

Statewide Timber Inventories

FY2011 Request: \$215,000

Reference No: 49201

AP/AL: Appropriation

Project Type: Research / Studies / Planning

Category: Natural Resources

Location: Statewide

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Estimated Project Dates: 07/01/2010 - 06/30/2013

Brief Summary and Statement of Need:

Biomass projects in rural areas with high-energy costs are creating an increase in demand for wood resources. Timber inventories are essential for accurate data and realistic decisions on viability and sustainability of biomass energy and wood processing facilities. Inventories determine sustainable harvest levels, provide data to plan and defend timber sales, assist in investment analyses and identify niche value added markets. Tok, Glennallen, the Mat-Su Valley and Haines have biomass projects in various stages to heat schools and public facilities. This project supports DNR's mission to provide a sustained yield of forest products, which in turn provides jobs and stimulates local economies.

Funding:	<u>FY2011</u>	<u>FY2012</u>	<u>FY2013</u>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>Total</u>
Gen Fund	\$215,000						\$215,000
Total:	\$215,000	\$0	\$0	\$0	\$0	\$0	\$215,000

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input checked="" type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

Operating & Maintenance Costs:

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	0
Totals:	0	0

Additional Information / Prior Funding History:

New Project – No Prior Funding History

Project Description/Justification:

This project will complete a timber inventory for Interior and South Central areas including Tok, Glennallen and the Matanuska-Susitna Valley. It will also update the existing inventory for the Haines State Forest. This data will update the allowable cut levels, identify management opportunities, promoting alternative energy use, assist in hazard-fuel mitigation activities and support land management planning. Demands on state forestlands are increasing from timber sale activity, firewood harvest and potential alternative energy development. This coupled with expected changes to the forestland base due to climate change and population growth necessitate a current forest inventory.

In the Tok area, the Tanana Forest Inventory Update (SLA06/CH82) has inventoried existing timber stands in the immediate vicinity of Tok, but forestland north of Tok was not inventoried because of lack of suitable imagery. These lands were burned during the 2004 and 2005 fire seasons. By not including these areas, the new inventory volume figures underestimate the sustained yield in the Tok

area. This comes at a critical time for this community. Due to the rapid rise in energy prices, alternative energy projects are currently being proposed. In fact, the Alaska Energy Authority has recently funded a project to heat the Tok School with wood biomass. Construction of this project is slated to begin in summer 2010. In addition to this project, the Tok Utility is pursuing a medium scale combined heat and power biomass project. It is estimated that this project will require 625 acres per year of biomass residuals to convert to heat and power. Areas within the 2004 and 2005 burns still contain useable amounts of timber especially for biomass use. The Tok inventory will acquire new imagery for this area, classify forest stands and apply the updated Tanana Valley forest inventory volume per acre values to adjust the volume and sustained yield values. This analysis will then fully characterize the available wood supply in the Tok area. Biomass projects provide jobs and improve economics for timber harvest by providing additional markets for local loggers.

In the Glennallen area, this project would complete the first stand-based inventory for this area. Similar to Tok, the Glennallen area has been hard hit economically with rising energy prices. A proposed wood pellet project and a proposed school biomass-heating project are under evaluation for this area. The proposed wood pellet project would be situated on Ahtna Native Corporation lands and utilize their timber. It is expected, however, that pellet production will require state owned timber to sustain the operation. Little information is available that indicates what the true sustained yield is on state lands and no stand based inventory maps are available. To make an investment decision, inventory information is required to conduct a feasibility study and assumptions about log volumes directly affect the scale of an operation. This area also has been impacted heavily by spruce bark beetle, which has caused extensive tree mortality and affected tree volume quantities. The inventory would identify and map suitable stands for value added manufacturing and include an assessment of the bark beetle infected stands. It would also identify stands capable of supplying biomass resources and provide a basis to determine operable biomass volumes. The stand based inventory map would also assist in assessing and planning hazard fuel mitigation projects.

In the Mat-Su valley, DNR is currently updating area plans and forest management guidelines for a large portion of state owned lands. The revision process to the area plans will reevaluate state land designated for forest use.

A forest inventory is needed to evaluate fully the suitability of these lands for forest designation, and to establish the forest management guidelines. As in the Glennallen area, there is no stand-based inventory available. Current estimates of allowable cut are based on outdated 1980 U.S. Forest Service acreage and volume estimates. These estimates are not stand based and do not account for the rapid development that has occurred in the valley. Biomass energy projects are also proposed for this area and the Alaska Energy Authority is likely to fund a project to heat the new Susitna Valley Junior/Senior High School with wood biomass. The Mat-Su Borough has recently conducted a stand-based inventory on its lands and is interested in coordinating forest management activities with the state. The state however is limited in its ability to coordinate timber marketing, hazard fuel mitigation or wildlife enhancement projects without having its own inventory that categorizes the volume, sustained yield and location of forest resources. By having accurate geo-referenced timber stand locations, reconnaissance time for future timber sale layouts can be reduced thus saving state dollars.

