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# LOCAL ALLOCATIONS OF PAYMENTS IN-LIEU OF TAXES AND INDIRECT STATE AIDS: THEIR CONTRIBUTION TO CREATING NEGATIVE FISCAL IMPACTS ATTRIBUTED TO FEDERAL AND STATE WILDLIFE LANDS*

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## Introduction

Since the passage of the National Forest Revenue Act of 1908 a continuing policy debate has raged over the fiscal impact of federal natural resource lands on local units of government. In recent years the debate has been extended to state natural resource lands. Local governments have continued to question the adequacy of federal and state payments to compensate for lost tax revenues and imposed service burdens. The position of the federal government and a preponderant number of state governments is that payments in-lieu of taxes must not create local windfalls. Under such operating guidelines, for an increase in payments to be justified, a negative fiscal impact must be demonstrated. The federal and state governments have commissioned quantitative analyses to measure the local fiscal impact associated with their natural resource lands: Advisory Commission on Intergovernmental Relations [1, 2], Barron and Jansma [3], Federal Real Estate Board [6], Legislative Commission on Minnesota Resources [8], Lawton [7], Loomer and Munger [9], U.S. Commission on Organization of the Executive Branch of the Government [12], U.S. Department of Agriculture [13], U.S. House Committee on Interior and Insular Affairs [4], and the University of Wisconsin [16]. Generally, these analyses have supported the conclusion that in total, local governments are not negatively impacted by the presence of federal or state natural resource lands. However, the U.S. Congress passed "The Payments In-Lieu of Taxes Act of 1976" [15] which increased the guaranteed minimal level of payments. States [10] have been under similar pressure to increase their payments. These increases were based on local governments' insistence that the analytical results were incorrect and that severe negative fiscal impacts are associated with federal and state natural resource lands.

These policy actions directly question the merits of fiscal impact evaluation. Either all previous evaluations are in error, or they have overlooked important dynamics of fiscal impacts. The discussion which follows contends previous studies have overlooked local factors which contribute significantly to the creation of negative fiscal impacts.

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**Background**

A total cost-benefit, as recommended by the Federal Real Estate Board[6], is conceptually the most complete analytical approach to evaluating the fiscal impact associated with publicly owned natural resource lands. Operationally, the measurement of indirect costs and benefits associated with natural resource lands has proven to be an impossible undertaking. The result has been two very distinct analytical approaches to the evaluation of the local fiscal impact associated with federal and state resource lands. One approach is an evaluation of the total fiscal impact. The argument is made that the total benefits and costs associated with natural resource lands become institutionalized over time. Based on this, the hypothesis is formulated that as the percent of public resource lands in a local governmental jurisdiction increases, there is a measurable change in the rate of spending for local public services and in the local tax rates. Barron and Jansma [3] studied three Pennsylvania counties and rejected the hypothesis that local governments are placed at an economic disadvantage as a result of state and federal natural resource lands. Neither increasing tax rates or increasing local government spending were found. The Advisory Commission on Intergovernmental Relations [2] used a similar approach to evaluate the total impact on spending and taxes for counties with national forest lands. The study found there was no systematic variation in local tax rates or local expenditures and the extensiveness of federal forest lands.

The second approach is to estimate the revenue and tax changes for local units of government with natural resource lands within their boundaries. Williams [17, 18] estimated both revenue changes and in-kind benefits for counties with national forest lands. The net benefits were calculated as the difference between the lost property tax revenues and the combination of federal cash payments and payments in-kind. The cash payments by themselves were found deficient. Only after the payments in-kind were included did the federal lands compensate on average for foregone local tax revenues.

Williams' approach has been criticized because he calculated tax loss using current tax rates and not recomputed tax rates with the value of the federal forest lands on the local tax rolls. Rosner and Barrows [11] for Wisconsin as well as the Legislative Commission on Minnesota Resources [8] used a simulation approach to recalculate the local tax rates. In both studies the fiscal impact was the difference between the present property tax rate and a simulated tax rate for a resident living in a representative township. In the simulation process, state or federal natural resource lands are either placed back on or taken off the local tax rolls. The local tax base is increased or decreased by the assessed valuation of the natural resource lands. The local levy is increased or decreased by the resulting change in intergovernmental transfer payments.

$$\text{Simulated Property Tax Rate} = \frac{\text{Levy} \pm \text{Change in Intergovernmental Transfer Payments}}{\text{Tax Base} \pm \text{Assessed Valuation of Natural Resource Land}}$$

Directly, the local governments gain or lose the payments in-lieu of taxes associated with the natural resource lands. Indirectly, local governments face changes in any state or federal aids that are based on total taxable assessed valuation. Both the Rosner and Barrows study and the Legislative Commission on Minnesota Resources study concluded that the total fiscal impact associated with different types of federal and state natural resource lands ranged from slightly negative to positive. The principal reason for the positive fiscal impacts was

changes in state school aids, which in both states are based on the total wealth of the school district measured by total taxable valuation.

