Rethinking Public Land Revenue Sharing: Utilizing a Natural Resources Trust to Address Volatility, Equity, and Incentives

Headwaters Economics | **December 2014**

Congress should establish a Natural Resources Trust designed specifically to resolve challenges created by federal public land revenue sharing.

I. Failing Federal Payments and Options for Congress

Over the years, Congress has established a number of programs that deliver to states and local governments a share of commercial receipts generated on federal land. These include receipts from timber, grazing, and fossil fuels. The federal public land revenue sharing payments have three goals: to compensate for the tax-exempt status of federal land, to help mitigate the impacts of resource extraction activities, and to promote economic development.

Unfortunately, these payments are tied to volatile resource markets and have failed to provide stable or equitable funding to states and communities. They also have created a budgetary dependence for local governments that rely on federal land management and spending policies. Particularly in the rural West, this dependence on revenue sharing payments has encouraged states and counties to view federal public lands mainly for their ability to generate commercial receipts.

To address concerns about volatility, equity, and incentives, Congress has replaced some revenue sharing payments with annual federal appropriations. But the federal government now appears unwilling to continue spending on these programs amid budget concerns.

What Congress will do next is unclear. What is clear is that revenue sharing payments powerfully impact federal public land management decisions and the fiscal health and the economies of nearby communities.

So far, two options have been considered: either extend current annual appropriations to maintain decoupling between county payments and annual commercial receipts, or return to revenue sharing. The later option includes proposals for new and expanded payment programs. A Natural Resources Trust, however, may offer a better long-term solution.

II. An Alternative Solution: A Natural Resources Trust

Establishing a Natural Resources Trust would stabilize volatile revenue streams, eliminate the need for mandatory spending, and reduce dependence on federal payments.

The U.S. federal government is conspicuous in having tremendous resource wealth but no permanent trust fund of any kind to manage these revenues. By comparison, trusts are utilized by nearly every U.S. state with significant natural resource wealth. For example, Alaska, Louisiana, New Mexico, North Dakota, Oklahoma, Texas, and Wyoming have significant oil and natural gas severance tax and royalty trust funds with a combined value of more than $100 billion.[1] Trusts also are common internationally, led by Norway's massive sovereign wealth fund created from oil revenue and valued at more than $850 billion.[2]

Establishing a Natural Resources Trust ("Trust") would fundamentally change the way federal commercial receipts are used. Currently, receipts are spent on an annual basis either as direct payments to state and local governments or to help subsidize authorized spending amounts. Revenue from commercial receipts is volatile, creating problems for the recipients and potential liabilities for taxpayers and public land managers. If revenue falls for any reason, Congress may use taxpayer dollars to assist communities, or seek to subsidize continued extraction.

With a Trust, receipts would be invested into the Trust and the principal balance would be held in perpetuity. The Trust would make distributions either directly to state and local governments, or back to the federal treasury to lower the cost of appropriations. Over time, the principal balance would grow and distributions from the Trust would replace annual revenue sharing payments, eliminating the need for appropriations entirely.

III. Paper's Organization: Examples of How a Trust Could Work and Five Principles for Success

The rest of this paper describes in more detail how a Trust could work in the context of federal revenue sharing. First, we offer a quick example using Oregon timber payments. Then, we step back for a more in-depth review of current timber revenue sharing programs, including challenges, reforms, rural economic development, and projections for how a Trust could work going forward.

Second, we turn from timber to describe in detail how a Trust could work for offshore oil and natural gas revenues that are directly shared with coastal states and communities. Finally, we end with a set of five principles necessary for a successful Natural Resources Trust.

IV. Oregon Timber Revenue and a Trust: A Missed Opportunity

Had Congress chosen a different approach and instead established a Trust in the 1970s, Oregon's share of the Trust would be valued at more than $5.9 billion today.

Federal fiscal policy related to revenue sharing is important to states and communities because of the revenue, economic development, and land management implications of different policy approaches.

Consider timber revenue sharing payments in Oregon. During the four decades spanning 1960 to 1993, federal lands in Oregon produced $40 billion worth of timber (in 2013 dollars) of which $13 billion went directly to local governments as annual revenue sharing payments, nearly $400 million annually on average. Timber and the workers harvesting and milling the logs literally and figuratively built communities across the Pacific Northwest, and payments from the Forest Service and Bureau of Land Management almost single-handedly paid for public schools, county roads, city parks, jails, and more.

Today, however, changing markets and federal land management policies have reduced the value of these revenue sharing payments to about $15 million annually.

This is not a new problem. As early as the 1970s, Congress began changing the way it funds payments to state and local governments, moving away from annual revenue sharing in favor of more stable and equitable payments made from appropriations. Since the first appropriations in 1977, Congress has spent $5 billion in Oregon on Payments in Lieu of Taxes (PILT) and Secure Rural Schools (SRS) payments (in 2013 dollars). This year, appropriations replacing revenue sharing payments totaled about $120 million in Oregon.

Had Congress chosen a different approach and instead established a Trust in the 1970s, Oregon's share of the Trust would be valued at more than $5.9 billion today.[3] A fixed distribution from the Trust of four percent in 2013 could have made payments to Oregon counties of $295 million. These payments would cost the federal treasury nothing this year or in the future. In reality, Oregon counties in 2013 received less than half that amount (about $120 million from SRS payments and PILT combined) at a cost to the federal treasury of $105 million. (If revenue sharing payments were made instead of PILT and SRS in FY 2013, these would have totaled about $15 million—$5.8 million from the Bureau of Land Management Oregon and California Railroad Grant Lands (O&C) and $9.1 million from the Forest Service 25% Fund.)

To state it another way, by not having a Trust, Congress has spent $3.9 billion since 1977 to make payments to Oregon counties alone, and will continue to spend more than $100 million annually in perpetuity at current funding levels. Establishing a Trust would have cost about a third of that amount during a period of 16 years, but by 1993—when the Northwest Forest Plan was adopted—there would have been no need for supplemental federal payments (discussed in more detail below). Counties could have made permanent and certain tax reductions, or additional investments in schools, road infrastructure, health care, and other services.

On a national scale, if a Trust Fund were established in 1977 on behalf of all states, it would be worth $11.9 billion in FY 2013 and distribute payments equal to $594 million in the same year. By comparison, actual receipts in FY 2013 totaled about $62 million nationally (including Forest Service and the BLM O&C lands in Oregon). Secure Rural Schools payments for FY 2013 totaled $328 million. In other words, a national Trust Fund for county payments established in 1977 would have distributed $266 more to counties last year compared to SRS at no cost to the Treasury. (See Appendixes A, B, and C for details.)

V. Federal Public Land Revenue Sharing

Despite the proliferation of revenue sharing programs, the original promise of the payments funded from Forest Service timber receipts failed for reasons Gifford Pinchot could not have foreseen.

Other federal public land revenue sharing programs beyond Oregon would benefit from establishing a Trust. This section briefly discusses the history of national timber payments, reforms, and the current context and policy options facing Congress.

Since 1908, the U.S. Government has made payments to counties and local schools as compensation for the tax-exempt status of federal public lands within their boundaries. The first payment program was equal to 25 percent of the proceeds from commercial activities on the newly established forest reserves, mainly from timber sales; hence, the program became known as the "25 Percent Fund."

Gifford Pinchot, the first Chief of the U.S. Forest Service, advocated for the payments, arguing that while public lands reduce the tax base in rural areas, sharing the proceeds from their conservation and sustainable use provides for fair and sufficient payments in-lieu of local taxation.

In 1937, following the same model as the Forest Service, the BLM began sharing with counties commercial receipts generated on the O&C lands. The O&C payments shared 50 percent of commercial receipts with a group of 18 counties, all in Oregon.[4]

The first revenue sharing payments made by the Forest Service were modest. For the entire period between 1908 leading up to WWII, payments nationally averaged around $10 million in today's dollars. After World War II payments increased substantially when timber extracted from the National Forests and BLM O&C lands helped to fuel the nation's housing boom. Payments reached a high of nearly $1.2 billion in 1977 (in today's dollars).[5]

Over time, more federal land revenue sharing programs besides timber were established. Today, the BLM shares revenue from grazing, recreation, and rights of way for renewable energy projects. The U.S. Fish and Wildlife Service distributes revenue earned from National Wildlife Refuges.[6] The Office of Natural Resources Revenue distributes revenue earned from oil, natural gas, coal, and other resources extracted from federal lands and waters. In total, federal agencies oversee more than 15 programs that distributed more than $2 billion to states and local governments in 2013.[7]

Challenges: Volatility, Equity, Dependence, and Incentives

Despite the proliferation of revenue sharing programs, the original promise of the payments funded from Forest Service timber receipts failed for reasons Pinchot could not have foreseen.

First, the payments proved to be too unpredictable for local governments to use for effective annual budgeting. As revenue sharing payments increased and became more important to communities, the inherent volatility of payments became more apparent and problematic. On a national basis, payments could rise and fall on the order of 30 percent annually. For an individual county, the annual swings could be even greater, hampering local officials' ability to engage in long-term planning, to pay for costly infrastructure improvements, or to provide consistent funding sources for annual budgets.