In the Haines area, this project would complete an update of the timber inventory for the Haines State Forest. This information will be the basis for re-calculating the allowable cut levels, identifying

management opportunities, defining access routes, determining logging road status, promoting alternative energy use, and assisting in land management planning as mandated by Alaska Statute AS.41.17.230. Demands on the Haines State Forest are increasing from timber sale activity, firewood harvest and potential alternative energy development. These developments combined with increased tourism use and expected changes to the forestland base due to climate change and population growth necessitate improved forest inventory information. The update will also correct the inaccuracy of the previous inventory by utilizing technological advancements in image rectification. The original inventory was limited by technological challenges in ortho-rectifying aerial photography to match stand and ground plot data, and by the resolution of the imagery available. Improvements in image acquisition in recent years have resolved these problems through enhanced pixel resolution and more accurate ground control. Utilizing the geo-referenced imagery will allow accurate registration of stand timber types across the state forest. By having accurately registered stands, field reconnaissance time will be reduced in laying out future timber sales and access roads, thus reducing costs to the state.

The Haines Borough has submitted a proposal to the Alaska Energy Authority to conduct a reconnaissance phase followed by a resource assessment, feasibility analysis and conceptual design phase for a renewable energy project. The energy project would employ a wood-fired hydronic heating system utilizing locally available wood biomass fuel. The system would supply heat to the K-12 School, the Voc-Ed Building, the Municipal Administration Building and the Public Library. By updating the Haines State Forest inventory, an accurate resource assessment can be made available in support of this proposed alternative energy project. Accurate resource information together with a geo-referenced stand base map allows detailed analysis of harvest costs and supply to ensure project sustainability. Biomass projects provide jobs and improve economics for timber harvest by providing additional markets for local loggers.

The need exists to purchase updated aerial photography and satellite imagery to reflect changes in forest cover since 1994. In addition, much of the productive forestlands available for harvest exist in remote areas where helicopter access is required to conduct field measurements and evaluate stand conditions.

Forest inventories in the upper Tanana, South Central and Haines areas will develop a foundation for future timber sale programs. The timber sale program has supported the local economies throughout Alaska. By updating the information, timber sales can continue to be offered on a sustained and long-term basis. It will allow meaningful evaluation of proposed forest development projects to ensure they are sustainable and long term. The timber inventory will provide the following products:

- Spatially accurate stand polygons overlaid on a geographically rectified photo base.
- Accurate acreage determination of forest cover.
- Determination of species, quantity and quality of timber resources.
- Web site access to the public of spatial data with volume and acreage querying capability.
- Biomass resource information compatible with the Alaska Energy Data Inventory.
- Determination of sustained yield flow of timber products.

Why is this Project Needed Now?

Interest in alternative energy strategies is growing. The state is focused on supporting alternative energy development and decreasing our dependence on fuel oil. Our ability to evaluate the

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sustainability and economic viability of proposed projects is hampered by inaccurate and unavailable forest information. The extensive fires in 2004-5, bark beetle impacts, changes in land status, and changes in forest composition requires improved forest inventory data. Without accurate inventory data, DNR must use very conservative estimates of the sustained yield and allowable cut on state land to meet our statutory mandate to manage for sustained yield, and our mission to develop, conserve and enhance state forest resources. Potential investors require accurate inventory information before committing to new projects. Without an accurate supply analysis, it is difficult for potential investors to obtain capital or expand businesses.

Specific Spending Detail:

<u>LINE ITEM</u>	<u>DOLLAR AMOUNT</u>	<u>DESCRIPTION</u>
Personal Services	\$ 50,000	Will fund portions of existing permanent and seasonal positions to do field data collection, vegetation classification, database development and report writing
Travel	\$ 10,000	Travel and per diem for vegetation ground truthing and inventory plots.
Services	\$141,000	Aerial Photography/Satellite Imagery, Field Work Helicopter Time
Commodities	\$ 4,000	Field Supplies Flagging, Maps, Software
Capital Outlay	\$ 10,000	Hardware, computer workstation

Project Support:

Local timber industry, environmental community, Mat-Su Borough, Fairbanks Economic Development Corporation, Ahtna Corporation, Copper River School District, Alaska Gateway School District, Tanana Chiefs' Conference, Haines Borough, Haines School District, U.S. Forest Service

Project Opposition:

None known.