Federal and state increases in the level of payments in-lieu of taxes occurred because local governments maintained the results of the above studies were incorrect. The simplest explanation for this contention is that local governments do not perceive the indirect revenue benefits. The above studies did show the difference between payments in-lieu of taxes and reduced tax collections to be negative. A more logical explanation is that many local governments do not share in the replacement revenue. In the Wisconsin and Minnesota studies the largest indirect revenue benefit was increased school aids. This increase accrues to the school district and not other affected units of government in the county. Further, the above studies treated fiscal impacts as though they are totally imposed on local governments. The county board determines the local distribution of federal in-lieu of tax payments. There is no requirement that the county board distribute federal in-lieu of tax payments to affected local governments. In those areas where local governmental boundaries are not coincidental, the revenue benefits may not accrue to the units of government where the natural resource lands are located. It is a common assumption of local impacts studies that all costs and benefits accrue to the unit of government in which the natural resource lands are located. As a case in point, in many states school districts cross county boundaries. The revenue and resulting tax impacts could be shifted from one county to another. This could explain why total impact studies have not found a significant relationship between local fiscal impact and the extent of natural resource lands. The lack of a relationship has another plausible explanation. Often state and federal agencies seek the same type of natural resource lands. A positive federal impact could be offset by a negative state impact and vice versa. The net fiscal impact may not be determined by the total amount of natural resource lands in a unit of government but rather the relative proportion of state or federal ownership of these natural resource lands.

These totally local conditions could produce groups of local governments and taxpayers that lose even when federal or state payments are adequate to replace lost local tax revenues. Thus, the disparity of local governments contending they are negatively impacted by federal and state lands, and the analytical results that contend state and federal replacement revenues are adequate can be explained. If local conditions are shown to produce negative revenue impacts the direct implication is that increased payments in-lieu of taxes may not result in the elimination of negative fiscal impacts associated with natural resource lands for a large number of local governments and taxpayers. The study which follows employs simulation to evaluate the possibility that local conditions and policies contribute to the negative fiscal impacts attributed to federal and state natural resource lands.

**Study Approach**

The study [6] utilizes the same simulation approach used previously to evaluate the local fiscal impacts of public resource lands in Minnesota [10] and Wisconsin [16]. The simulation is more detailed in that: 1) the simulation was performed for each unit of government in the study area, 2) the simulation was performed for both state and federal lands, and 3) the local distribution of payments in-lieu of taxes was also included in the simulation. The fiscal impacts were measured in terms of changed revenues for local governments and mill rate changes for individual tax districts.

**TABLE 1. Wildlife Lands in Study Area, Total Acreage, Percent of Land Area, Percent of Wildlife Lands**

| County | Federal | State |
|---|---|---|
| Big Stone | | |
| Acres | 9,456 | 2,205 |
| Percent of county | 3.02 | .70 |
| Percent of wildlife lands | 81.09 | 18.91 |
| Chippewa | | |
| Acres | 0 | 2,299 |
| Percent of county | 0 | .61 |
| Percent of wildlife lands | 0 | 100.00 |
| Lac Qui Parle | | |
| Acres | 12,051 | 7,752 |
| Percent of county | 2.45 | 1.58 |
| Percent of wildlife lands | 60.85 | 39.15 |
| Swift | | |
| Acres | 5,576 | 4,500 |
| Percent of county | 1.18 | .95 |
| Percent of wildlife lands | 55.34 | 44.66 |
| Yellow Medicine | | |
| Acres | 70 | 3,581 |
| Percent of county | .01 | .74 |
| Percent of wildlife lands | 1.92 | 98.08 |
| Study Region | | |
| Acres | 27,153 | 20,337 |
| Percent of region | 1.27 | .95 |
| Percent of wildlife lands | 57.18 | 42.82 |