Second, payments were wildly uneven from place to place. Regions with high-value timber received huge payments; often these payments constituted more than half of local budgets. Other regions, particularly those having lands with fewer commercial uses, received little.

Finally, the program created financial dependence on federal payments. High payments in some regions allowed local elected officials to reduce local taxes—replacing the local tax base with federal payments. This reaction, though sensible, was not anticipated by the payment program, which intended the payments to make up for limitations in the local tax base, not to allow counties to effectively eliminate the need for local taxation. In addition, local governments had the incentive to view federal public lands primarily for their potential to generate receipts while ignoring the lands' other economic, natural, and social values.

In Oregon, for example, the counties where payments make up the largest share of local government budgets maintain the lowest property tax rates.[8] When payments decline—due to market volatility, land management policy changes, or dropping appropriations due to federal budget battles—dependent counties must cut services or raise local taxes. In practice, raising local rates has proved difficult for several reasons, including two state constitutional limitations on local tax rates and property assessments.[9] So most dependent counties have seen sharp declines in the level of government services, including sheriff patrol reductions, jail closures, and cutbacks in other services. These cutbacks may have implications for long-term economic development options.[10]

The demand for payments to local governments drives fiscal policy to this day. With federal appropriations expired and state and local options limited, members of the House of Representatives have argued that the Bureau of Land Management and the Forest Service have failed in their responsibility to maintain timber harvests to support county budgets. The resulting legislation would require federal agencies to hit minimum timber harvest levels each year to boost commercial receipts, repealing most environmental and public review to do so.[11]

Past Reforms: PILT and SRS Attempt to Stabilize Payments

"Although they were originally designed to offset the tax immunity of Federal Lands, the existing revenue-sharing programs do not meet a standard of equity and fair treatment either to state and local governments or to the Federal taxpayers."
— U.S. Public Land Law Review Commission, 1970[12]

Forty-four years ago, the U.S. Public Land Law Review Commission's report cautioned that years of dependence on revenue sharing payments, deepened by ossified low local tax rates, encouraged counties to view public lands primarily for their revenue-generating capacity at the expense of other values public lands provided the same communities, such as recreational opportunities, clean water, and wildlife habitat. The more revenue a particular activity generates—and timber sales generate the most—the more the counties want the Forest Service and BLM to pursue that activity.

To address these issues, Congress began replacing timber revenue sharing payments with appropriations. In 1976, Congress passed Payments in Lieu of Taxes (PILT) to use federal appropriations to work in concert with revenue sharing payments. PILT's role is primarily to stabilize and equalize revenue sharing payments to counties. PILT uses a formula that estimates each county's entitlement amount based on the number of acres of federal land in each county rather than the value of receipts generated on nearby public lands.

The formula takes into account how much the county received in revenue sharing payments from the Forest Service and BLM (among others). It is useful to think of PILT as a shock absorber: when revenue sharing payments decline, counties are eligible for larger PILT payments; when revenue sharing payments rise, the PILT formula responds with lower appropriations the following year.[13]

However, even with PILT acting as a safety net for revenue sharing payments, substantial swings in annual payments to counties continued. The recession in the early 1980s led to a huge decline in payments as demand and prices for federal timber decreased. At the same time, a growing environmental consciousness among the public began to influence federal land management. The upshot was the creation of a slate of new planning mandates to protect endangered species and other conservation values on Forest Service and BLM O&C lands. These new mandates contributed to declines in timber harvests—some of which, particularly in the Pacific Northwest—were dramatic.

The decline in the timber cut necessarily resulted in lower revenue sharing payments based on the value of timber extracted, and PILT failed to provide enough funding to replace the full value of the falling payments. In response, Congress in 1993 included transition payments (sometimes called "owl" payments in recognition of the endangered Northern spotted owl) in the Northwest Forest Plan. Congress guaranteed the counties affected by the Northwest Forest Plan would receive 85 percent of the average of their three highest historic timber payments on an annual basis. These payments would be funded out of the federal treasury. The payments were scheduled to decline at a rate of five percent annually to allow affected counties time to "transition" their economies away from commercial timber and establish new sources of funding for local schools and county services.

The spotted owl transition payments resulted in a complete de-coupling of county payments from annual commercial receipts in the Pacific Northwest. This was a first. In 2000, under the SRS, Congress turned transition payments into the nationwide norm. SRS was available to all counties nationally, not only those in the Northwest. SRS payments were also equal to 85 percent of historically high timber payments.

Because SRS was intended to be a transition program, funding was initially appropriated for six years at declining levels annually. But Congress extended SRS in 2007 and again in 2008, the second time with significant reforms and an increase in funding. In 2008, equity issues were a major concern in the SRS reform discussions. From 2001 to 2007, Oregon counties had received nearly half of all SRS funds, with California and Washington combined getting nearly another third of the total SRS payments. The 2008 reforms added two components to the now three-part formula in order to broaden the allocation of payments. In addition to (1) historic timber payments, the SRS formula now included (2) the total number of Forest Service and BLM O&C acres in each county, and (3) an economic performance adjustment based on the relative per capita income of each county that would deliver a larger share of the funding to relatively poorer counties.[14]

Economic Transition and County Payments

Unfortunately, transition payments have not worked to transform rural economies. Today's economy is much different than it was forty years ago. Most new jobs are in various services sectors, including health care, professional services, and recreation and tourism.[15] Some rural communities struggle to compete for high-wage service jobs that are largely located in cities with access to educated workforce, global markets, and clusters of similar businesses and skills.[16] Rural areas are affected by their difficulty in attracting high-wage services jobs, by stagnant wages in manufacturing and natural resource sectors, and by mechanization that requires fewer workers.[17]

Even though some places can still be lifted by natural resource booms, managing these benefits must improve. Tying local budgets to timber revenue again will not provide budget stability, and most likely will fall far short of expected economic outcomes in most counties. The idea that Secure Rural Schools provided only "transition payments" contributes to the uncertainty about future policy direction. The transition itself is open to interpretation. Some argue transition payments were intended to allow the agencies time to return to significant commercial logging on federal public lands and reinstate annual commercial receipts as the main funding source. Others believe transition payments would allow time for communities to move away from dependence on natural resource extraction to a broader diversified economy. In reality, neither is likely to work for all communities.

A Trust can end appropriations, stabilize payments, and help shift focus back to creating the greatest number of jobs based on the competitive advantages each community possesses.

VI. How a Natural Resources Trust Could Work Going Forward

If started next year, a Trust would take some time to fully replace the cost of county payments because appropriated amounts exceed the value of receipts by a good margin. But we estimate the Trust would pay for itself in 12 to 20 years, lowering the cost to the Treasury year over year after that point.

Under a Natural Resources Trust, instead of receipts being spent on an annual basis as they come in, they would be invested into the Trust. In the short-term, extending PILT and other programs at current levels would cost the Treasury because the commercial receipts that otherwise would be returned to the Treasury would instead be allocated to the Trust. As the balance and distributions of the Natural Resources Trust grow, the cost of these programs would be lowered as the distributions reduce and eventually eliminate the need for treasury spending to meet appropriated payment levels. The speed at which the Trust grows and accomplishes its fiscal goals depends on the value of receipts it receives and the performance of the investment strategy.

If started next year, a Trust would take some time to fully replace the cost of county payments because appropriated amounts exceed the value of receipts by a good margin. But we estimate the Trust would pay for itself in 12 to 20 years, (the difference is based on expectations of future receipts), and after that point it would cost the Treasury less year over year to maintain the same appropriated payment levels. (See Appendix D for details.) If receipts remain at current levels into the future, a Trust would grow more slowly, If forest management reforms are adopted (for example Senator Wyden's current proposal for BLM O&C management and Representative Hasting's proposal for mandatory cuts on Forest Service lands), increasing receipts invested in a Trust would shorten the time it takes for these investments to pay for themselves to about 12 years and eliminate the need for appropriations entirely in less than 30 years.

Because SRS needs to find offsets to make payments, the Congressional Budget Office will look 10 years out to score an extension. If payments are made at current levels, the cost to the Treasury without a Trust is $500 million to $1 billion over 10 years, only a five to ten percent increase in costs compared to extending appropriations in the short term to allow for a Trust to grow. Yet if the Congressional Budget Office were able to look further, the next 10 years would see the cost of payments begin to decline, a trend that would continue unabated.

VII. Offshore Oil and Natural Gas Revenue Sharing and a Trust

The principles of a Natural Resources Trust can be applied to additional federal public land payment programs. Permanent funds are commonly used to stabilize fiscal resources by most U.S. states where natural resources are important, and by nearly every major fossil fuel-producing country around the world.

New technology and high prices have ushered in a new oil and natural gas boom and the temptation to expand and establish new revenue sharing programs is strong. Yet doing so risks recreating the same dynamics that have played out in Oregon's timber payments, potentially on a grander scale.

The current oil boom, oil and coal export proposals, and several policy deadlines that are approaching offer an excellent opportunity to consider the role a Natural Resources Trust can play in addressing revenue sharing challenges while keeping a commitment to utilize natural resources revenue to benefit communities.

