewable resource if used sustainably, the revenue could be distributed annually without being saved in a permanent fund.

In 2011 we conducted additional research and found that total groundwater extraction for various commercial uses in Vermont amounts to 51 million gallons per day.²⁷ Groundwater extraction above 20,000 gallons per day includes golf courses, dairy processing, quarries, irrigation, oven manufacturing, power plant cooling, fish culture, etc. Countries such as Lithuania, Belarus, Kenya, Fiji, and Brazil charge from 0.18 cents to 30 cents per gallon of groundwater extracted.²⁸ Brian Kelly and fellow researchers suggested a rate of 0.0000359 to 0.001795 per gallon for all commercial users, the higher rate generating \$13.5 million in annual revenue.

Low estimate unearned profit from bottlers: \$107.9 million

High estimate add fees on all commercial users: \$121.4

Surface Water (Rivers, streams, lakes, and other water flowing above ground)

According to researcher Elliot Wilkinson-Ray,

First we must acknowledge the fact that water is a Public Trust resource in the state of Vermont. Therefore, the legal property rights for all of the surface waters in Vermont are granted to the public.... Although in practice 93 percent (roughly 445 million gallons per day) of surface water withdrawals in Vermont are by private companies without any mandatory compensation for the citizens to which that water belongs.²⁹

Current private revenue consists of \$35 million for public supply, \$1.7 million for wastewater permits, \$164.8 million from hydroelectric, \$100 million from thermoelectric, and \$109.1 million for recreation for a total of \$410.6 million. Water utilities in Vermont currently charge on average \$3 per 1,000 gallons of water just to cover their costs. Wilkinson-Ray contends that, “a higher price that included payments towards ecosystem restoration and protection would help curb wasteful water practices.”³⁰

Ending the local hydroelectric subsidy would generate \$6 million. Large hydroelectric facilities use 17.5 billion gallons of surface water per day, generating 578.5 megawatts peak. Hydro use of surface water is not considered “withdrawal.” These facilities pay property taxes, but are too small to pay the Electric Energy Tax.³¹ Wilkinson-Ray suggests charging 10 percent on use of water for hydro in Vermont, which would generate \$16.5 million. This is purely an estimate, and not a rigorous calculation of economic rent since most of the data is proprietary. Once the initial construction costs are paid for, hydro has very low operating costs, generating significant economic rent.

The Vermont Yankee Nuclear power plant is the largest single withdrawer of surface water in Vermont, drawing 421 million gallons per day, or 153 billion gallons per

year for condenser and reactor cooling. This is 82 percent of the surface water withdrawals in the state. Wilkinson-Ray suggests a charge of 5 cents per 1,000 gallons, or 2 percent of the current wholesale water rate, which would generate \$7.6 million. For the public supply he recommends an increasing base structure, which would add approximately 10 percent of existing public revenue or \$639,000. For other water use he prescribes a fee of 5 cents per 1000 gallons, generating \$438,000. The potential new revenue from water rental payments suggested by Wilkinson-Ray totals \$31.2 million. Water is renewable so fees could be generated annually in perpetuity, so do not need to be saved in a permanent fund. We have only one estimate of new revenue potential.

Estimate: \$31.2 million

Minerals

Researcher Ian Raphael found that unlike Alaska, where the constitution states that the public owns sub-surface resources, Vermont allows mining companies to pay only surface property taxes, and nothing to extract the minerals below. The mining industry is still governed by the Mining Act of 1872³².

Raphael finds the value of minerals extracted in Vermont to be \$96.8 million annually not including talc and slate, which are claimed to be proprietary. They do this on land valued at \$132 million, which means at the average property tax rate of 2.79 percent they are paying \$3.7 million in taxes. Adding the property and annual mineral value Raphael finds that mining companies are only paying 1.6 percent of this total in property taxes.