The simulation was conducted on five contiguous counties (Big Stone, Chippewa, Lac Qui Parle, Swift, and Yellow Medicine) in west central Minnesota. This area offers a number of advantages for a study of this type. The wetlands of the area serve as resting and nesting areas for migratory waterfowl. Both the Federal Wildlife Service and the Minnesota Department of Natural Resources have programs to purchase wetlands in the area. The ownership between the two agencies is uneven by county (Table 1). The in-lieu of tax payments for the two agencies were also different. At the time of the study the federal in-lieu of tax payment was three-fourths of 1 percent of assessed market value and the state rate was a flat $.50 per acre. The 186 wildlife refuges in the area accounted for only 2.2 percent of the total land area of the study region. The presence of the state and federal lands are not perceived as changing local government's expenditure patterns. There is a private market for wetlands in the area, thus local assessors were able to assign a fair market value to each of the wildlife refuges. The school district boundaries in the area cross county lines. Finally, the county boards use different distributional formulas (Table 2) to parcel out the federal in-lieu of tax payments. Minnesota has a required formula for state payments which attempts to distribute the fiscal impact in proportion to the local tax rates.

The study was conducted on the assumption that all state and federal lands were returned to private ownership. This procedure estimates current fiscal impacts.

**TABLE 2. In-Lieu of Tax Allocation Formulas for Study Counties as of June 1978**

| County | State Distribution Formula | Federal Distribution Formula |
|---|---|---|
| Big Stone | Percent of Summed Mill Rates for Governments in which Wildlife Unit Lies[1] | 1) 1/2 to County Road and Bridge Fund<br>2) 1/2 to be distributed equally to School Districts 57, 58, 60 and 62. |
| Chippewa | Percent of Summed Mill Rate for Governments in which Wildlife Unit Lies | None |
| Lac Qui Parle | Percent of Summed Mill Rate for Governments in which Wildlife Unit Lies[1] | 1) 1/2 to County Road and Bridge Fund<br>2) 1/2 to be distributed to School Districts as percent of total students residing in county |
| Swift | Percent of Summed Mill Rate for Governments in which Wildlife Unit Lies[1] | 1) Total minus $1 to County Road and Bridge Fund<br>2) $1 to be distributed to School Districts in county. |
| Yellow Medicine | Percent of Summed Mill Rate for Governments in which Wildlife Unit Lies[1] | 1) 1/2 to County Road and Bridge Fund<br>2) 1/2 to be distributed to School Districts as a percent of total students residing in county. |

[1] Required by Minnesota Statute

### Direct and Indirect Revenue Impacts on Local Units of Government

The simulation calculated the absolute direct and indirect revenue gains or losses for each unit of government in the region as a result of the resident federal and state wildlife lands. The direct revenue impact was the difference between the received payments in-lieu of taxes minus the foregone local tax revenue based on the calculated tax rate assuming that the public lands were privately owned and paying local property taxes. The indirect revenue impact was the difference in state aids between the current situation where the public lands are off the tax rolls and if the public lands were returned to the tax rolls. Table 3 summarizes in percentage term individually and totally the direct (in-lieu of tax payment minus the foregone local tax revenue divided by the foregone local tax revenue) and indirect (change in state aid minus foregone local tax revenue divided by foregone local tax revenue) revenue impacts by type of local governmental unit for both state and federal wildlife management areas.

Directly the federal payments in-lieu of taxes replaced 95.16 percent of the foregone local tax revenue in the study region. The allocation decisions of the county boards are clearly apparent. In only one county did the county board create a negative (present payments in-lieu of taxes are less than foregone tax

**TABLE 3. Direct and Indirect Revenue Impact by Type of Government Measured as Percent Gain or Loss from Local Foregone Tax Revenue**