Examples of Energy Revenue Sharing Trusts: GOMESA and the FAIR Act

The Gulf of Mexico Energy Security Act (GOMESA) began sharing 37.5 percent of offshore oil and gas royalties, bonus payments, and rentals from certain leases with coastal communities in four states, Alabama, Louisiana, Mississippi, and Texas. In 2017, GOMESA is set to expand significantly by increasing the number of leases from which revenue will be shared with communities. FY 2013 GOMESA payments totaled about $40 million. After 2017, GOMESA is capped at $500 million, and payments are likely to rise to that level.

GOMESA's expansion will increase payments by more than tenfold. The new revenue will have significant influence on local government budgets in coastal states. As we have seen, it will be difficult for local governments to maintain the local tax base with significant revenue flowing from oil and gas. While the cap stabilizes annual payment volatility, if oil production slows for any reason—changing prices, another offshore disaster, or policy changes including a carbon tax—states and communities made more dependent on annual fossil fuel revenue will be exposed to fiscal crisis. As in Oregon, it will be tough for communities to replace these funds by raising taxes.

These payments have not yet started, so the timing is good to set up a Trust. Doing so would still provide local governments with new payments starting in 2017, and these payments would grow annually in perpetuity. Under a Trust, the first-year payment would be $60 million (up from $40 million currently). This grows four-fold over 10 years to $240 million. In about 20 years, payments would exceed $500 million and would continue to grow (reaching more than $1 billion annually after 36 years). Payments would be predictable and stable in perpetuity, immune from changing prices, policies, or natural disasters that might otherwise be cause for significant volatility and uncertainty. (See Appendixes for details.)

GOMESA is important by itself, but is made more so by a proposal in the U.S. Senate, S. 1273, the Fixing Inequities with Revenues Act of 2013 (FAIR Act)[18], that would lift the $500 million cap and extend offshore revenue sharing to all leases nationally, including offshore in the Arctic and the Pacific and Atlantic coasts. Under such a proposal, communities could receive higher payments, but would also be directly exposed to volatility on a yearly basis. The short-term stability imposed by a cap would be removed. In the past 10 years, offshore revenue has varied from year to year by an average of 35 percent, and as much as 160 percent. Such volatility would be difficult for local governments to manage and could force local governments to seek outside assistance; just as timber-dependent communities asked Congress for appropriations at the height of timber revenue sharing payments.

Congress could find itself in a familiar position of having to use taxpayer monies to stabilize payments or compensate communities entirely when offshore receipts decline for any reason. Or, by encouraging dependency on revenue sharing, Congress could encounter future pressure to continue offshore drilling even if other policy approaches may be more cost effective or desirable for social or environmental goals.

Alternatively, Congress could maintain the current GOMESA revenue sharing payments, but invest additional offshore oil and natural gas revenue after 2017 into a Natural Resources Trust. Distributions from a Trust would raise current payments immediately, but at a lower level than what an annual revenue sharing payment could provide. However, Trust distributions would increase annually in perpetuity, eliminating the dangers of dependency (and future federal liabilities), and allowing communities to make long-term investment decisions.

In the first year, payments from a Natural Resources Trust would be $60 million, growing to more than $500 million after 20 years, and to more than $1 billion annually after 36 years. A Trust established to implement the FAIR Act, if it is adopted, would be worth 13.5 billion after 10 years, and grow to more than $44 billion after 20 years. It would make distributions to costal states and communities of $85 million in the first year, growing in perpetuity to more than $1.8 billion after 20 years.

Setting up a Trust for offshore revenue sharing will be difficult for several reasons:

A primary challenge is that it is difficult to delay benefits. GOMESA and the FAIR Act promise to generate massive windfall payments immediately for coastal states and communities. The near-term benefits are exactly what make them so powerful, and make it easy to overlook the nearly inevitable long-term budget crisis.

Just as important, the incentives created by linking budgets to extraction are an important policy outcome for many decision makers. Making the rhetorical point, Representative Doc Hastings, Chair of the House Natural Resources Committee, stated in a Committee Hearing on the FAIR Act, “I believe it is crucial to recognize that revenue sharing will increase American energy production by creating new incentives for opening new offshore areas for drilling."[19]

The same policy debate is shaping the future of onshore timber payments to counties. In the December 2014 continuing budget resolution, Congress elected not to extend the Secure Rural Schools and Community Self-Determination Act, ending 20 years of appropriations for county payments. The next Congress is expected to try and pass legislation that would recouple payments to annual timber revenue and mandate minimum timber harvests on public lands to meet county payment targets. The "Restoring Healthy Forests for Healthy Communities Act" that passed the U.S. House last year would meet these timber targets by limiting environmental and public review of federal actions designed to generate receipts on behalf of counties. If the goal is to boost timber production on public lands, tying timber production to local school budgets offers the same rhetorical power as linking coastal restoration and infrastructure funding directly to offshore production revenue may hold for increasing the area available to leasing for oil drilling.

VIII. Five Principles for a Successful Natural Resources Trust

This paper argues that county payments should continue to provide compensation to local governments for non-taxable federal land and provide resources to help mitigate the costs associated with resource extraction. However, a new direction is needed to avert the pitfalls of direct revenue sharing and to reduce federal spending, currently the two options being debated in Congress. A Natural Resource Trust can provide a long-term solution to these challenges.

If Congress chooses to establish a Trust for timber, offshore oil, or any other revenue sharing payments, several key principles will help insure its success:

- Protect the principal balance so the Trust will grow in perpetuity as additional commercial receipts are deposited on an annual basis, and the Trust earns interest on its assets. The Natural Resources Trust would likely have to be established outside the federal treasury to ensure the balance is protected.
- Make annual distributions equal to a fixed percent of the ending fund balance. A fixed distribution provides a stable payment stream from the Trust compared to distributions based only on interest earned, which can be volatile (negative in some years) depending on how the assets are invested. A fixed distribution of less than the average annual return can also allow the fund balance to grow at the rate of inflation.[20]
- Coordinate the Trust to work in concert with short-term extensions to existing revenue sharing programs. The establishment of a Natural Resources Trust should avoid resultant dramatic short-term declines in payments to the greatest extent possible. This could be accomplished by extending SRS at a declining rate or reforming PILT to ensure the safety net can compensate for the value of annual revenue sharing payment in the short-term.[21]
- Once a Trust is established, it can be extended to receive receipts from any increase in commercial activities or newly established revenue sources (for example, royalty rate increases or new royalty activities, including renewable energy production on federal lands). All new natural resource revenue should be directed to the Trust rather than used to increase or establish new direct revenue sharing payments.
- Congress could use the proceeds from the Natural Resources Trust to align land management incentives with economic development and restoration needs. To do so, a portion of distributions could be directed to agencies for economic development projects, or directly to counties based on metrics tied to accomplishments on federal lands. These accomplishments could be based on

ecosystem services values such as clean water or wildlife habitat generated by land management activities.

IX. Conclusion

The Secure Rural Schools and Community Self-Determination Act (SRS) has expired and Congress has funded Payments in Lieu of Taxes for only one more year, and at an amount less than full-funding.[22] As a result, many rural counties will face significant revenue shortfalls, harming local school, road, and county budgets, and potentially limiting future economic development options related to public lands. The leading funding options going forward—returning to revenue sharing payments or asking Congress for continuing appropriations—each appear unable to provide the kind of stability and predictability counties need as compensation for non-taxable federal lands within their jurisdictions.

A Natural Resources Trust can provide a permanent and dedicated funding source that resolves the challenges of volatility and dependence associated with direct revenue sharing, and replaces the need for permanent appropriations. Because it would require some patience before the Natural Resources Trust could replace the need for appropriations entirely, Congress would have to extend appropriations in the near-term. But a Trust could be established at relatively low cost and provide the basis for a long-term solution.

More importantly, perhaps, is ensuring that even larger revenue sharing programs learn lessons from the timber payment example, particularly in Oregon No extensions or increases in current natural resource spending programs should go forward without a Permanent Natural Resource Trust in place to stabilize revenue, reduce state and local government dependence on federal payments, avoid future federal spending liabilities, and ultimately broaden the economic benefits of federal public lands and natural resources.

Contact:
Mark Haggerty, 406-570-5626, mark@headwaterseconomics.org.

Headwaters Economics is an independent, nonprofit research group that works to improve community development and land management decisions in the West. Our county payments research can be found here: http://headwaterseconomics.org/land/county-payments-research.

