



# NATIONAL ASSOCIATION OF STATE FORESTERS

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August 11th, 2023

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Office of the Chief Economist  
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Washington, DC 20250-3810

Mr. William Hohenstein  
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Office of Energy and Environmental Policy  
1400 Independence Avenue, SW  
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Washington, DC 20250-3817

**Docket Number: USDA–2023–0009; Document Number 2023-14158**

## **USDA Notice of Request for Public Comment on the Federal Strategy to Advance Measurement and Monitoring Greenhouse Gas Measurement and Monitoring for the Agriculture and Forest Sectors**

Dear Dr. Meyer and Mr. Hohenstein,

The National Association of State Foresters (NASF) is pleased to provide official comments in response to the US Department of Agriculture’s (USDA) Notice of Request for Public Comment on the Federal Strategy to Advance Measurement and Monitoring Greenhouse Gas Measurement and Monitoring for the Agriculture and Forest Sectors.

NASF represents the directors of the forestry agencies in all 50 states, five U.S. territories, three nations in compacts of free association with the U.S., and the District of Columbia. State foresters deliver technical and financial assistance to private landowners for the conservation of more than two-thirds of the nation’s forests. They also partner with federal land management agencies through cooperative agreements and Good Neighbor Authority to manage national forests and grasslands.

America’s trees and forests are a strategic national resource with vast potential as solutions for climate change, public health, and economic challenges. The USDA Forest Service’s Forest Inventory and Analysis (FIA) program provides crucial information to federal and state forestry agencies, industry, academic, and conservation organizations on a wide range of forestry-related

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topics. Increasingly, FIA is relied on to provide data on the state of the nation’s largest carbon sink—our forests—making it an essential component of decisions regarding climate change mitigation and adaptation strategy. However, the demands for information on forest carbon are becoming more varied and at scales that are problematic to meet with the current design and capabilities of the program. Accordingly, we offer the following responses to your request for public comments on the following specific questions:

## **I. General Comments or Questions on the Strategy**

### **1. What key research and data gaps or modeling and monitoring needs are most critical to address in order to advance measurement, monitoring, reporting and verification of greenhouse gases in the agriculture and forestry sector?**

The existing FIA mandate is to “...make and keep current a comprehensive survey and analysis of the present and prospective conditions of and requirements for renewable resources of the forests and rangelands of the United States...” (Section 3.(b)(1) of the Forest and Rangeland Renewable Resources Research Act of 1978. P.L. 95- 307). While this is broad enough to encompass carbon data and collection, there is a need for explicit recognition of the importance of FIA in the MMRV process. However, it is important to recognize that the FIA program is funding-constrained and often labor-constrained in its efforts to deliver all the current demands on the program, and this would only be compounded by expanding the MMRV-related functions of FIA. In addition to the base program supported by the existing mandate, FIA should also collect and analyze above- and below-ground carbon data to improve our understanding of present and prospective forest carbon conditions, but it should do so with additional dedicated funding and resources to successfully meet all the demands on the program.

Providing authoritative, transparent, USDA-sanctioned data about the carbon performance of the forestry and wood products sectors is critical to their effectiveness as natural climate solutions. The success of wood products in the marketplace depends on the integrity and transparency of carbon claims. To meet this need, a specialized measurement, monitoring, reporting, and verification (MMRV) system for forest and forest product carbon is required.

We recognize that there is an effort underway to update the Technical Bulletin *Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory*. The new Chapter 5, dealing with forest systems, is an excellent comprehensive product based on the currently best available science. It includes not only standing forest inventories by type but also wood products. It also includes important references to needed improvements and is transparent as to the level of uncertainty for various estimates. The last version was published in 2014, and science and interest have advanced substantially since then.

Regarding this document, we recommend two things:

First, it needs to be a more dynamic reference where new data and methods can quickly be brought to the fore.

Second, realizing that GHG measurement is extremely complex; Tools must be developed for employing this information as simply as possible. As currently available, the use of this information would require substantial time, energy, and expertise that is seldom available at an “entity-scale.”