He also points out that when the minerals are gone, Vermont loses jobs and income, and gets a large clean up bill when all that is left are abandoned mines and

environmental waste. Raphael recommends a royalty system of 10 percent on the value of minerals extracted, which is lower than oil royalties in Alaska of 12-15 percent. This might be justified by the extended age of Vermont's mines, and possible lower productivity, but this requires more research. Mining companies are not forthcoming with these data. This would generate \$9.7 million for a mineral trust fund. "Vermont needs to reclaim the rights to all its natural resources including minerals.... By setting up a permanent fund to offset the extraction of non-renewable mineral resources, Vermont will ensure the prosperity of its amazing heritage and provide a current and future flow of revenue for its citizens."³³ Since current revenue is \$3.7 million, and potential revenue is \$9.7 million, we estimated new revenue of \$6 million. Since minerals are a non-renewable resource, the funds should theoretically be placed into a permanent fund, but because so few of Vermont's resources are nonrenewable, to keep it simple, I did not assume so for this chapter. We used \$6 million for our low estimate. If a standard royalty rate of, say, 12.5 percent is applied to revenue of \$96.8 million we get a high figure of \$12.475 million. Adding existing taxes of \$3.7 million provides a high estimate of \$16.175 million, generating the following estimates:

Low estimate: \$6 million

High estimate: \$16.175 million

Broadcast Spectrum

Researcher William Murray tells us that after restructuring in 1994, broadcast frequencies have been allocated by a one-time auctioning system. Only 2 percent has been auctioned this way, while before restructuring, 98 percent of spectrum was merely given away to private entities for the exchange of "in-kind" public service rather than

cash. This is despite the Communications Act of 1934, which states that broadcast spectrum belongs to the public. Currently 64 percent of the most valuable spectrum below 3.1 GHz is reserved for government use paying no fees. Murray cites a New America Foundation study³⁴, which calculated the total annual use value of spectrum at \$302 billion, mainly broadcast TV, mobile phones, and satellite communications. “Among all else, it is clear that the current mismanagement of socialized radio spectrum allocation provides one of the most promising opportunities for commons reform in the future.” Murray’s calculation of Vermont’s share of spectrum value provides a figure of \$625 million. Using a normal profit of \$250 million, he calculates potential economic rent in Vermont from spectrum at \$375 million. Murray suggests an annual instead of one-time auction, which would provide an ongoing revenue stream from spectrum. “Given all of this information, spectrum policy should be one of the easiest cases to make for common asset reform in the future.”³⁵ Unfortunately, spectrum is controlled entirely at the federal level by the Federal Communications Commission in the US, so individual US states may have difficulty collecting rent for use of the airwaves³⁶. Sovereign nations may not have this problem. Spectrum is one of the most valuable resources to have been almost completely given away. Since the federal government has jurisdiction over spectrum, we used the national spectrum value pro-rated by population for the value of spectrum in Vermont, which Murray determined was \$375 million. Again we have only one estimate:

Estimate: \$375 million

Wind

Researcher Susan Skalka³⁷ introduces the novel idea that wind blowing through the air, captured by wind turbines, like water flowing down a stream captured by hydroelectric dams, is a common asset that could generate revenue for the public. She recommends applying the democratic theory of rent to wind power, where governments would maximize their collection of rent to benefit the public. She recommends we encourage the nascent wind industry, but keep in mind the possibility of monopoly rents in the future, which should be recovered for the public. Skalka discusses the possibility of using a progressive profits tax as a model for how economic rent could be adjusted. If we installed 225MW of wind power generating 10 percent of Vermont's electrical power, wind could generate from \$5.5-\$172.5 million in economic rent in the future, depending on the price of electricity. We used the conservative figure of \$5.5 million in rent. Since current revenue of \$750,000 is captured by existing wind power taxes, the increase was counted as \$4.7 million. We have the following estimates:

Low estimate: \$4.7 million

High estimate: \$172.5 million

B. Social Common Assets

Land Value

Researcher Conor Casey argues that while property taxes do collect some economic rent, they fail to collect all of it, and also conflate taxes on buildings with taxes on land. Land values are socially created assets, as without population or municipal services land is nearly worthless. Collecting economic rent on land values does not

interfere with private property rights to land or security of land tenure. It merely changes who receives the rent. “Decoupling the land and building evaluations from the property tax rate would be a good start towards more effective rent collections....”³⁸ He says that taxes should be economically efficient, eliminating deadweight losses, correcting perverse subsidies and generally promoting healthy economic growth. This he argues is accomplished by increasing taxes on land while reducing or eliminating taxes on buildings. Buildings depreciate, while land generally inflates in value over time creating economic rent.

