

Executive Summary

An Economic Evaluation of the Pennsylvania State Forest System

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Approximately 58 percent of the land in Pennsylvania is forestland (USDA Forest Service, 2016), and the Pennsylvania state forest system accounts for approximately 13 percent, or 2.2 million acres, of that land (Pennsylvania Department of Conservation and Natural Resources, 2016b). Over two-thirds of Pennsylvania's counties (48 out of 67) have state forestland within their boundaries (Pennsylvania Department of Conservation and Natural Resources, 2016b).

In addition, the entire state is divided into 20 state forest districts so that the Pennsylvania Bureau of Forestry, which is under the Department of Conservation and Natural Resources, can provide technical assistance to private forest landowners, and provide forest-related public services to the general public within the district boundaries.

Pennsylvania forestlands provide economically beneficial forest ecosystem services that include ecological services (e.g., air purification), forest goods (e.g., timber), and socio-cultural benefits (e.g., recreation).

This research explored the economic benefits of the Pennsylvania state forest system and how the system contributes to the well-being of Pennsylvanians. The research also explored current state forest governance practices, including the payment-in-lieu of taxes (PILT) system that was established to provide monetary payments to local government jurisdictions (county, municipal, and school district) that have non-taxable state forestland within their jurisdictions.

Income Derived from State Forest System

To estimate income derived from the state forest system, the researchers compiled and analyzed 5 years of data (2012-2016) from the Bureau of Forestry that detailed sales of state forest goods (e.g., timber, gas and oil). Over the 5-year period, the state forest sold about \$632 million of forest goods, with oil- and gas-related sales accounting for about 80 percent of the total, and timber-relat-

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promote and sustain the vitality of Pennsylvania's rural and small communities.

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ed sales accounting for 18 percent of the total. On average, there were 544 bids and 141 timber sales each year. The difference between the minimum bid price and the sale price was about \$62,000, on average.

Economic Contribution and Income Analysis

The researchers also used existing data to conduct economic contribution and impact analyses for recreational trips made to state forestlands. For the contribution analysis, the researchers used existing expenditure data – how much people spend on recreational trips made to state forestlands – from visitor-use-monitoring surveys conducted specifically for Pennsylvania’s state forests (Pennsylvania Department of Conservation and Natural Resources, 2016a). According to the data, the total estimated annual expenditures associated with state forest visitation were nearly \$400 million. The major industries associated with the expenditures were lodging, restaurants, groceries, and gasoline, which accounted for 87 percent of the total. The estimated total economic contribution to Pennsylvania’s economy related to these state forest recreational trips was 5,122 jobs, \$180 million in labor income, \$454.7 million in total output, and \$266.7 million in value-added effects. The data also suggest that for every three jobs created by state forest visitation spending, one additional job will be created in Pennsylvania’s economy; and that every \$1 of direct output resulting from state forest visitation spending generates an additional \$0.89 of output in Pennsylvania’s economy.

For the economic impact analysis, the researchers used existing expenditure data from survey-based estimates of how much out-of-state visitors spent on trip- and equipment-related items for hunting, fishing, and wildlife-watching in Pennsylvania in 2011. The activity was scaled to the level of the state forest system using wildlife tourist survey results (i.e., 16 percent of expenditures were estimated to have been spent on trips to state forestlands). The total estimated annual expenditures associated with state forest visitation were approximately \$93.4 million. The estimated total economic impact to Pennsylvania’s economy of spending related to these out-of-state state forest recreational trips was 1,716 jobs, \$64 million in labor income, \$117.4 million in total output, and

\$94 million in value-added effects. The data also suggest that for every three jobs created by out-of-state state forest visitation spending, one additional job will be created in Pennsylvania’s economy; and that every \$1 of direct output resulting from out-of-state state forest visitation spending generates an additional \$1.25 of output in Pennsylvania’s economy.

