

Plant Materials Program

“The Plant Materials Program and its cooperators have contributed the bulk of the material and technology now used in ecosystem restoration and are our foundation for meeting conservation challenges of the future.”
 -- D.T. Booth and T.A. Jones, *Native Plants Journal*

Costs and Benefits 1935-2005

Since 1935, the NRCS Plant Materials Program has selected conservation plants and developed innovative planting technology to solve the nation’s most important resource concerns. The Program includes a network of 27 Plant Materials Centers (PMCs) and Plant Materials Specialists serving all 50 states and territories.

The program has released over 600 conservation plants, most being grown by commercial growers. Current program leaders asked for an economic analysis from Curtis Sharp, former national program leader for plant materials, to compare costs and benefits of this work. All comparisons of financial data are stated in 2005 dollars.

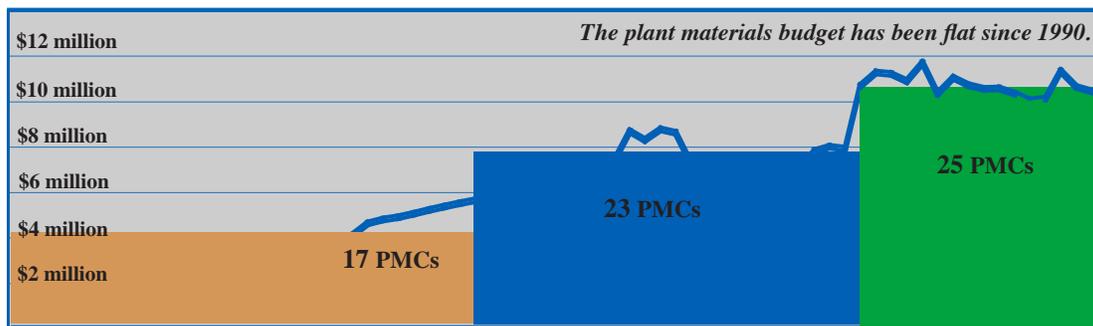
Costs of the Plant Materials Center Program

Costs in this analysis are the annual funds appropriation by Congress for operating the program from its beginning in 1935 through 2005. In 2005 dollars, total costs are \$468 million.



‘Cave-in-Rock’ switchgrass, a PMC-developed cultivar, was originally selected in the 1970s for forage and soil erosion but has also proven itself as an excellent grass for biofuel in this millennium.

Annual Plant Materials Budget 1935 - 2005 in 2005 dollars



The total cost for operating PMCs from 1935 through 2005, in 2005 dollars, was \$468 million. Annual program costs rose through the years as new plant centers were established to test more plants locally. The budget supported 17 PMCs from 1935 to

1965, then 23 PMCs from 1966-1989, and 25 PMCs through 2005. The appropriations peaked at \$11.7 million in 1994 but have generally leveled off since 1990.

Measured Benefits

Measured benefits cover only the period from 1977 to 2005, due to lack of data. They include the net profit realized by commercial growers from production of PMC-developed cultivars and ecological service benefits to society.

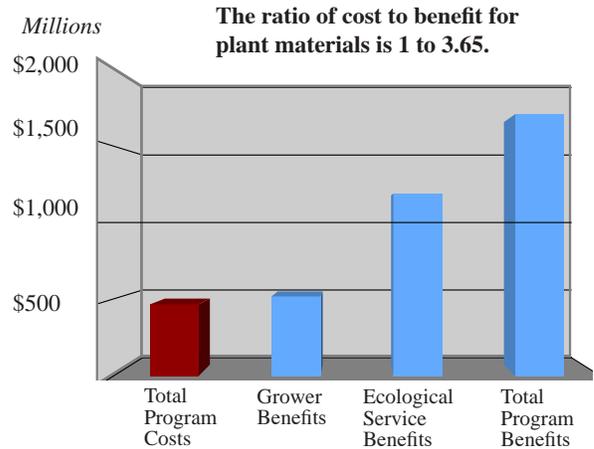
The ecological service benefit, developed by Costanza et al. (1997), is a measure of the value of goods and services produced by ecosystems for humans. Costanza calculated an ecosystem services benefit factor for many combinations of land use and ecosystem services, such as grass/rangeland (land use) and erosion control (ecological service) combination.

To measure the value of each cultivar, the total number of acre-years of productive life from the 1977-2005 commercial production for each PMC-developed cultivar was determined, and each



This analysis did not capture all economic benefits from conservation plants. For instance, it measured the ecological benefits of using ‘Cape’ American Beachgrass to revegetate coastal sand dunes, but did not include the value of protecting the multi-billion dollar housing and tourism industry along the Mid-Atlantic coast.

cultivar was assigned to a land use. The ecological service benefit factor for that land use was multiplied by the acre-years of productive life for each cultivar. This— less establishment and management costs— provides the gross ecological service benefit value of that cultivar.



Measured Benefit Results

The net benefit to commercial producers from 1977 through 2005 was \$518 million. Net benefits from the use of PMC cultivars for their ecological service value from 1977 through 2005 were \$1.18 billion for a total benefit of \$1.7 billion. The ratio of cost to benefit was 1 to 3.65.

Bottom Line:
The Plant Materials Program returns \$3.65 for every \$1 invested.

About Us

The USDA NRCS Plant Materials Program has a network of 27 Plant Materials Centers and plant specialists located throughout the United States. For over 70 years, PMCs and specialists have provided essential and effective plant solutions for critical habitats, environmental concerns, management practices, and key farm and ranch programs.

For more information, visit:
<http://Plant-Materials.nrcs.usda.gov>
<http://www.nrcs.usda.gov>

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