Casey points out that median housing prices have increased by 5 percent annually since 1980, although from 2000-2007 the figure was 21.72 percent annually (before the 2008 housing bust). Using the long-term 5 percent figure as an estimate of economic rent applied to the statewide land valuation of \$21.4 billion would have yielded \$1.07 billion in land tax revenue for 2007. This would be a 44 percent increase over the actual statewide property tax revenue of \$740.8 million for 2007. Some writers estimate economic rent from land as high as 10 percent of the purchase price of land annually, so our 5 percent figure is conservative.³⁹ Land values in most jurisdictions worldwide, especially cities, are extremely valuable but land rent is allowed to accrue to owners. Land taxes are often collected at the municipal level. Vermont is unique in collecting a portion of property taxes at the state level for equalization of education funding statewide. So it has a precedent of collecting statewide land rent.

Casey concludes, “Collecting economic rent from land is a perfectly viable way to fund most, if not all state obligations.”⁴⁰ Since property tax revenue of \$740.8 million is already allocated to the state education fund, we only counted the increase of \$329.8

million in our report. Using a 10 percent land value tax gives a high estimate of \$2,143 million (i.e. including existing tax). Thus, we have the following estimates:

Low estimate: \$329.8 million

High estimate: \$2,143 million

The Internet and World Wide Web

The Internet is an interesting case, since it was created entirely with taxpayers' money by the Defense Advanced Research Project Agency for the U.S. military, while the World Wide Web was created at CERN (a government research laboratory) in Switzerland and placed into the public domain voluntarily in 1993. The Internet and web have many features of a commons, and many people refer to the "Internet commons." Researcher Ida Kubiszewski explored the intricacies of the Internet and World Wide Web to determine if Internet companies are extracting economic rent from the public and how it could be recovered. She finds that companies are making a substantial unearned profit by utilizing a resource that was developed by a collective whole and not through their own efforts. In particular, services of ISPs connecting people to the web should be subject to rent as well as the provision of web domain names, because these are areas of Internet and web usage that are generating economic rent for companies. Without detailed cost data, Kubiszewski estimated economic rent in the following way: The average profit for Fortune 1000 companies is 7 percent and everything above that could be considered economic rent.

She found that economic rent from public telecoms to be \$17 million, private ISPs to be \$3.3 million, and domain names \$9.3 million. "Totaling up all the economic rent,

we find that economic rent owed to Vermonters is approximately \$30 million per year.”⁴¹

So, here again we have only one estimate for high and low values.

Estimate: \$30 million

Financial System (Speculation)⁴²

Financial markets and regulatory bodies that monitor them are socially created assets that allow financial transactions to take place. Peter Barnes estimated that 30 percent of the value of publicly traded companies is due to the liquidity of being listed on a stock market for trading.⁴³ Therefore the public deserves a share of the money generated in these markets. Of all the financial transactions that take place internationally, it is estimated that 95 percent are speculation in paper assets only, and only 5 percent in actual goods and services⁴⁴. Economist James Tobin suggested a tax (Tobin Tax) to slow down the rate of speculation in currency exchanges, which creates no new goods or services. In February 2000, economist Dean Baker of the Center for Economic and Policy Research calculated the total potential revenue from a 0.25 percent “Tobin” tax in the U.S. as \$128.4 billion, including revenue from speculation on stocks, government bonds, corporate bonds, futures contracts, currency, swaps, and options⁴⁵. Pro-rating the total by Vermont’s population (Vermont was 0.21 percent of 2000 U.S. population) would generate \$269 million. Any state or country could do the same. Several countries including France, Germany and the United States are currently considering Financial Speculation taxes.⁴⁶ In 2009 Baker revised the calculation to a high estimate of \$353.8 billion, which provides a higher Vermont estimate of \$743 million.⁴⁷

Low estimate: \$269 million

High estimate: \$743 million

Money creation/seigniorage⁴⁸

Banks create 97 percent of the money in the United States through the fractional reserve system,⁴⁹ which allows the private banking system and central bank to loan out many times more money than they have on deposit. The monetary system is a socially created system, which has been almost completely privatized by the Federal Reserve Banking System. If we are going to give banks the privilege of seigniorage (money creation) we should at least recover a share of it for the public. In 2004 Vermont banks lent out \$3.57 billion.⁵⁰ An arbitrary 1 percent tax on bank money creation would generate \$35.7 million for the common assets fund in Vermont. A better approach would be to establish 100 percent reserve requirements for banks, which would end bank creation of money.⁵¹