State Forest Value Estimation

The researchers also used nonmarket-based research approaches to estimate state forest value. In collaboration with the Penn State Center for Survey Research, the researchers conducted a contingent valuation survey of 609 randomly selected Pennsylvania adults. As part of the survey, respondents were asked how much they would be willing to pay each year in extra state taxes to conserve and expand Pennsylvania state forestlands. Almost two-thirds (62.5 percent) responded that they would be willing to pay something. Of that two-thirds, about half said they would be willing to pay less than \$50 and half said more than \$50. A higher percentage of urban residents (64.8 percent) compared to rural residents (56.2 percent) stated that they would be willing to pay something. The average value, which includes those who were not willing to pay anything, was \$63.12, with a \$5.08 margin of error. The average of just those willing to pay something was \$101.06, with a \$7.36 margin of error. The average for urban residents was \$60.87, with a \$5.16 margin of error, and the average for rural residents was \$69.28, with a \$12.70 margin of error. Survey respondents were also asked how many days they go to a Pennsylvania state forest for recreational activities (in a typical year). The most common response (more than one third of respondents) was less than once a month but greater than a single visit per year (i.e., between two and 11 visits a year). A little less than one third of the respondents indicated that they do not typically visit a state forest at all to recreate. The number of days spent recreating was 13.20 days, on average, with a margin of error of 1.4 days. The number of days for rural residents was 19.15 days per year (4.1 margin of error), on average, with a median of 4 days per year. The number of days, on average, for urban residents was 11.08 days per year (1.2 margin of error), with a median of 4 days per year. The research also

found that having personal experience with a state forest improved the odds of being willing to pay something each year in extra state taxes to conserve and expand Pennsylvania state forestlands.

To assess state forest governance practices, the researchers interviewed 55 district and assistant district foresters from each of the 20 state forest districts. Interviews were open and conversational, and included exploring how forest management practices include leveraging stakeholders and how these practices reflect forest value. Similar themes emerged from the interviews, which included how the multiple roles of the forest manager – while demanding – provide an array of value; how district personnel levels are dwindling and may ultimately affect the ability to govern the forest appropriately; how increasing demands of multiple state forest user groups are many times at odds with one another; and how partnerships with individuals and organizations external to the Bureau of Forestry help to ensure the quality of the state forest system.

Analysis of Payment-In-Lieu of Taxes

The researchers also analyzed the Pennsylvania PILT system for state forestland and compared it to 10 peer states. According to data provided by the Bureau of Forestry, in 2016, PILT payments were made to 386 local governments, 158 school districts, and 51 county governments statewide, for a total of \$7.7 million, or about \$2.57 million to each jurisdictional level. The PILT payment was set at \$1.20 per acre per jurisdictional recipient (i.e., \$3.60 total per acre), but has since increased to \$2 per acre per jurisdictional recipient (i.e., \$6 total per acre) per Act 85 of July 13, 2016. The research on state forest PILT systems in 10 peer states suggests that Pennsylvania's flat-rate of \$6 PILT per acre appears adequate compared to the PILT average-per-acre of peer states. Some states do not have a PILT system at all for state forestland. Those that do tend to have substantially more complicated PILT calculation systems than Pennsylvania's, but come up with relatively similar payments.

It is important to note that while the research explored multiple aspects of the state forest system, it did not capture the entire value of Pennsylvania's state forest system. Capturing all values that the state forest system provides to Pennsylvanians was beyond the scope of the study. For example,

the research did not consider the value of carbon sequestration or water purification, which are forest services that are estimated at providing billions of dollars in value annually (Virginia Department of Forestry, 2006, 2015; National Association of State Foresters, 2017). Exploring these values in-depth deserves further consideration.

Policy Considerations

Some policy considerations from the research were to: consider ways to increase individuals' personal experiences with state forests, especially among those individuals who have not visited a state forest; consider how revenue generated from recreational activity may help offset the increased burdens of the activity; consider ways to reduce administrative burdens through advances in technology; and consider ways to expand the leveraging of partnerships that support state forest district operations.

For a copy of the report, *An Economic Evaluation of the Pennsylvania State Forest System*, visit the Center's website at www.rural.palegislature.us.

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