We propose the creation of a single USDA-sponsored platform with multiple user-friendly tools to provide transparent, high-integrity forest and wood product data to measure and monitor forest carbon throughout the value chain, providing evidence of significant carbon benefits. This system, which would be similar to the USDA-sponsored COMET-Farm platform, would:

- Quantify the carbon and sustainability benefits of forests and wood products in ways that are accessible by producers and consumers and easily understood by the public, including by updating through field verification the carbon contained in wood across different product types and species and their respective rates of decay;
- Leverage the current USDA investments in carbon data, such as the redevelopment of the Carbon Online Estimator (COLE), as well as USDA entity-level guidelines;
- Enable users to analyze the cradle-to-grave benefits of forest products and identify the best opportunities for wood products to participate in carbon markets;
- Support information dissemination on the carbon benefits of new wood applications, including those related to mass timber and other long-lived wood products, especially those that use small-diameter materials (thinnings and residues) from forest management and innovative energy uses; and
- Align and coordinate with the GHG reporting efforts of other relevant federal agencies to ensure comprehensive data collection and consistency across the government.

**2. Are the proposed activities and projects in section VI of the *Strategy* those which would most effectively advance the administration goals outlined in the Introduction? If not, what would be?**

We believe the proposed activities outlined in Section VI represent an excellent first step in responding to the need to generate more reliable, consistent and robust MMRV for carbon in the forestry section. In particular, we support the following:

- *“Overall, significant opportunities exist to build upon surveys foundational to U.S. forest resources in terms of expanded scientific endeavors, public/private tool development, and increased empirical observations (both in situ and remotely sensed) to empower community members to more equitably participate in natural climate solutions that can enhance the collective resilience of human and natural populations as global change accelerates. These include increased urban forest inventories, operational small-area estimation techniques that leverage remotely sensed data (e.g., USGS LANDSAT and NASA NISAR, LiDAR platforms, as well as private-sector and international satellite data), improved stand simulation models to assess GHG effects of climate-smart forest management practices (e.g., FVS), refined accounting linkages with forest product life cycle assessments and associated long-term carbon implications (e.g., USDA Forest Service Forest Products Lab and Timber Product Output industrial surveys/cooperation), and fuller integration with data sources (e.g., USDA NRCS National Resources Inventory).”* (Item 5)
- *“Improved tracking and reporting of GHG emissions from wildfire and prescribed burns.”* (Item 6) We especially support the development of methods to estimate GHG gases from prescribed fires which we believe will allow for the quantification of carbon benefits when prescribed fire is used in mitigation and avoidance of unplanned catastrophic wildfire.
- *“Agencies will explore potential options for future LiDAR measurements for forest measurement and biomass estimation, which could include some combination of relying on future satellite missions and airborne LiDAR mapping campaigns.”* (Item 7)
- *“USGS will work to enhance data structure, frequency, quality, and timeliness of the NLCD data to improve the timeliness and accuracy of the U.S. GHG Inventory and other products that rely on NLCD. In particular, USGS will work to integrate the NLCD with the Land Change Monitoring, Assessment, and Projection (LCMAP) data, which are produced annually and offer a suite of 10 land change and cover products going back to 1985.”* (Item 8) The important role of land-use changes in forest futuring (and thus forest carbon futuring) cannot be overstated. The recently released Resources Planning Assessment tells us that it is from development, urbanization and other land-use changes (i.e., expansion of

agricultural acreage, proliferation of solar farms, etc.) that we are projected to lose significant forest acreage and thus forest carbon over the next 50 years. The ability to monitor and respond to these changes on a real-time basis and inform policy development needs to be key to an MMRV strategy.

**3. Are there data or data products (e.g., conservation activity data, land management data, environmental data, etc.) available or under development that can improve the accuracy and timeliness of GHG estimates? This includes leveraging current or upcoming geospatial/remote sensing data products in quantifying GHG emissions for the agriculture and forest sectors.**

Federal programs such as the Environmental Quality Incentives Program, Conservation Reserve Program and others generate a tremendous amount of information on conservation activities, land management data and environmental data. Most of these program opportunities that concern forest land depend on technical assistance from, and data collection by, state forestry agencies through such efforts as the development of Forest Stewardship Plans as well as other types of management advice. Information from these efforts is captured geospatially by the US Forest Service through Forest Stewardship Program reporting, but it is not tied to subsequent reporting by the authorizing or funding agencies (i.e., NRCS and FSA).

This lack of alignment in data management leads to duplications of effort and no comprehensive method for analyzing the tremendous store of information that could be available related to assessing the benefits of forest management activities on carbon sequestration.