| | County Governments | Townships | School Districts | | | All Local Governments | | |
|---|---|---|---|---|---|---|---|---|
| | Direct Revenue Impact[1] | Direct Revenue Impact[1] | Direct Revenue Impact[1] | Indirect Revenue Impact[2] | Total Direct & Indirect[3] | Direct Revenue Impact[1] | Indirect Revenue Impact[2] | Total Impact[3] |
| | U.S. Fish & Wildlife Service | | | | | | | |
| Big Stone | -10.76 | -100.00 | -38.86 | -25.35 | 35.79 | -30.82 | -57.77 | 11.41 |
| Chippewa | | | | | | | | |
| Lac Qui Parle | 257.92 | -100.00 | -1.28 | -28.58 | 70.14 | 43.70 | -49.44 | 95.68 |
| Swift | 105.34 | -100.00 | -99.99 | -12.75 | -12.74 | -31.63 | -49.44 | 18.93 |
| Yellow Medicine | 95.22 | -100.00 | -16.48 | -9.63 | 73.89 | 10.07 | -40.46 | 69.61 |
| Study Region | 78.72 | -100.00 | -36.36 | -23.97 | 39.67 | -4.84 | -52.42 | 42.74 |
| | Minnesota Department of Natural Resources | | | | | | | |
| Big Stone | -71.22 | -69.69 | -76.95 | -26.82 | -3.77 | -74.39 | -58.43 | -32.82 |
| Chippewa | -83.02 | -82.99 | -86.21 | -13.09 | .70 | -84.87 | -49.45 | -34.32 |
| Lac Qui Parle | -73.01 | -77.23 | -78.50 | -19.38 | 2.12 | -77.26 | -42.42 | -19.68 |
| Swift | -74.99 | -76.04 | -79.74 | -12.82 | 7.44 | -77.80 | -50.50 | -28.30 |
| Yellow Medicine | -88.71 | -88.02 | -90.98 | -20.14 | -11.12 | -90.18 | -46.61 | -36.79 |
| Study Region | -79.82 | -80.53 | -83.88 | -18.29 | -2.17 | -82.48 | -47.52 | -30.00 |
| | Total U.S. Fish & Wildlife Service & Minnesota Department of Natural Resources | | | | | | | |
| Big Stone | -17.87 | -96.13 | -43.42 | -25.53 | 31.06 | -36.01 | -57.85 | 6.14 |
| Chippewa | -83.02 | -82.99 | -86.21 | -13.09 | .70 | -84.87 | -49.45 | -34.32 |
| Lac Qui Parle | 136.49 | -91.37 | -37.80 | -25.32 | 36.88 | .28 | -46.01 | 54.27 |
| Swift | 39.19 | -89.83 | -92.53 | -12.77 | -5.29 | -48.87 | -49.83 | 1.30 |
| Yellow Medicine | -86.46 | -88.15 | -90.14 | -20.02 | -10.17 | -89.04 | -46.54 | -35.58 |
| Study Region | 15.77 | -90.78 | -56.76 | -21.53 | 21.71 | -37.68 | -50.33 | 11.98 |

[1] Percent gain or loss in local revenue resulting from in-lieu of tax payments only.

[2] Percent gain or loss in revenue resulting from changes in Minnesota School Aids only.

[3] The combination of the direct and indirect impacts which are separately negative can result in a positive revenue gain.

revenues) direct revenue impact for the county government; the revenue gain in the other counties ranged from a 78.72 percent gain to a 257.92 percent gain. The direct revenue impact on all other local units of government was negative. Townships were absolute losers in that no county board allocated them any of the federal payments in-lieu of taxes. The direct revenue impact on school districts ranged from almost 100 percent loss to almost total direct replacement of revenues. The State of Minnesota indirectly replaced 47.58 percent of the foregone local tax revenues in the study region. The total indirect aid went to the school district. When these indirect aids are included the revenue impact for school districts in four of the five counties is positive. When the federal in-lieu of tax payments and Minnesota state aids are aggregated the result is a 42.74 percent total increase in revenues to the study region. Thus, a positive total revenue impact is associated with the federal lands in the study region.

The direct revenue impact associated with the state lands was negative. The state payments in-lieu of taxes directly resulted in an 82.48 percent loss in revenue to the local governments in the study region. Because of the state allocation requirement the direct revenue loss was distributed across all levels of government. The brunt of the revenue loss, however, fell on the county governments and townships. The State of Minnesota indirectly replaced 52.48 percent of the foregone local tax revenue through changed school aids. As a result, the total

revenue impact on school districts ranged from slightly negative to slightly positive.

The combined total revenue impact of both the state and federal properties was positive. The governments in the region received a total of 11.98 percent more revenues. The combined total impact by county ranged from a 35.58 percent loss to a 54.27 percent overall gain. Only county governments and school districts experienced positive total revenue impacts. The percentage change in revenues masks the extent of the resulting gain and loss for local governments. Directly, only three of the 104 local units of government impacted by the federal refuges experienced a positive revenue impact. These were all county governments. When the indirect state aids are included, the number of local governmental units with positive impacts is increased to 19. Only 13 of the 125 impacted local governments experienced a positive revenue impact from the state lands. All 13 governments with positive impacts are school districts and only when Minnesota school aids are included. For both state and federal lands combined, only ten local units of government experienced a positive revenue impact. The result is that while the overall measured revenue impact for the region is positive, for most units of government the revenue impact is negative.