Money could then be issued by government and loaned or spent into existence. If government is creating credit, there is no reason they could not issue it directly as a basic income instead of loaning it out. As long as government accepts this money back for payment of taxes or other government services then the money will circulate properly. The other requirement is to avoid printing more money than available goods and services to avoid inflation. The American colonists were able to achieve it with colonial scrip, and Lincoln did it with Greenbacks, so there is no reason we cannot.⁵² For now we used the figure of \$35.7 million in our report, giving us one estimate.

Estimate: \$35.7 million

3. Putting it all together

Potential increased revenue from economic rent on natural and social assets in Vermont was estimated to be about \$1.2 billion (see table), which equals nearly half of

Vermont's 2008 in-state revenue of \$2.9 billion⁵³. If \$1.2 billion in annual revenue were distributed equally to all 623,050 Vermont residents (2005 estimate)⁵⁴, this would amount to \$1972 per person annually. We used very cautious estimates of revenue and actual figures could be much higher. For example using \$100/ton for carbon would generate \$844 million per year in Vermont, equal to $\frac{3}{4}$ of our entire estimate just from this one resource.

Using our high estimates for potential revenue, economic rent could generate revenue of \$6.5 billion, which if distributed annually would provide \$10,348 for every resident of Vermont. This would be more than a subsistence income. Other jurisdictions may have much more valuable assets than resource-poor Vermont. For example, some states have billions in mineral or oil wealth, and many urban areas have hundreds of billions in land values or spectrum values. Dumping harmful emissions into the air is a privilege, which will be costly in the future. Every jurisdiction can evaluate these and other sources of economic rent. This exercise is merely an attempt to demonstrate the potential revenue possibilities.

These figures are estimates only, and we do not claim they are precise. But they demonstrate the potential of economic rent.

Low and high estimates of possible dividends for Vermont							
Asset	Total current economic rent	Current Vt Tax (in millions of US\$)	Low estimate of new revenue potential (in millions of US\$)*	Explanation		High estimate of total revenue potential (in millions of US\$)*	Explanation
Air	27.9	1.96	25.9	\$3.07/ton CO2		2724.0	\$300/ton Co2
Wildlife & Fish	25.1	14.7	10.4	new scarcity rent		25.1	tax + new revenue
Public Forests	30.2	27	3.2	10% depletion fee		30.2	tax + new revenue
Ground water	107.9	0	107.9	royalty on bottlers		121.4	royalties + groundwater fees
Surface water	31.2	0	31.2	user fees		31.2	User fees
Minerals	9.7	3.7	6.0	severance tax		16.2	tax + new revenue
Land Value	1,070.8	741	329.8	5% land tax		2143.0	10% land tax
Wind	5.4	0.74	4.7	progressive profit tax		172.5	Potential Progressive profits tax
Internet & web	30.0	0	30.0	rent on ISPs and Web domains		30.0	rent estimate
Broadcast spectrum	375.0	0	375.0	user fees		375.0	user fees
Financial system	269.0	0	269.0	.25% speculation tax (Baker 2000)		743.0	2009 Baker study
Monetary system	35.7	0	35.7	1% on 2004 loans		35.7	2004 loans
Total (millions of US\$)	2,017.9	789.1	1,228.8			6447.3	
Per capital dividend			\$1,972			\$10,348	

2005 VT Population: 623,050

Source: author's calculations from figures reported above

* The "low" and "high" estimates differ in two ways: the "low estimate" uses the most conservative estimates of resources values *and* subtracts out the amount already being collected by Vermont tax authorities (\$790 per person per year). The "high estimate" uses more generous estimates of resource value and *does not* subtract out the amount already being collected by Vermont tax authorities.

If we believe that the natural and social assets of every state belong to the citizens of the state, then it is imperative to recapture this value and return it to all citizens rather than leaving it in a few private hands. Every state or country has a collection of common assets that are probably equal to or greater in value than Vermont's common assets. These assets can be used to finance an SWF and dividend along the lines of the Alaska model. If we could do it in poor Vermont, others can certainly do it elsewhere.

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