**4. For respondents in the agriculture and forest sectors that rely on Federal GHG inventory information and methods, how could the Federal Government's efforts be improved to meet your needs?**

Effective forest stewardship relies on a solid foundation of data and information, however, collecting more data at a higher frequency is not sufficient. Federal and private sector stakeholders need data information and analysis that is robust, reliable, timely, and relevant to emerging needs. This includes clear definitions and assumptions to calculate forest area estimates at the national and state levels. Distinctions between domestic and international reporting should be fully transparent, including how to differentiate between forestland and timberland, land cover and land use, trees and non-trees, and working forests and non-working forests.

USDA needs to ensure that all Inventory, Monitoring, and Assessment Research undertaken by the Forest Service within the FIA program, for Resources Planning Act reporting and other agency reporting and publications utilizes clearly defined terminology, assumptions, data, and analysis with the goal of transparent reporting on forest area estimates.

Field foresters who provide technical assistance to landowners are the conduit for gaining knowledge at the individual ownership level as to the condition of forests. At present, there are no easily implemented, reasonably accurate methods for adding important carbon data to the other information they collect. Were such an easily implemented process available it would help landowners participate in carbon sequestration efforts and help ground truth data that is generated at larger scales.

**5. What opportunities exist for Federal agencies to partner with external entities on the strategic priorities (e.g., forest carbon monitoring, data and computation systems, methane monitoring) outlined in the draft *Strategy* in ways that they have not previously done? This can include leveraging existing convening or organizing bodies.**

NASF encourages the Secretary of Agriculture to convene a federal advisory panel (Blue-Ribbon panel) to review the FIA Program and make recommendations to support data collection critical to the health of America's forests, especially the integration of remote sensing data into program outputs to enhance data generation on carbon and other resource questions.

To effectively identify strategic needs, modernize the inventory, and address emerging needs like carbon or climate change, a Blue-Ribbon Panel is needed to assess FIA's progress on past mandates, prioritize current program efforts, and provide specific recommendations for future action. FIA Blue-Ribbon Panels have been important mechanisms in the program's evolution and stakeholder relevance in the past. The first FIA Blue-Ribbon Panel was formed in 1991 and led to a nationally consistent vision for the program, while the second was organized in 1998 with an update in 2001 to assess progress on items identified by the first panel. Both panels were organized and led by an external organization with national and cross-sector representation of key program stakeholders that led to formal reports with specific action items. Given the nearly two decades since the last Blue-Ribbon Panel and extensive shifts in both technology as well as forest conditions, **we believe a third FIA Blue-Ribbon Panel is timely and needed to ensure overall program success, particularly for addressing current needs and emerging policy.**

Additionally, the fragmented nature of the forestry and wood products supply chain means that many entities compete for scarce R&D dollars from the same public and private agencies. A more concerted, coordinated effort is needed. A public-private partnership that wins strong private sector support and operates with joint governance and an independent steering committee could move rapidly, set joint priorities, operate transparently, and obtain and leverage public funding for R&D. The work of this entity can build off an effort already taking place since 2020 to create a dialogue with national leaders from state foresters, family forests, large private forest owner/managers, forest products, environmental NGOs, USFS National Forest System, USFS Research Station directors, and universities to discuss the benefits, outcomes, resources, investments, priority setting, potential advocacy needs, and other challenges of FFP R&D. In 2022, a national survey

effort to prioritize FFP R&D was initiated, and a summit will be held in 2023 to discuss the role of one convening body to advocate for these priorities. **We encourage the establishment of a public-private partnership between USDA, the Forest Service, other government research funding agencies, and an entity with a diverse and representative independent steering committee to create a joint strategic approach to allocating and leveraging public funding for applied research and development, with an emphasis on meeting identified regional needs.**

**6. What verification protocols (national, subnational, or field scales) should the Federal Government be aware of to accelerate progress in GHG measurement and monitoring for forestry or agricultural GHG monitoring?**

Carbon project developers, who have become an important catalyst for increasing carbon storage on private lands, use a variety of different registries to verify carbon benefit generation at the ownership level. Though each registry has developed its verification protocols to be credible and backed by available science, there is no consistency between the protocols of the various registries. This leaves carbon markets vulnerable to criticisms and threatens the long-term viability of the installation of such projects as a means to enhance carbon uptake from the atmosphere.

One approach would be to incentivize registries to petition the International Standards Organization to request the initiation of a consensus-based process to standardize protocols. Ideally, this would be not just a national effort, but a global one that could perhaps begin to deal with currently difficult issues such as accounting for the phenomenon of leakage.