That the relative extent of federal and state lands affects the total impact is also illustrated. There were overall positive revenue impacts in counties in which over 50 percent of the wildlife land is in federal ownership. The presence of federal lands mitigated the negative impact associated with state land while state lands reduced the revenue gain associated with federal lands.

### Tax Impact on Local Residents

The last section clearly showed that the county boards' distribution of federal payments in-lieu of taxes among local levels of government differed from the distribution of the local tax dollars. The county boards also determined the dis-

**TABLE 4. Local Fiscal Impact of National Wildlife Refuge in Yellow Bank Township of Lac Qui Parle County.**

| Unit of Government | Tax Revenue if Land is on the Local Tax Rolls | In-Lieu of Tax Payment | Minnesota School Aids | Net Gain of Loss | Change in Mill Rate |
|---|---|---|---|---|---|
| Lac Qui Parle County[1] | 3,940.88 | 15,940.50 | | 11,999.61 | -.2298 |
| Yellow Bank Township[1] | 1,836,32 | | | -1,836.32 | 1.1531 |
| School District 62[1] | 15,343.95 | 134.42 | 10,483.94 | -4,833.24 | .4139 |
| School District 128 | | 107.68 | | 107.68 | -.0345 |
| School District 129 | | 450.42 | | 450.42 | -.0403 |
| School District 371 | | 1,912.16 | | 1,912.16 | -.8870 |
| School District 376 | | 1,202.05 | | 1,202.05 | -.7001 |
| School District 377 | | 5,524.63 | | 5,524.63 | -.8671 |
| School District 378 | | 5,892.70 | | 5,892.70 | -.5890 |
| School District 784 | | 175.94 | | 175.94 | -.0286 |
| School District 891 | | 492.64 | | 492.64 | -.0519 |
| School District 892 | | 49.26 | | 49.26 | -.0081 |

[1] Unit of government in which National Wildlife Refuge is located.

tribution of the federal in-lieu of tax payments among local governments of the same type. The distribution schemes used by the county boards in the study region shifted the federal replacement revenues from the unit of local government suffering the loss of tax revenues to local governments experiencing no loss of tax revenue. This shifting of replacement revenues combined with the redistribution of revenue between types of local governments resulted in a very uneven tax impact. A good example of this is the National Wildlife Refuge located in Yellow Bank Township of Lac Qui Parle county. This refuge is on the border with Big Stone county. The refuge resides in a school district located predominantly in Big Stone county. The Lac Qui Parle county board uses an allocation procedure based on resident students living in Lac Qui Parle county. Table 4 gives both the revenue changes and the mill rate changes associated with the refuge for all affected local units of government. This refuge resulted in an overall revenue increase of $5,303.29. However, School District 62, in which the refuge is located, lost $4,833.24 and thus experienced a .4139 mill increase in its rate. The taxpayers in the tax district in which the refuge is located experienced the largest increase in their mill rate, 1.3372 mills (−.2298 + 1.1531 + .4139). Taxpayers in the remainder of Lac Qui Parle county experienced a reduction in their tax rate ranging from .2379 mills to 1.1168 mills. Figure 1 shows the total tax impact associated with both the state and federal lands. The measured total revenue impact (Table 3) for Big Stone county is positive. The large tax increase for the south half of Big Stone county is the direct result of the allocation decision in Lac Qui Parle county. The largest decrease in mill rate occurred in central Lac Qui Parle county, an area of few state or federal wildlife refuges. The Lac Qui Parle county board effectively shifted the replacement revenues associated with the federal refuge, creating negative and positive local fiscal impacts.