Appendix A: Trust Fund in Oregon if Established Instead of PILT

Year	Beginning Balance	O&C and FS Receipts in Oregon	Return on PWMTF	Investment Income	Ending Balance	Distribution at 4%	Actual Payment (PILT, O&C, FS, SRS)	Actual Subsidy (PILT, Transition Payments, SRS)	Cost of Establishing a Trust to the Treasury	Payment Under Trust
1977	0	188,772,384	9.1%	17,201,949	205,974,333	8,238,973	$191,412,375	3,538,060	183,173,402	191,412,375
1978	197,735,359	187,042,735	6.7%	25,920,512	410,698,607	20,534,930	$192,783,226	3,884,423	172,248,296	192,783,226
1979	390,163,676	216,741,567	8.6%	51,917,858	658,823,100	32,941,155	$219,946,714	3,602,221	187,005,559	219,946,714
1980	625,881,945	184,639,931	10.4%	84,483,746	895,005,622	44,750,281	$188,508,866	3,353,988	143,758,585	188,508,866
1981	850,255,341	180,822,463	11.7%	121,103,112	1,152,180,915	57,609,046	$185,253,600	3,580,317	127,644,554	185,253,600
1982	1,094,571,870	75,422,689	12.5%	146,705,108	1,316,699,666	65,834,983	$78,835,237	3,099,572	13,000,253	78,835,237
1983	1,250,864,683	118,516,769	13.6%	185,616,969	1,554,998,420	77,749,921	$121,242,552	2,580,305	43,492,631	121,242,552
1984	1,477,248,499	154,751,141	12.2%	198,620,952	1,830,620,592	91,531,030	$155,660,696	2,728,294	64,129,666	155,660,696
1985	1,739,089,562	150,370,057	11.4%	216,184,052	2,105,643,671	105,282,184	$153,515,597	2,617,177	48,233,413	153,515,597
1986	2,000,361,487	189,048,354	10.0%	219,792,798	2,409,202,640	120,460,132	$192,188,383	2,714,285	71,728,251	192,188,383
1987	2,288,742,508	200,364,033	8.8%	217,967,642	2,707,074,183	135,353,709	$203,811,658	2,885,470	68,457,949	203,811,658
1988	2,571,720,474	253,400,726	8.0%	225,899,243	3,051,020,443	152,551,022	$257,216,281	2,936,917	104,665,259	257,216,281
1989	2,898,469,421	274,065,802	7.3%	233,088,717	3,405,623,940	170,281,197	$277,945,123	2,899,181	107,663,926	277,945,123
1990	3,235,342,743	252,900,459	8.5%	295,264,992	3,783,508,194	189,175,410	$256,654,479	2,925,062	67,479,069	256,654,479
1991	3,594,332,784	193,407,623	8.8%	332,007,812	4,119,748,219	205,987,411	$251,810,925	58,403,302	45,823,514	251,810,925
1992	3,913,760,808	193,493,907	8.2%	335,916,948	4,443,171,663	222,158,583	$196,939,735	2,871,042	(25,218,848)	222,158,583
1993	4,221,013,080	160,796,492	7.4%	326,121,057	4,707,930,628	235,396,531	$228,165,305	67,368,813	(7,231,227)	235,396,531
1994	4,472,534,097	103,062,645	6.9%	317,403,184	4,892,999,925	244,649,996	$226,381,027	123,318,383	(18,268,969)	244,649,996
1995	4,648,349,929	68,733,629	6.5%	306,730,512	5,023,814,071	251,190,704	$215,059,573	146,325,944	(36,131,131)	251,190,704
1996	4,772,623,367	72,076,504	6.3%	307,535,795	5,152,235,667	257,611,783	$198,473,757	126,397,253	(59,138,026)	257,611,783
1997	4,894,623,884	71,196,717	6.6%	325,429,715	5,291,250,316	264,562,516	$188,967,278	117,770,560	(75,595,238)	264,562,516
1998	5,026,687,800	53,649,540	6.9%	352,927,942	5,433,265,282	271,663,264	$177,797,934	124,148,394	(93,865,330)	271,663,264
1999	5,161,602,017	45,494,861	7.0%	365,559,035	5,572,655,913	278,632,796	$172,391,249	126,896,388	(106,241,547)	278,632,796
2000	5,294,023,118	29,799,403	7.5%	399,265,055	5,723,087,576	286,154,379	$161,514,864	131,715,461	(124,639,515)	286,154,379
2001	5,436,933,197	15,481,823	6.0%	325,867,121	5,778,282,141	288,914,107	$270,567,533	255,085,710	(18,346,574)	288,914,107
2002	5,489,368,034	14,021,843	4.9%	270,763,618	5,774,153,495	288,707,675	$273,408,998	259,387,154	(15,298,677)	288,707,675
2003	5,485,445,821	11,727,466	3.0%	164,167,438	5,661,340,725	283,067,036	$275,266,108	263,538,642	(7,800,928)	283,067,036
2004	5,378,273,689	23,187,564	4.8%	257,548,340	5,659,009,592	282,950,480	$278,709,201	255,521,637	(4,241,279)	282,950,480
2005	5,376,059,113	24,670,447	3.9%	210,499,198	5,611,228,758	280,561,438	$285,985,620	261,315,173	5,424,182	285,985,620
2006	5,330,667,320	23,895,805	5.0%	268,428,027	5,622,991,152	281,149,558	$288,881,843	264,986,038	7,732,286	288,881,843
2007	5,341,841,595	22,048,004	5.3%	282,684,134	5,646,573,732	282,328,687	$289,088,410	267,040,405	6,759,723	289,088,410
2008	5,364,245,046	17,580,514	9.9%	530,352,489	5,912,178,048	295,608,902	$264,359,328	246,778,815	(31,249,574)	295,608,902
2009	5,616,569,145	15,875,152	3.7%	206,412,929	5,838,857,226	291,942,861	$242,928,959	227,053,808	(49,013,902)	291,942,861
2010	5,546,914,365	12,401,366	3.4%	190,170,622	5,749,486,353	287,474,318	$210,822,682	198,421,316	(76,651,636)	287,474,318
2011	5,462,012,036	14,558,423	4.9%	267,372,253	5,743,942,711	287,197,136	$124,137,326	109,578,904	(163,059,809)	287,197,136
2012	5,456,745,575	16,096,355	4.8%	264,863,875	5,737,705,806	286,885,290	$125,202,024	109,105,669	(161,683,266)	286,885,290
2013	5,450,820,515	14,813,133	8.0%	437,250,692	5,902,884,341	295,144,217	$119,996,613	105,183,480	(175,147,604)	295,144,217
Totals		**3,844,928,325**		**9,285,045,439**		**7,522,233,640**	**7,741,831,077**	**3,891,557,561**	**219,597,437**	**8,990,654,157**

Appendix B: Trust Fund in Oregon if Established Next Year (Low Estimate)

Year	Beginning Balance	O&C and FS Receipts in Oregon	Target Return	Investment Income	Ending Balance	Distribution at 4%	Required Subsidy
2015	0	18,254,506	6.0%	1,090,992	19,345,498	773,820	17,480,686
2016	18,571,678	18,254,506	6.5%	2,393,702	39,219,886	1,568,795	16,685,710
2017	37,651,090	18,254,506	6.5%	3,633,864	59,539,460	2,381,578	15,872,927
2018	57,157,881	18,254,506	6.5%	4,901,805	80,314,192	3,212,568	15,041,938
2019	77,101,624	18,254,506	6.5%	6,198,148	101,554,278	4,062,171	14,192,335
2020	97,492,107	18,254,506	6.5%	7,523,530	123,270,143	4,930,806	13,323,700
2021	118,339,337	18,254,506	6.5%	8,878,600	145,472,443	5,818,898	12,435,608
2022	139,653,545	18,254,506	6.5%	10,264,023	168,172,074	6,726,883	11,527,623
2023	161,445,191	18,254,506	6.5%	11,680,480	191,380,177	7,655,207	10,599,299
2024	183,724,970	18,254,506	6.5%	13,128,666	215,108,141	8,604,326	9,650,180
2025	206,503,816	18,254,506	6.5%	14,609,291	239,367,612	9,574,704	8,679,801
2026	229,792,908	18,254,506	6.5%	16,123,082	264,170,495	10,566,820	7,687,686
2027	253,603,675	18,254,506	6.5%	17,670,782	289,528,963	11,581,159	6,673,347
2028	277,947,804	18,254,506	6.5%	19,253,150	315,455,460	12,618,218	5,636,287
2029	302,837,242	18,254,506	6.5%	20,870,964	341,962,711	13,678,508	4,575,997
2030	328,284,202	18,254,506	6.5%	22,525,016	369,063,724	14,762,549	3,491,957
2031	354,301,175	18,254,506	6.5%	24,216,119	396,771,800	15,870,872	2,383,634
2032	380,900,928	18,254,506	6.5%	25,945,103	425,100,537	17,004,021	1,250,484
2033	408,096,515	18,254,506	6.5%	27,712,816	454,063,837	18,162,553	91,952
2034	435,901,284	18,254,506	6.5%	29,520,126	483,675,916	19,347,037	(1,092,531)
2035	464,328,879	18,254,506	6.5%	31,367,920	513,951,305	20,558,052	(2,303,547)
2036	493,393,253	18,254,506	6.5%	33,257,104	544,904,863	21,796,195	(3,541,689)
2037	523,108,668	18,254,506	6.5%	35,188,606	576,551,780	23,062,071	(4,807,566)
2038	553,489,709	18,254,506	6.5%	37,163,374	608,907,588	24,356,304	(6,101,798)
2039	584,551,285	18,254,506	6.5%	39,182,376	641,988,167	25,679,527	(7,425,021)
2040	616,308,640	18,254,506	6.5%	41,246,604	675,809,750	27,032,390	(8,777,884)
2041	648,777,360	18,254,506	6.5%	43,357,071	710,388,937	28,415,557	(10,161,052)
2042	681,973,380	18,254,506	6.5%	45,514,813	745,742,698	29,829,708	(11,575,202)
2043	715,912,990	18,254,506	6.5%	47,720,887	781,888,383	31,275,535	(13,021,030)
2044	750,612,848	18,254,506	6.5%	49,976,378	818,843,731	32,753,749	(14,499,244)
2045	786,089,982	18,254,506	6.5%	52,282,392	856,626,879	34,265,075	(16,010,570)
2046	822,361,804	18,254,506	6.5%	54,640,060	895,256,370	35,810,255	(17,555,749)
2047	859,446,115	18,254,506	6.5%	57,050,540	934,751,161	37,390,046	(19,135,541)
2048	897,361,115	18,254,506	6.5%	59,515,015	975,130,636	39,005,225	(20,750,720)
2049	936,125,410	18,254,506	6.5%	62,034,695	1,016,414,610	40,656,584	(22,402,079)
2050	975,758,026	18,254,506	6.5%	64,610,815	1,058,623,346	42,344,934	(24,090,428)

