



## A Unified Approach to Evolving FIA's Estimation Capacity

In September 2022, the US Forest Service and the NCASI Foundation<sup>1</sup> entered into a \$1.3 million agreement to develop and execute a strategic plan for enhanced integration of remote sensing information into the FIA program with special emphasis on small area estimation techniques. This three-year project will precisely define FIA information user needs, conduct research into new estimation techniques, and deliver estimation capacity to users through development.

This effort will engage a broad range of stakeholders to assist the Forest Service in meeting a Congressional directive to “Implement procedures to improve the statistical precision of estimates at the sub-State level”. The statistical techniques developed over time to address this problem in wide ranging fields of scientific inquiry are referred to collectively as small area estimation (SAE) techniques.

New technical methods, emerging sources of geospatial auxiliary data, and powerful computational platforms offer tools for improving estimates of parameters for traditional FIA populations of interest and small areas (i.e., undersampled domains) alike. Yet, uncertainty remains regarding the best way to bridge gaps between user needs, research results, and operational adoption of new estimation methods.

This project will assemble and coordinate three panels:

- A User Panel, which will include representatives from states, private forest landowners and forest products manufacturers, non-governmental organizations, the USFS National Forest System, and other stakeholder groups. The User Panel will be charged to map out user information needs and decision requirements, identifying thematic, spatial, and temporal needs.
- A Science Panel, including experts in small area estimation techniques applied to forest inventory data, will review statistical methods and trials conducted to date and identify FIA-based SAE knowledge gaps and administer the solicitation and review of proposals.
- A Development Panel, including information technology and science professionals, will inventory and evaluate feasible categories of tools, delivery platforms, and hosting platforms and devise, prototype, and compare production alternatives for different circumstances.

After development of a detailed project plan and convening of the panels, the NCASI Foundation will begin distributing funds to Science Organizations to conduct scientific review, planning, and research. Funds will also be distributed to Production Organizations for review and proposal of production-ready solutions that integrate existing efforts, and development of feasible application hosting environments. Funding awards will be made through a combination of direct grants and solicitations for proposals.

For more information about this project, or to be added to an email list for research solicitations and informational updates, please contact:

Steve Prisley, Project Manager  
NCASI, Inc.  
[sprisley@ncasi.org](mailto:sprisley@ncasi.org)

George Gaines, SAE Portfolio Lead  
US Forest Service  
[George.Gaines@usda.gov](mailto:George.Gaines@usda.gov)

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<sup>1</sup> NCASI Foundation is a 501(c)(3) non-profit organization established in 2000 to execute the charitable activities of NCASI, Inc. The National Council for Air and Stream Improvement (NCASI, Inc.) is a 501(c)(6) tax-exempt association organized to serve the forest products industry as a center of excellence providing unbiased, scientific research and technical information necessary to achieve the industry's environmental and sustainability goals.