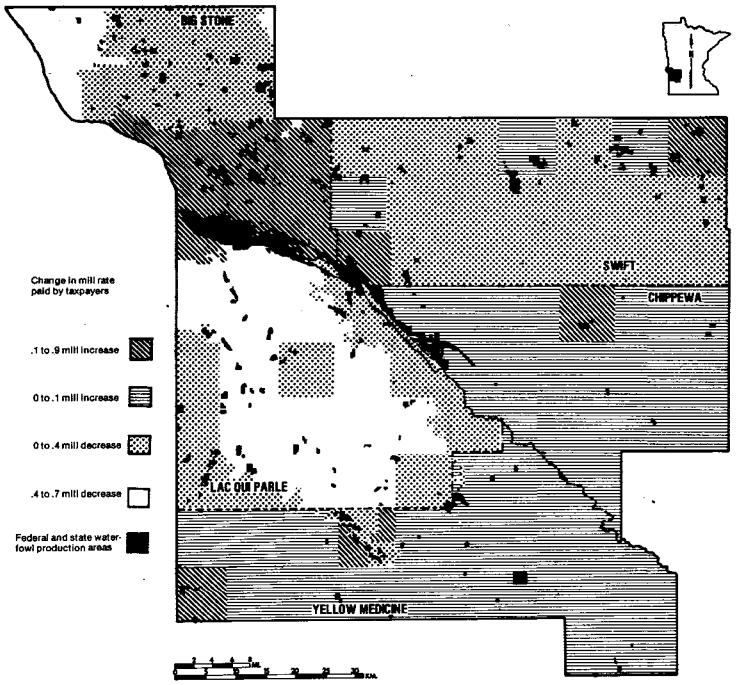
Figure 1 also illustrates the ubiquitous nature of the tax impact. All 239 taxing districts in the study region experienced a change in tax burden because of the wildlife refuges in the region. Fifty percent of the taxing districts experienced increased mill rates and the remaining 50 percent decreased mill rates. The total change in mill rates paid by local taxpayers ranged from a .8109 mill increase to a .6806 mill decrease. Over 70 percent of the wildlife lands were located in taxing districts with increased mill rates. Further, all large increases in local mill rates occurred in tax districts located along county boundaries.

**Evaluation and Conclusions**

The results of this study do pose a number of concerns over both the policies and evaluations of fiscal impacts associated with natural resource lands. The study demonstrated: 1) the allocation decision made by the county board can be a significant factor in the fiscal impacts associated with federal lands, 2) the allocation decision made in one county can create fiscal impacts in adjacent counties, 3) changes in other state aids can be a significant component in the determination of impacts associated with resource lands, and 4) the total local impact can be dependent on the relative amounts of federal and state lands in an impacted unit of government. The results raise doubts about the validity of the total impact approach. The total measured local impact becomes a rather random measure if the local county governments can shift the local fiscal impact to adjoining counties. For simulation studies, the implication is that such simulations must be performed on contiguous governments and not a representative government or tax district in which a natural resource land is located.

The findings of the study do not offer a justification for increases in the level of federal in-lieu of tax payments to local governments. The federal in-lieu of tax

**FIGURE 1. Change in Mill Rate for Taxing Districts in Upper Minnesota Valley Regional Development Commission Resulting From Federal and State Waterfowl Production Lands.**




payment came close to compensating totally for the lost local tax revenue; it was the county boards' allocation decisions that created the negative fiscal impacts for local governments. An increase in the level of federal in-lieu of tax payments in the study area would increase the windfall to those units of government already positively impacted and do nothing for those negatively impacted. The political implications of the results are simple. Based on numbers of impacted governments, the most common experience is a negative impact, thus the pressure for increased payments. To correct the local negative revenue impacts federal payments in-lieu of taxes must be allocated to the units of government in which the federal lands are located, perhaps based on the formula required by the State of Minnesota. The net windfall associated with the federal lands resulted because of increased Minnesota school aids. Thus, a large negative fiscal impact fell on the taxpayers of Minnesota. If there is a negative impact to be addressed it is at the state level. This questions the federal policy of directing all payments in-lieu of taxes to counties. This impact is nearly nationwide since almost all states have some form of state school aid based on an equalization formula [14]. The federal government could make payments to the state, or simply require that federal lands be included on the local tax rolls for state equalization payments. In the case of federal waterfowl lands in Minnesota, this would eliminate the local windfalls.

Minnesota has passed legislation to eliminate the negative direct revenue impact associated with its lands. It has, however, left the indirect revenue impacts

resulting from state school aids untouched. The result for the study area will be a net revenue windfall from both the state and federal lands. But perhaps of more concern than the windfall is that a large part of the cost of state and federal wildlife lands is paid by the State Department of Education and not the Minnesota Department of Natural Resources or U.S. Fish and Wildlife Service. The true cost of these lands to the Minnesota taxpayer as expressed by the in-lieu of tax payments is an understatement. Further, the state may fairly question the wisdom of providing indirect subsidies for federal lands within its boundaries. From a state perspective, if it wished to eliminate the windfalls and/or the indirect cost to the State Department of Education associated with either federal or state payments in-lieu of taxes, its best approach would be to require natural resource lands be retained on the local tax rolls for equalization purposes.

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