Appendix C: Trust Fund in Oregon if Established Next Year (High Estimate)

Year	Beginning Balance	O&C and FS Receipts in Oregon	Target Return	Investment Income	Ending Balance	Distribution at 4%	Required Subsidy
2015	0	20,000,000	6.5%	1,300,000	21,300,000	852,000	19,148,000
2016	20,448,000	40,000,000	6.5%	3,929,120	64,377,120	2,575,085	37,424,915
2017	61,802,035	80,000,000	6.5%	9,217,132	151,019,167	6,040,767	73,959,233
2018	144,978,401	92,000,000	6.5%	15,403,596	252,381,997	10,095,280	81,904,720
2019	242,286,717	92,000,000	6.5%	21,728,637	356,015,354	14,240,614	77,759,386
2020	341,774,739	92,000,000	6.5%	28,195,358	461,970,097	18,478,804	73,521,196
2021	443,491,294	92,000,000	6.5%	34,806,934	570,298,228	22,811,929	69,188,071
2022	547,486,299	92,000,000	6.5%	41,566,609	681,052,908	27,242,116	64,757,884
2023	653,810,792	92,000,000	6.5%	48,477,701	794,288,493	31,771,540	60,228,460
2024	762,516,953	92,000,000	6.5%	55,543,602	910,060,555	36,402,422	55,597,578
2025	873,658,133	92,000,000	6.5%	62,767,779	1,028,425,912	41,137,036	50,862,964
2026	987,288,875	92,000,000	6.5%	70,153,777	1,149,442,652	45,977,706	46,022,294
2027	1,103,464,946	92,000,000	6.5%	77,705,221	1,273,170,168	50,926,807	41,073,193
2028	1,222,243,361	92,000,000	6.5%	85,425,818	1,399,669,179	55,986,767	36,013,233
2029	1,343,682,412	92,000,000	6.5%	93,319,357	1,529,001,769	61,160,071	30,839,929
2030	1,467,841,698	92,000,000	6.5%	101,389,710	1,661,231,409	66,449,256	25,550,744
2031	1,594,782,152	92,000,000	6.5%	109,640,840	1,796,422,992	71,856,920	20,143,080
2032	1,724,566,072	92,000,000	6.5%	118,076,795	1,934,642,867	77,385,715	14,614,285
2033	1,857,257,153	92,000,000	6.5%	126,701,715	2,075,958,867	83,038,355	8,961,645
2034	1,992,920,513	92,000,000	6.5%	135,519,833	2,220,440,346	88,817,614	3,182,386
2035	2,131,622,732	92,000,000	6.5%	144,535,478	2,368,158,210	94,726,328	(2,726,328)
2036	2,273,431,881	92,000,000	6.5%	153,753,072	2,519,184,954	100,767,398	(8,767,398)
2037	2,418,417,556	92,000,000	6.5%	163,177,141	2,673,594,697	106,943,788	(14,943,788)
2038	2,566,650,909	92,000,000	6.5%	172,812,309	2,831,463,218	113,258,529	(21,258,529)
2039	2,718,204,689	92,000,000	6.5%	182,663,305	2,992,867,994	119,714,720	(27,714,720)
2040	2,873,153,274	92,000,000	6.5%	192,734,963	3,157,888,237	126,315,529	(34,315,529)
2041	3,031,572,708	92,000,000	6.5%	203,032,226	3,326,604,934	133,064,197	(41,064,197)
2042	3,193,540,736	92,000,000	6.5%	213,560,148	3,499,100,884	139,964,035	(47,964,035)
2043	3,359,136,849	92,000,000	6.5%	224,323,895	3,675,460,744	147,018,430	(55,018,430)
2044	3,528,442,314	92,000,000	6.5%	235,328,750	3,855,771,065	154,230,843	(62,230,843)
2045	3,701,540,222	92,000,000	6.5%	246,580,114	4,040,120,336	161,604,813	(69,604,813)
2046	3,878,515,523	92,000,000	6.5%	258,083,509	4,228,599,032	169,143,961	(77,143,961)
2047	4,059,455,071	92,000,000	6.5%	269,844,580	4,421,299,650	176,851,986	(84,851,986)
2048	4,244,447,664	92,000,000	6.5%	281,869,098	4,618,316,762	184,732,670	(92,732,670)
2049	4,433,584,092	92,000,000	6.5%	294,162,966	4,819,747,058	192,789,882	(100,789,882)
2050	4,626,957,176	92,000,000	6.5%	306,732,216	5,025,689,392	201,027,576	(109,027,576)