## **II. Forestry-Specific Questions**

**1. What technologies and methods have demonstrated success in improving annual GHG estimation of forest carbon, including forest product life cycle assessments and associated long-term carbon implications, and could, with modest additional effort, be transitioned to more sustained use or scaled up?**

Strengthen the FIA Program:

As referenced in the answer to question I-1 above, the FIA program of the USDA Forest Service is the nation's forest census, providing the backbone for nearly every data-driven research question that is asked at various scales, from national to regional to state to local questions. The increasing prevalence of carbon-related data questions strains the existing inadequate budget and labor resources the program operates on. Additional funding and resources devoted to the FIA program are necessary to scale it up, and additional statistical research capacity is required to develop and employ the complex cutting-edge statistical imputation and estimation procedures required to

produce the level of accuracy that clients are demanding today for smaller geographic areas. This additional analytical capacity needs to focus research efforts to improve the best applications and integration of remote sensing technologies within the FIA program and develop technologies to reduce costs and make it easier to measure and monitor forest carbon (especially for forest inventories and verification). Using imagery from advanced technologies, especially remote sensing platforms, would improve products for decision-making by policy makers and managers and enable forest owner participation in carbon crediting opportunities.

FY21 marked the first year Congress appropriated the Forest Service budget under a modernized structure. To transition to this new structure, the historical budget for each program account was broken out into three parts: operations (aka cost pools), salaries & expenses, and program dollars. Under the new budget structure, Congress calls out how many program dollars should be devoted to FIA (to support grants and agreements with states and other cooperators); however, there is not a dedicated salary & expenses line for FIA, which concerns us. Establishing a BLI for salary and expenses for the FIA program will help ensure that each research station is spending an appropriate amount of salary and expenses funding on FIA and hiring critical positions to ensure program delivery. We encourage the Administration to use this approach in its annual Budget Justification submission to Congress, recognizing to appropriators and the public the program and S&E funding necessary to deliver FIA.

**Strengthen the Role of the Resources Planning Act (RPA) Assessment and Associated Forest Carbon Projection Capabilities:**

The Resources Planning Act (RPA) Assessments and supporting technical reports produced by the Forest Service RPA research team represent a valuable set of scientific information underutilized by stakeholders interested in forests, carbon, and climate. In order to enhance utilization and strengthen the role of the RPA Assessments, Forest Service leadership should (1) prioritize engagement with external stakeholders to help direct more timely and responsive RPA research efforts on forest carbon projections and (2) respond to specific policy-relevant questions from interested stakeholders. In addition, USDA should continue to seek guidance from the expertise of modelers within the USDA Forest Service that specialize in combined ecological/economic “futuring.” The modeling work of these scientists is the best way to gauge the carbon impacts of proposed USDA policies in a way that adequately assesses potential economic feedbacks.

**2. What technologies and methods have demonstrated success in improving GHG estimation for urban forestry? For respondents in the urban forestry sector that rely on Federal GHG inventory information and methods, how could the Federal Government's efforts be improved to meet your needs?**



Urban trees and forests play a critical role as part of the nation’s forest landscape and are the green infrastructure that fosters community health and well-being. The benefits of an urban forest inventory have been realized in communities across the country over the past decade; however, there is an urgent need to implement a nationwide annualized inventory of trees in urban settings that should include the status and trends of trees and forests, assessments of their ecosystem services and economic values, and risk from infestation by pests and diseases. Increased federal funding for the FIA program would enable more widespread implementation of urban FIA. More information on where and to what extent urban FIA has been implemented can be found on the USDA Forest Service website at <https://www.fia.fs.usda.gov/program-features/urban/>. In each of these cities the USFS has worked with active state partners who initiated contact with the USFS to conduct urban inventories and contributed staff time or funds to these efforts.

The 2015 USDA FIA Strategic Plan outlines the value of the addition of a federally funded strategic urban inventory to the program as one of its options. This option would implement an urban FIA in the areas classified as ‘census urban’ at base FIA intensity (1 plot per 6,000 acres) and would intensify to at least 200 plots on a fixed grid across cities with populations larger than 200,000 people. This option also includes an alternative that would provide states the opportunity to expand the inventory to smaller urban areas at their own expense. **NASF supports increasing FIA funding to allow FIA to partner with states and other organizations to deliver the comprehensive nationwide inventory of urban data outlined in the 2015 USDA FIA Strategic Plan.**

We thank you for the opportunity to provide public comments and look forward to continuing our strong partnership in stewarding the nation’s forests.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kacey KC', with a long horizontal flourish extending to the right.

Kacey KC  
NASF President  
Nevada State Forester