Appendix D: Trust Fund Nationally if Established Instead of PILT

Year	Beginning Balance	O&C and FS Receipts in Oregon	Return on PWMTF	Investment Income	Ending Balance	Distribution at 4%	Actual Payment (PILT, O&C, FS, SRS)	Actual Subsidy (PILT, Transition Payments, SRS)	Cost of Establishing a Trust to the Treasury	Payment Under Trust
1977	0	330,145,424	9.1%	30,084,616	360,230,040	14,409,202	$381,433,735	52,186,380	367,024,533	381,433,735
1978	345,820,838	325,089,736	6.7%	45,195,779	716,106,353	35,805,318	$364,744,846	37,799,042	328,939,528	364,744,846
1979	680,301,036	373,774,149	8.6%	90,171,120	1,144,246,304	57,212,315	$459,238,216	85,861,141	402,025,901	459,238,216
1980	1,087,033,989	377,907,013	10.4%	152,696,315	1,617,637,316	80,881,866	$464,219,948	85,797,988	383,338,082	464,219,948
1981	1,536,755,451	330,555,742	11.7%	219,321,176	2,086,632,368	104,331,618	$415,163,269	83,756,707	310,831,651	415,163,269
1982	1,982,300,749	269,953,033	12.5%	282,409,120	2,534,662,902	126,733,145	$352,636,619	82,370,610	225,903,474	352,636,619
1983	2,407,929,757	180,132,679	13.6%	350,806,785	2,938,869,221	146,943,461	$278,926,280	98,648,123	131,982,819	278,926,280
1984	2,791,925,760	268,096,686	12.2%	372,417,098	3,432,439,544	171,621,977	$368,916,904	102,638,957	197,294,927	368,916,904
1985	3,260,817,566	286,123,528	11.4%	405,826,137	3,952,767,231	197,638,362	$385,401,861	98,749,970	187,763,499	385,401,861
1986	3,755,128,869	333,894,326	10.0%	410,493,199	4,499,516,395	224,975,820	$434,498,124	100,178,054	209,522,304	434,498,124
1987	4,274,540,575	353,720,305	8.8%	405,290,451	5,033,551,331	251,677,567	$466,419,512	112,137,052	214,741,945	466,419,512
1988	4,781,873,764	426,144,899	8.0%	416,437,876	5,624,456,539	281,222,827	$539,143,003	112,119,467	257,920,176	539,143,003
1989	5,343,233,712	470,828,742	7.3%	427,163,849	6,241,226,302	312,061,315	$589,771,372	117,962,491	277,710,057	589,771,372
1990	5,929,164,987	447,993,890	8.5%	539,799,451	6,916,958,327	345,847,916	$572,352,966	123,530,119	226,505,050	572,352,966
1991	6,571,110,411	362,592,426	8.8%	607,761,689	7,541,464,526	377,073,226	$553,555,109	190,962,683	176,481,883	553,555,109
1992	7,164,391,299	366,505,398	8.2%	615,923,776	8,146,820,473	407,341,024	$572,265,668	205,760,270	164,924,644	572,265,668
1993	7,739,479,449	318,155,916	7.4%	599,698,485	8,657,333,851	432,866,693	$601,838,265	283,682,349	168,971,572	601,838,265
1994	8,224,467,158	263,381,138	6.9%	588,790,976	9,076,639,272	453,831,964	$614,182,379	350,801,242	160,350,415	614,182,379
1995	8,622,807,308	198,614,810	6.5%	573,617,002	9,395,039,119	469,751,956	$584,499,163	385,884,354	114,747,207	584,499,163
1996	8,925,287,163	198,866,526	6.3%	579,190,442	9,703,344,132	485,167,207	$567,107,216	368,240,690	81,940,009	567,107,216
1997	9,218,176,925	179,629,702	6.6%	615,875,155	10,013,681,782	500,684,089	$543,683,804	364,054,103	42,999,715	543,683,804
1998	9,512,997,693	164,374,906	6.9%	672,281,182	10,349,653,780	517,482,689	$534,135,703	369,760,797	16,653,014	534,135,703
1999	9,832,171,091	139,207,831	7.0%	700,030,697	10,671,409,619	533,570,481	$405,269,693	266,061,862	(128,300,788)	533,570,481
2000	10,137,839,138	113,382,324	7.5%	768,799,952	11,020,021,413	551,001,071	$393,808,385	280,426,062	(157,192,686)	551,001,071
2001	10,469,020,342	76,022,282	6.0%	630,231,314	11,175,273,938	558,763,697	$695,221,719	619,199,437	136,458,022	695,221,719
2002	10,616,510,241	61,322,532	4.9%	525,343,233	11,203,176,006	560,158,800	$695,191,812	633,869,281	135,033,012	695,191,812
2003	10,643,017,206	67,161,514	3.0%	319,848,495	11,030,027,216	551,501,361	$725,191,394	658,029,880	173,690,033	725,191,394
2004	10,478,525,855	81,479,019	4.8%	503,514,068	11,063,518,942	553,175,947	$738,490,778	657,011,759	185,314,831	738,490,778
2005	10,510,342,995	88,462,960	3.9%	413,099,773	11,011,905,728	550,595,286	$753,659,234	665,196,274	203,063,948	753,659,234
2006	10,461,310,442	92,773,384	5.0%	529,083,667	11,083,167,494	554,158,375	$764,336,433	671,563,049	210,178,058	764,336,433
2007	10,529,009,119	75,115,222	5.3%	558,851,491	11,162,975,832	558,148,792	$762,527,207	687,411,985	204,378,415	762,527,207
2008	10,604,827,040	69,036,194	9.9%	1,051,856,822	11,725,720,056	586,286,003	$999,945,367	930,909,173	413,659,364	999,945,367
2009	11,139,434,053	57,616,638	3.7%	410,339,794	11,607,390,485	580,369,524	$953,623,055	896,006,417	373,253,531	953,623,055
2010	11,027,020,961	54,895,884	3.4%	379,085,327	11,461,002,171	573,050,109	$861,549,794	806,653,910	288,499,685	861,549,794
2011	10,887,952,063	68,058,478	4.9%	534,884,604	11,490,895,144	574,544,757	$747,192,534	679,134,056	172,647,777	747,192,534
2012	10,916,350,387	65,668,662	4.8%	531,486,229	11,513,505,278	575,675,264	$750,128,617	684,459,955	174,453,353	750,128,617
2013	10,937,830,014	61,652,797	8.0%	879,958,625	11,879,441,436	593,972,072	$737,833,288	676,180,491	143,861,216	737,833,288
Totals		**7,998,336,688**		**17,737,665,769**		**14,450,533,093**	**21,628,103,273**	**13,624,996,179**	**7,177,570,180**	**21,913,596,747**

Appendix E: Trust Fund Nationally if Established Next Year (Low Estimate)

Year	Beginning Balance	O&C and FS Receipts in Oregon	Target Return	Investment Income	Ending Balance	Distribution at 4%	Required Subsidy
2015	0	71,217,753	6.0%	4,256,375	75,474,128	3,018,965	68,198,788
2016	72,455,163	71,217,753	6.5%	9,338,740	153,011,656	6,120,466	65,097,287
2017	146,891,190	71,217,753	6.5%	14,177,081	232,286,024	9,291,441	61,926,312
2018	222,994,583	71,217,753	6.5%	19,123,802	313,336,138	12,533,446	58,684,308
2019	300,802,693	71,217,753	6.5%	24,181,329	396,201,775	15,848,071	55,369,682
2020	380,353,704	71,217,753	6.5%	29,352,145	480,923,602	19,236,944	51,980,809
2021	461,686,658	71,217,753	6.5%	34,638,787	567,543,197	22,701,728	48,516,025
2022	544,841,469	71,217,753	6.5%	40,043,849	656,103,072	26,244,123	44,973,630
2023	629,858,949	71,217,753	6.5%	45,569,986	746,646,688	29,865,868	41,351,886
2024	716,780,820	71,217,753	6.5%	51,219,907	839,218,481	33,568,739	37,649,014
2025	805,649,742	71,217,753	6.5%	56,996,387	933,863,882	37,354,555	33,863,198
2026	896,509,327	71,217,753	6.5%	62,902,260	1,030,629,340	41,225,174	29,992,580
2027	989,404,166	71,217,753	6.5%	68,940,425	1,129,562,344	45,182,494	26,035,259
2028	1,084,379,851	71,217,753	6.5%	75,113,844	1,230,711,448	49,228,458	21,989,295
2029	1,181,482,990	71,217,753	6.5%	81,425,548	1,334,126,291	53,365,052	17,852,701
2030	1,280,761,240	71,217,753	6.5%	87,878,635	1,439,857,627	57,594,305	13,623,448
2031	1,382,263,322	71,217,753	6.5%	94,476,270	1,547,957,345	61,918,294	9,299,459
2032	1,486,039,052	71,217,753	6.5%	101,221,692	1,658,478,497	66,339,140	4,878,613
2033	1,592,139,357	71,217,753	6.5%	108,118,212	1,771,475,323	70,859,013	358,740
2034	1,700,616,310	71,217,753	6.5%	115,169,214	1,887,003,277	75,480,131	(4,262,378)
2035	1,811,523,146	71,217,753	6.5%	122,378,158	2,005,119,057	80,204,762	(8,987,009)
2036	1,924,914,295	71,217,753	6.5%	129,748,583	2,125,880,631	85,035,225	(13,817,472)
2037	2,040,845,406	71,217,753	6.5%	137,284,105	2,249,347,265	89,973,891	(18,756,137)
2038	2,159,373,374	71,217,753	6.5%	144,988,423	2,375,579,550	95,023,182	(23,805,429)
2039	2,280,556,368	71,217,753	6.5%	152,865,318	2,504,639,439	100,185,578	(28,967,824)
2040	2,404,453,862	71,217,753	6.5%	160,918,655	2,636,590,270	105,463,611	(34,245,858)
2041	2,531,126,659	71,217,753	6.5%	169,152,387	2,771,496,799	110,859,872	(39,642,119)
2042	2,660,636,927	71,217,753	6.5%	177,570,554	2,909,425,234	116,377,009	(45,159,256)
2043	2,793,048,225	71,217,753	6.5%	186,177,289	3,050,443,267	122,017,731	(50,799,978)
2044	2,928,425,536	71,217,753	6.5%	194,976,814	3,194,620,103	127,784,804	(56,567,051)
2045	3,066,835,299	71,217,753	6.5%	203,973,448	3,342,026,500	133,681,060	(62,463,307)
2046	3,208,345,440	71,217,753	6.5%	213,171,608	3,492,734,801	139,709,392	(68,491,639)
2047	3,353,025,409	71,217,753	6.5%	222,575,806	3,646,818,968	145,872,759	(74,655,006)
2048	3,500,946,209	71,217,753	6.5%	232,190,658	3,804,354,620	152,174,185	(80,956,432)
2049	3,652,180,435	71,217,753	6.5%	242,020,882	3,965,419,070	158,616,763	(87,399,010)
2050	3,806,802,308	71,217,753	6.5%	252,071,304	4,130,091,365	165,203,655	(93,985,901)

Appendix F: Trust Fund Nationally if Established Next Year (High Estimate)

Year	Beginning Balance	O&C and FS Receipts in Oregon	Target Return	Investment Income	Ending Balance	Distribution at 4%	Required Subsidy
2015	0	65,000,000	6.5%	4,225,000	69,225,000	2,769,000	62,231,000
2016	66,456,000	85,000,000	6.5%	9,844,640	161,300,640	6,452,026	78,547,974
2017	154,848,614	145,000,000	6.5%	19,490,160	319,338,774	12,773,551	132,226,449
2018	306,565,223	145,000,000	6.5%	29,351,740	480,916,963	19,236,679	125,763,321
2019	461,680,284	145,000,000	6.5%	39,434,218	646,114,503	25,844,580	119,155,420
2020	620,269,923	145,000,000	6.5%	49,742,545	815,012,468	32,600,499	112,399,501
2021	782,411,969	145,000,000	6.5%	60,281,778	987,693,747	39,507,750	105,492,250
2022	948,185,997	145,000,000	6.5%	71,057,090	1,164,243,087	46,569,723	98,430,277
2023	1,117,673,363	145,000,000	6.5%	82,073,769	1,344,747,132	53,789,885	91,210,115
2024	1,290,957,247	145,000,000	6.5%	93,337,221	1,529,294,468	61,171,779	83,828,221
2025	1,468,122,689	145,000,000	6.5%	104,852,975	1,717,975,664	68,719,027	76,280,973
2026	1,649,256,637	145,000,000	6.5%	116,626,681	1,910,883,319	76,435,333	68,564,667
2027	1,834,447,986	145,000,000	6.5%	128,664,119	2,108,112,105	84,324,484	60,675,516
2028	2,023,787,621	145,000,000	6.5%	140,971,195	2,309,758,816	92,390,353	52,609,647
2029	2,217,368,464	145,000,000	6.5%	153,553,950	2,515,922,414	100,636,897	44,363,103
2030	2,415,285,517	145,000,000	6.5%	166,418,559	2,726,704,076	109,068,163	35,931,837
2031	2,617,635,913	145,000,000	6.5%	179,571,334	2,942,207,247	117,688,290	27,311,710
2032	2,824,518,957	145,000,000	6.5%	193,018,732	3,162,537,689	126,501,508	18,498,492
2033	3,036,036,182	145,000,000	6.5%	206,767,352	3,387,803,534	135,512,141	9,487,859
2034	3,252,291,392	145,000,000	6.5%	220,823,941	3,618,115,333	144,724,613	275,387
2035	3,473,390,720	145,000,000	6.5%	235,195,397	3,853,586,116	154,143,445	(9,143,445)
2036	3,699,442,672	145,000,000	6.5%	249,888,774	4,094,331,445	163,773,258	(18,773,258)
2037	3,930,558,188	145,000,000	6.5%	264,911,282	4,340,469,470	173,618,779	(28,618,779)
2038	4,166,850,691	145,000,000	6.5%	280,270,295	4,592,120,986	183,684,839	(38,684,839)
2039	4,408,436,146	145,000,000	6.5%	295,973,350	4,849,409,496	193,976,380	(48,976,380)
2040	4,655,433,116	145,000,000	6.5%	312,028,153	5,112,461,269	204,498,451	(59,498,451)
2041	4,907,962,818	145,000,000	6.5%	328,442,583	5,381,405,401	215,256,216	(70,256,216)
2042	5,166,149,185	145,000,000	6.5%	345,224,697	5,656,373,882	226,254,955	(81,254,955)
2043	5,430,118,927	145,000,000	6.5%	362,382,730	5,937,501,657	237,500,066	(92,500,066)
2044	5,700,001,591	145,000,000	6.5%	379,925,103	6,224,926,694	248,997,068	(103,997,068)
2045	5,975,929,626	145,000,000	6.5%	397,860,426	6,518,790,052	260,751,602	(115,751,602)
2046	6,258,038,450	145,000,000	6.5%	416,197,499	6,819,235,949	272,769,438	(127,769,438)
2047	6,546,466,511	145,000,000	6.5%	434,945,323	7,126,411,834	285,056,473	(140,056,473)
2048	6,841,355,361	145,000,000	6.5%	454,113,098	7,440,468,460	297,618,738	(152,618,738)
2049	7,142,849,721	145,000,000	6.5%	473,710,232	7,761,559,953	310,462,398	(165,462,398)
2050	7,451,097,555	145,000,000	6.5%	493,746,341	8,089,843,896	323,593,756	(178,593,756)

Appendix G: Natural Resources Trust Established to Implement GOMESA Expansion (FY 2017)

Fiscal Year	Beginning Balance	O&C and FS Receipts in Oregon	Target Return	Investment Income	Ending Balance	Distribution at 4% plus current GOMEA Payment
2017	0	460,000,000	6.5%	29,900,000	489,900,000	59,596,000
2018	430,304,000	460,000,000	6.5%	57,869,760	948,173,760	77,926,950
2019	870,246,810	460,000,000	6.5%	86,466,043	1,416,712,852	96,668,514
2020	1,320,044,338	460,000,000	6.5%	115,702,882	1,895,747,220	115,829,889
2021	1,779,917,331	460,000,000	6.5%	145,594,627	2,385,511,958	135,420,478
2022	2,250,091,480	460,000,000	6.5%	176,155,946	2,886,247,426	155,449,897
2023	2,730,797,529	460,000,000	6.5%	207,401,839	3,398,199,368	175,927,975
2024	3,222,271,393	460,000,000	6.5%	239,347,641	3,921,619,034	196,864,761
2025	3,724,754,273	460,000,000	6.5%	272,009,028	4,456,763,300	218,270,532
2026	4,238,492,768	460,000,000	6.5%	305,402,030	5,003,894,798	240,155,792
2027	4,763,739,006	460,000,000	6.5%	339,543,035	5,563,282,042	262,531,282
2028	5,300,750,760	460,000,000	6.5%	374,448,799	6,135,199,559	285,407,982
2029	5,849,791,577	460,000,000	6.5%	410,136,453	6,719,928,030	308,797,121
2030	6,411,130,908	460,000,000	6.5%	446,623,509	7,317,754,417	332,710,177
2031	6,985,044,241	460,000,000	6.5%	483,927,876	7,928,972,116	357,158,885
2032	7,571,813,232	460,000,000	6.5%	522,067,860	8,553,881,092	382,155,244
2033	8,171,725,848	460,000,000	6.5%	561,062,180	9,192,788,028	407,711,521
2034	8,785,076,507	460,000,000	6.5%	600,929,973	9,846,006,480	433,840,259
2035	9,412,166,221	460,000,000	6.5%	641,690,804	10,513,857,025	460,554,281
2036	10,053,302,744	460,000,000	6.5%	683,364,678	11,196,667,423	487,866,697
2037	10,708,800,726	460,000,000	6.5%	725,972,047	11,894,772,773	515,790,911
2038	11,378,981,862	460,000,000	6.5%	769,533,821	12,608,515,683	544,340,627
2039	12,064,175,056	460,000,000	6.5%	814,071,379	13,338,246,434	573,529,857
2040	12,764,716,577	460,000,000	6.5%	859,606,577	14,084,323,154	603,372,926
2041	13,480,950,228	460,000,000	6.5%	906,161,765	14,847,111,993	633,884,480
2042	14,213,227,513	460,000,000	6.5%	953,759,788	15,626,987,302	665,079,492
2043	14,961,907,810	460,000,000	6.5%	1,002,424,008	16,424,331,817	696,973,273
2044	15,727,358,544	460,000,000	6.5%	1,052,178,305	17,239,536,850	729,581,474
2045	16,509,955,376	460,000,000	6.5%	1,103,047,099	18,073,002,475	762,920,099
2046	17,310,082,376	460,000,000	6.5%	1,155,055,354	18,925,137,731	797,005,509
2047	18,128,132,222	460,000,000	6.5%	1,208,228,594	19,796,360,816	831,854,433
2048	18,964,506,383	460,000,000	6.5%	1,262,592,915	20,687,099,298	867,483,972
2049	19,819,615,326	460,000,000	6.5%	1,318,174,996	21,597,790,322	903,911,613
2050	20,693,878,710	460,000,000	6.5%	1,375,002,116	22,528,880,826	941,155,233
2051	21,587,725,593	460,000,000	6.5%	1,433,102,164	23,480,827,756	979,233,110
2052	22,501,594,646	460,000,000	6.5%	1,492,503,652	24,454,098,298	1,018,163,932

Appendix H: Natural Resources Trust Established to Implement GOMESA Expansion and the FAIR Act Revenue Sharing Proposal

Year	Beginning Balance	O&C and FS Receipts in Oregon	Target Return	Investment Income	Ending Balance	Distribution at 4%
2015	0	1,060,000,000	6.5%	68,900,000	1,128,900,000	85,156,000
2016	1,043,744,000	1,060,000,000	6.5%	136,743,360	2,240,487,360	129,619,494
2017	2,110,867,866	1,060,000,000	6.5%	206,106,411	3,376,974,277	175,078,971
2018	3,201,895,306	1,060,000,000	6.5%	277,023,195	4,538,918,501	221,556,740
2019	4,317,361,761	1,060,000,000	6.5%	349,528,514	5,726,890,275	269,075,611
2020	5,457,814,664	1,060,000,000	6.5%	423,657,953	6,941,472,617	317,658,905
2021	6,623,813,713	1,060,000,000	6.5%	499,447,891	8,183,261,604	367,330,464
2022	7,815,931,140	1,060,000,000	6.5%	576,935,524	9,452,866,664	418,114,667
2023	9,034,751,997	1,060,000,000	6.5%	656,158,880	10,750,910,877	470,036,435
2024	10,280,874,442	2,460,000,000	6.5%	828,156,839	13,569,031,281	582,761,251
2025	12,986,270,029	2,460,000,000	6.5%	1,004,007,552	16,450,277,581	698,011,103
2026	15,752,266,478	2,460,000,000	6.5%	1,183,797,321	19,396,063,799	815,842,552
2027	18,580,221,247	2,460,000,000	6.5%	1,367,614,381	22,407,835,628	936,313,425
2028	21,471,522,203	2,460,000,000	6.5%	1,555,548,943	25,487,071,146	1,059,482,846
2029	24,427,588,301	2,460,000,000	6.5%	1,747,693,240	28,635,281,540	1,185,411,262
2030	27,449,870,278	2,460,000,000	6.5%	1,944,141,568	31,854,011,847	1,314,160,474
2031	30,539,851,373	2,460,000,000	6.5%	2,144,990,339	35,144,841,712	1,445,793,668
2032	33,699,048,043	2,460,000,000	6.5%	2,350,338,123	38,509,386,166	1,580,375,447
2033	36,929,010,720	2,460,000,000	6.5%	2,560,285,697	41,949,296,416	1,717,971,857
2034	40,231,324,560	1,460,000,000	6.5%	2,709,936,096	44,401,260,656	1,816,050,426
2035	42,585,210,230	1,460,000,000	6.5%	2,862,938,665	46,908,148,895	1,916,325,956
2036	44,991,822,939	1,460,000,000	6.5%	3,019,368,491	49,471,191,430	2,018,847,657
2037	47,452,343,773	1,460,000,000	6.5%	3,179,302,345	52,091,646,118	2,123,665,845
2038	49,967,980,273	1,460,000,000	6.5%	3,342,818,718	54,770,798,991	2,230,831,960
2039	52,539,967,032	1,460,000,000	6.5%	3,509,997,857	57,509,964,889	2,340,398,596
2040	55,169,566,293	1,460,000,000	6.5%	3,680,921,809	60,310,488,102	2,452,419,524
2041	57,858,068,578	1,460,000,000	6.5%	3,855,674,458	63,173,743,036	2,566,949,721
2042	60,606,793,314	1,460,000,000	6.5%	4,034,341,565	66,101,134,880	2,684,045,395
2043	63,417,089,484	1,460,000,000	6.5%	4,217,010,816	69,094,100,301	2,803,764,012
2044	66,290,336,289	1,460,000,000	6.5%	4,403,771,859	72,154,108,148	2,926,164,326
2045	69,227,943,822	1,460,000,000	6.5%	4,594,716,348	75,282,660,170	3,051,306,407
2046	72,231,353,763	1,460,000,000	6.5%	4,789,937,995	78,481,291,758	3,179,251,670
2047	75,302,040,088	1,460,000,000	6.5%	4,989,532,606	81,751,572,693	3,310,062,908
2048	78,441,509,786	1,460,000,000	6.5%	5,193,598,136	85,095,107,922	3,443,804,317
2049	81,651,303,605	1,460,000,000	6.5%	5,402,234,734	88,513,538,339	3,580,541,534
2050	84,932,996,805	1,460,000,000	6.5%	5,615,544,792	92,008,541,598	3,720,341,664

Endnotes

[1] Alaska Permanent Fund Corporation (APFC), "An Alaskan's Guide to the Permanent Fund" (2009), downloaded from http://www.apfc.org/home/Media/publications/2009AlaskansGuide.pdf; Amy Williams, "New Mexico's Land Grant and Severance Tax Permanent Funds: Renewable Wealth from Non-Renewable Resources," Natural Resources Journal 48:3 (Summer 2008): 719-743, downloaded from http://lawschool.unm.edu/nrj/volumes/48/v48_no3.php; Wyoming Taxpayers Association, "Permanent Mineral Trust Fund," accessed at http://www.wyotax.org/PMTF.aspx.

[2] Johnson, Simon. "The rise of sovereign wealth funds." Finance and development 44.3 (2007): 56.

[3] We assume that receipts from O&C lands and the U.S. Forest Service are invested into a National Resources Trust beginning in 1977. The investment performance on the Trust is assumed to be identical to the actual performance on an annual basis for the Wyoming Permanent Mineral Trust Fund over the same period. The Wyoming Permanent Mineral Trust Fund and its peers including the Alaska Permanent Fund and New Mexico's Severance Tax Trust Fund are managed for a six percent return annually and distributions are intended to allow the principal balance to grow with inflation.

[4] The main difference is that the county government share of payments is not restricted to roads but can be used for any governmental purpose. See: O&C Lands Act, Pub. L. No. 74-405, tit. II(a) (1937).

[5] Revenue sharing payments are estimated from historic timber cut and sold reports from the Forest Service at the national level. Source: USDA Forest Service. All values in this paragraph are offered in real dollars. See http://headwaterseconomics.org/land/commercial-activities-national-forests.

[6] U.S. Fish and Wildlife Service. National Wildlife Refuge System. Refuge Revenue Sharing. http://www.fws.gov/refuges/realty/rrs.html.

[7] Gorte, Ross and Lynne M. Corn. 2012. Compensating State and Local Governments for the Tax-Exempt Status of Federal Lands: What Is Fair and Consistent? Congressional Research Service R42439, March 22, 2012. http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R42439.pdf.

[8] Oregon Secretary of State on county government financial condition. http://www.sos.state.or.us/audits/pages/state_audits/full/2012/2012-17.pdf.

[9] Oregon Department of Revenue. A Brief History of Oregon Property Taxation. 150-303-405-1 (Rev. 6-09). http://www.oregon.gov/dor/STATS/docs/303-405-1.pdf.

[10] Mathur, S., 2008. Impact of Transportation and Other Jurisdictional-Level Infrastructure and Services on Housing Prices. Journal of Urban Planning and Development 134, 32-41

[11] Restoring Healthy Forests for Healthy Communities Act of 2013 (H.R. 1526).

[12] United States Public Land Law Review Commission. 1970. "One third of the Nation's land: a report to the President and to the Congress." Washington, D.C.:273.

[13] Schuster, Ervin G. 1995. "PILT—its purpose and performance." *Journal of Forestry*. 93(8):31-35 and Corn, M. Lynne. 2008. *PILT (Payments in Lieu of Taxes): Somewhat Simplified*. Congressional Research Service (CRS) Report RL-31392.

[14] Gorte, Ross W. Reauthorizing the Secure Rural Schools and Community Self-Determination Act of

2000.Congressional Research Service (CRS-R41303). June 2010. Washington, D.C.; The formula is described in a technical document titled "Calculating Payments" on the Secure Rural Schools website: http://www.fs.fed.us/srs/docs/calculations.pdf (last accessed 11/22/14).

[15]McGranahan, D.A., et al. (2010). "The Rural Growth Trifecta: Outdoor Amenities, Creative Class and Entrepreneurial Context." Journal of Economic Geography pp 1-29. Lorah, P., R. Southwick, et al. (2003). "Environmental Protection, Population Change, and Economic Development in the Rural Western United States." Population and Environment 24(3): 255-272. McGranahan, D. A. (1999). "Natural Amenities Drive Rural Population Change." E. R. S. U.S. Department of Agriculture. Washington, D.C. Haas, W. H., W. J. Serow, et al. (2002). "The Baby Boom, Amenity Retirement Migration, and Retirement Communities: Will the Golden Age of Retirement Continue?" Research on Aging 24(1): 150-164. Johnson, J. D., R. Rasker, et al. (1995). "The role of economic and quality of life values in rural business location." Journal of Rural Studies 11(4): 405-416. Beyers, W. and D. Lindahl (1996). "Lone eagles and high fliers in the rural producer services." Rural Development Perspectives 11: 2-10. Mathur, V. K., S. H. Stein, et al. (2005). "Do amenities matter in attracting knowledge workers for regional economic development?*." Papers in Regional Science 84(2): 251-269. McGranahan, D. A. (1999). "Natural Amenities Drive Rural Population Change." USDA ERS. Washington, D.C. Haas, W. H., W. J. Serow, et al. (2002). "The Baby Boom, Amenity Retirement Migration, and Retirement Communities: Will the Golden Age of Retirement Continue?" Research on Aging 24(1): 150-164.

[16]Moretti, Enrico. The new geography of jobs. Houghton Mifflin Harcourt, 2012.

[17] Woods, Michael. Rural geography: Processes, responses and experiences in rural restructuring. Sage, 2004.

[18] Fixing America's Inequities with Revenues Act of 2013 or the `FAIR Act of 2013.' July 10, 2013. http://thomas.loc.gov/cgi-bin/query/z?c113:S.+1273:

[19] Rep Hastings in hearing on OCS revenue sharing. http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg67650/html/CHRG-112hhrg67650.htm.

[20] For example the Alaska Permanent Fund is managed to distribute a Percent of Market Value (POMV) to ensure the value of the Trust increases with inflation. Alaska Permanent Fund Corporation, About APFC. Percent of Market Valuation. http://www.apfc.org/home/Content/aboutAPFC/pomvIndex.cfm.

[21] See for example S.2626 - Fair Share Act of 2014. https://www.congress.gov/bill/113th-congress/senate-bill/2626.

[22] For a summary of how payments will change county by county, see http://headwaterseconomics.org/wphw/wp-content/uploads/CountyPayments_Without_SRS_Explanation.pdf.